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<120> PROTEASE DEFICIENT FILAMENTOUS FUNGAL CELLS AND METHODS OF USE THEREOF

<130> 61967-3001900

<160> 588

<170> PatentIn version 3.5

<210> 1
<211> 407
<212> PRT
<213> Trichoderma reesei

<400> 1

Met Gln Thr Phe Gly Ala Phe Leu Val Ser Phe Leu Ala Ala Ser Gly
1 5 10 15

Leu Ala Ala Ala Leu Pro Thr Glu Gly Gln Lys Thr Ala Ser Val Glu
20 25 30

Val Gln Tyr Asn Lys Asn Tyr Val Pro His Gly Pro Thr Ala Leu Phe
35 40 45

Lys Ala Lys Arg Lys Tyr Gly Ala Pro Ile Ser Asp Asn Leu Lys Ser
50 55 60

Leu Val Ala Ala Arg Gln Ala Lys Gln Ala Leu Ala Lys Arg Gln Thr
65 70 75 80

Gly Ser Ala Pro Asn His Pro Ser Asp Ser Ala Asp Ser Glu Tyr Ile
85 90 95

Thr Ser Val Ser Ile Gly Thr Pro Ala Gln Val Leu Pro Leu Asp Phe
100 105 110

Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Lys
115 120 125

Ser Ser Ala Thr Gly His Ala Ile Tyr Thr Pro Ser Lys Ser Ser Thr
130 135 140

Ser Lys Lys Val Ser Gly Ala Ser Trp Ser Ile Ser Tyr Gly Asp Gly
145 150 155 160

```
Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Lys Val Thr Ile Gly Gly
                165                 170                 175

Phe Ser Val Asn Thr Gln Gly Val Glu Ser Ala Thr Arg Val Ser Thr
            180                 185                 190

Glu Phe Val Gln Asp Thr Val Ile Ser Gly Leu Val Gly Leu Ala Phe
        195                 200                 205

Asp Ser Gly Asn Gln Val Arg Pro His Pro Gln Lys Thr Trp Phe Ser
    210                 215                 220

Asn Ala Ala Ser Ser Leu Ala Glu Pro Leu Phe Thr Ala Asp Leu Arg
225                 230                 235                 240

His Gly Gln Asn Gly Ser Tyr Asn Phe Gly Tyr Ile Asp Thr Ser Val
                245                 250                 255

Ala Lys Gly Pro Val Ala Tyr Thr Pro Val Asp Asn Ser Gln Gly Phe
            260                 265                 270

Trp Glu Phe Thr Ala Ser Gly Tyr Ser Val Gly Gly Gly Lys Leu Asn
        275                 280                 285

Arg Asn Ser Ile Asp Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu
    290                 295                 300

Leu Asp Asp Asn Val Val Asp Ala Tyr Tyr Ala Asn Val Gln Ser Ala
305                 310                 315                 320

Gln Tyr Asp Asn Gln Gln Glu Gly Val Val Phe Asp Cys Asp Glu Asp
                325                 330                 335

Leu Pro Ser Phe Ser Phe Gly Val Gly Ser Ser Thr Ile Thr Ile Pro
            340                 345                 350

Gly Asp Leu Leu Asn Leu Thr Pro Leu Glu Glu Gly Ser Ser Thr Cys
        355                 360                 365

Phe Gly Gly Leu Gln Ser Ser Ser Gly Ile Gly Ile Asn Ile Phe Gly
    370                 375                 380

Asp Val Ala Leu Lys Ala Ala Leu Val Val Phe Asp Leu Gly Asn Glu
385                 390                 395                 400

Arg Leu Gly Trp Ala Gln Lys
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<210> 2
<211> 404
<212> PRT

<213> Hypocrea lixii

<400> 2

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Met Gln Thr Phe Gly Ala Phe Leu Val Ser Phe Leu Ala Ala Ser Gly
1               5                  10                  15

Met Ala Ala Ala Leu Pro Thr Glu Gly Gln Lys Thr Ala Ser Ile Glu
            20                  25                  30

Val Ala Tyr Asn Lys Asn Tyr Val Ala His Gly Pro Thr Ala Leu Phe
        35                  40                  45

Lys Ala Lys Arg Lys Tyr Gly Ala Pro Ile Ser Asp Asn Leu Arg Ala
    50                  55                  60

Ala Val Ala Ala Lys His Ser Leu Thr Lys Arg Gln Thr Gly Ser Ala
65                  70                  75                  80

Asn Thr Asn Pro Ser Asp Ser Ala Asp Asp Glu Tyr Ile Thr Ser Val
                85                  90                  95

Ser Ile Gly Thr Pro Ala Gln Val Leu Pro Leu Asp Phe Asp Thr Gly
            100                 105                 110

Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Lys Ser Ser Ala
        115                 120                 125

Ser Gly His Ala Leu Tyr Ser Pro Ser Lys Ser Ser Thr Ala Lys Lys
    130                 135                 140

Leu Ser Gly Ser Thr Trp Ser Ile Glu Tyr Gly Asp Lys Ser Ser Ser
145                 150                 155                 160

Ser Gly Asp Val Tyr Thr Asp Ile Val Thr Ile Gly Gly Phe Ser Val
                165                 170                 175

Lys Thr Gln Ala Val Glu Ser Ala Thr Lys Val Ser Thr Gln Phe Val
            180                 185                 190

Gln Asp Thr Val Ile Ser Gly Leu Val Gly Leu Gly Phe Asp Ile Gly
        195                 200                 205

Asn Gln Val Ser Pro Arg Pro Gln Lys Thr Trp Phe Ser Asn Ala Ala
    210                 215                 220

Ser Ser Leu Ala Glu Pro Leu Phe Thr Ala Asp Leu Arg His Gln Glu
225                 230                 235                 240

Thr Gly Ser Tyr Asn Phe Gly Phe Ile Asp Thr Ser Leu Ala Lys Gly
                245                 250                 255
```

```
Thr Ile Gly Tyr Thr Pro Ala Asp Gly Ser Glu Gly Tyr Trp Gly Phe
            260                 265                 270

Thr Ala Thr Gly Tyr Ser Val Gly Gly Ala Lys Leu Asn Arg Asn Ser
        275                 280                 285

Ile Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu Pro Asp
    290                 295                 300

Asn Ile Val Asp Ala Tyr Tyr Asn Asn Val Glu Ser Ala Gln Tyr Asp
305                 310                 315                 320

Asp Ser Gln Glu Gly Val Val Phe Asp Cys Ser Glu Asp Leu Pro Ser
                325                 330                 335

Phe Ser Phe Gly Val Gly Gly Gln Thr Ile Thr Ile Ser Gly Asp Leu
            340                 345                 350

Leu Asn Leu Thr Pro Ile Glu Glu Gly Ser Ser Thr Cys Phe Gly Gly
        355                 360                 365

Leu Gln Ser Ser Ala Asp Ile Gly Ile Asn Ile Phe Gly Asp Val Ala
    370                 375                 380

Leu Lys Ala Ala Leu Val Val Phe Asp Leu Gly Asn Glu Arg Leu Gly
385                 390                 395                 400

Trp Ala Gln Lys
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<210> 3
<211> 405
<212> PRT
<213> Trichoderma asperellum

<400> 3

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Met Gln Thr Phe Gly Ala Phe Leu Val Ser Phe Leu Ala Ala Ser Gly
1               5                   10                  15

Met Ala Ala Ala Leu Pro Ala Glu Gly Gln Gln Lys Thr Ile Ser Val
            20                  25                  30

Pro Val Ile Tyr Asn Ala Asn His Ala Pro His Gly Pro Ser Ala Leu
        35                  40                  45

Tyr Lys Ala Lys Lys Lys Phe Gly Ala Pro Ile Ser Glu Ser Leu Lys
    50                  55                  60

Asn Asn Val Ala Gln His Lys Ala Ala Lys Leu Ala Arg Arg Gln Thr
65                  70                  75                  80

Gly Ser Ala Pro Asn His Pro Ser Asp Ser Glu Asp Asp Glu Tyr Ile
```

85 90 95

Thr Asn Val Ser Ile Gly Thr Pro Ala Gln Val Leu Pro Leu Asp Phe
100 105 110

Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Ser
115 120 125

Ser Gln Ala Lys Gly His Thr Leu Tyr Asn Pro Thr Lys Ser Ser Thr
130 135 140

Ser Lys Lys Leu Ser Gly Tyr Ser Trp Thr Ile Ser Tyr Gly Asp Gly
145 150 155 160

Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Thr Val Ser Val Gly Gly
165 170 175

Phe Ser Val Thr Gly Gln Ala Val Glu Ser Ala Thr Lys Val Ser Ser
180 185 190

Glu Phe Val Ser Asp Thr Ser Asn Ser Gly Leu Leu Gly Leu Ala Leu
195 200 205

Asp Ser Ile Asn Thr Val Ser Pro Lys Gln Gln Lys Thr Trp Phe Ser
210 215 220

Asn Ala Ser Ser Lys Leu Ala Gln Pro Val Phe Thr Ala Asp Leu Asn
225 230 235 240

His Gln Ala Ser Gly Ser Tyr Asn Phe Gly Tyr Ile Asp Thr Ser Leu
245 250 255

Ala Ser Gly Pro Ile Ser Tyr Val Pro Ile Ser Thr Ala Asn Gly Phe
260 265 270

Trp Glu Phe Thr Ser Ala Ser Tyr Ala Ile Gly Ser Gly Ser Thr Lys
275 280 285

Lys His Ser Thr Asp Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu
290 295 300

Leu Asp Asp Thr Ile Val Asp Ala His Tyr Gly Gln Val Ser Ser Ala
305 310 315 320

Gln Tyr Asp Asn Ser Gln Glu Gly Tyr Thr Phe Asp Cys Asp Glu Asn
325 330 335

Leu Pro Ser Phe Thr Phe Ala Val Gly Ser Ser Lys Ile Thr Val Pro
340 345 350

Gly Ser Leu Ile Asn Phe Ala Pro Val Ser Gly Asn Thr Cys Phe Gly

355 360 365

Gly Leu Gln Ser Asn Asp Gly Ile Gly Ile Asn Ile Phe Gly Asp Val
370 375 380

Ala Ile Lys Ala Ala Leu Val Val Phe Asp Leu Gly Asn Lys Arg Leu
385 390 395 400

Gly Trp Ala Gln Lys
405

<210> 4
<211> 405
<212> PRT
<213> Trichoderma atroviride

<400> 4

Met Gln Thr Phe Gly Ala Phe Leu Val Ser Phe Leu Ala Ala Ser Gly
1 5 10 15

Leu Ala Ala Ala Leu Pro Ala Glu Gly Gln Gln Lys Thr Ile Ser Val
20 25 30

Pro Val Lys Tyr Asn Ala Asn His Ala Pro His Gly Pro Thr Glu Leu
35 40 45

Phe Lys Ala Lys Arg Lys Phe Gly Ala Pro Ile Ser Glu Asn Leu Lys
50 55 60

Asn Arg Val Ala Glu His Lys Ala Ala Lys Leu Ala Arg Arg Gln Thr
65 70 75 80

Gly Ser Ala Pro Asn His Pro Ser Asp Ser Glu Asp Asp Glu Tyr Ile
85 90 95

Thr Asn Val Ser Ile Gly Thr Pro Ala Gln Val Leu Pro Leu Asp Phe
100 105 110

Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Ser
115 120 125

Ser Ser Ala Arg Gly His Thr Ile Tyr Thr Pro Ser Lys Ser Ser Thr
130 135 140

Ser Lys Lys Val Ser Gly Ala Ser Trp Ser Ile Thr Tyr Gly Asp Asn
145 150 155 160

Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Thr Val Thr Ile Gly Gly
165 170 175

Phe Ser Val Thr Gly Gln Ala Val Glu Ser Ala Thr Lys Val Ser Thr
180 185 190

```
Gln Phe Val Gln Asp Thr Ser Asn Ser Gly Leu Val Gly Leu Ala Leu
        195                 200                 205

Asp Ser Gly Asn Thr Val Lys Pro Thr Lys Gln Lys Thr Trp Phe Ser
    210                 215                 220

Asn Ala Ser Ser His Leu Ala Gln Pro Val Phe Thr Ala Asp Leu Asn
225                 230                 235                 240

His Gln Ala Asp Gly Ser Tyr Asn Phe Gly Phe Ile Asp Thr Thr Leu
                245                 250                 255

Ala Ser Gly Pro Ile Thr Tyr Val Pro Ile Ser Thr Gly Asn Gly Phe
            260                 265                 270

Trp Glu Phe Thr Ser Ala Ser Tyr Ala Ile Gly Gly Gly Ser Ser Lys
        275                 280                 285

Lys His Ser Thr Asp Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu
    290                 295                 300

Leu Asp Asp Thr Ile Val Asp Ala Tyr Tyr Asn Gln Val Glu Ser Ala
305                 310                 315                 320

Gln Tyr Asp Asp Ser Gln Glu Gly Tyr Thr Phe Asp Cys Ser Glu Asp
                325                 330                 335

Leu Pro Ser Phe Ser Phe Ala Val Gly Ser Ser Thr Ile Thr Val Pro
            340                 345                 350

Gly Ser Leu Ile Asn Phe Ala Pro Val Asp Gly Asn Thr Cys Phe Gly
        355                 360                 365

Gly Leu Gln Ser Asp Asp Gly Ile Gly Ile Ser Ile Phe Gly Asp Val
    370                 375                 380

Ala Ile Lys Ala Ala Leu Val Val Phe Asp Leu Gly Asn Lys Arg Leu
385                 390                 395                 400

Gly Trp Ala Gln Lys
                405


<210>  5
<211>  404
<212>  PRT
<213>  Trichoderma virens

<400>  5

Met Gln Thr Phe Gly Ala Phe Leu Val Ser Phe Leu Ala Ala Ser Gly
1               5                   10                  15
```

```
Leu Ala Ala Ala Leu Pro Ala Glu Gly Gln Lys Thr Ala Ser Ile Glu
            20                  25                  30

Val Ser Tyr Asn Lys His Tyr Val Pro His Gly Pro Thr Ala Leu Phe
        35                  40                  45

Lys Ala Lys Arg Lys Tyr Asn Ala Pro Ile Ser Glu Lys Leu His Ala
    50                  55                  60

Ala Val Ala Ala Lys Lys Ala Leu Thr Lys Arg Gln Thr Gly Ser Ala
65                  70                  75                  80

Asn Thr Asn Pro Ser Asp Ser Ala Asp Asp Glu Tyr Ile Thr Asn Val
                85                  90                  95

Ser Ile Gly Thr Pro Ala Gln Val Leu Pro Leu Asp Phe Asp Thr Gly
            100                 105                 110

Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Lys Ser Ser Ala
        115                 120                 125

Ser Gly His Val Thr Tyr Ser Pro Ser Lys Ser Ser Thr Ala Lys Lys
    130                 135                 140

Leu Ser Gly Ala Ser Trp Ser Ile Thr Tyr Gly Asp His Ser Ser Ser
145                 150                 155                 160

Ser Gly Asp Val Tyr Thr Asp Lys Val Thr Val Gly Gly Phe Ser Val
                165                 170                 175

Ser Ser Gln Ala Val Glu Ser Ala Thr Lys Val Ser Thr Gln Phe Val
            180                 185                 190

Gln Asp Thr Val Ile Ser Gly Leu Leu Gly Leu Gly Phe Asp Val Gly
        195                 200                 205

Asn Thr Val Lys Pro Arg Ala Gln Lys Thr Trp Phe Ser Asn Ala Ala
    210                 215                 220

Asn Ser Leu Ala Gln Pro Leu Phe Thr Ala Asp Leu Lys His Gln Gln
225                 230                 235                 240

Thr Gly Ser Tyr Asn Phe Gly Phe Ile Asp Thr Thr Leu Ala Lys Gly
                245                 250                 255

Pro Ile Gly Tyr Thr Pro Ala Asp Gly Ser Glu Gly Tyr Trp Gly Phe
            260                 265                 270

Thr Ala Thr Gly Tyr Ser Val Gly Gly Ala Lys Leu Asn Arg Asn Ser
        275                 280                 285
```

```
Ile Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu Asp Asp
    290                 295                 300

Asp Val Val Asn Ala Tyr Tyr Asn Asn Val Glu Ser Ala Gln Tyr Asp
305                 310                 315                 320

Asp Ser Gln Gln Gly Val Val Phe Asp Cys Ser Glu Asp Leu Pro Ser
                325                 330                 335

Phe Ser Phe Gly Val Gly Gly Thr Thr Ile Thr Ile Pro Gly Ser Leu
            340                 345                 350

Ile Asn Leu Thr Pro Val Ser Asp Gly Ser Ser Thr Cys Phe Gly Gly
        355                 360                 365

Leu Gln Ser Ser Ala Asp Ile Gly Ile Asn Ile Phe Gly Asp Val Ala
    370                 375                 380

Leu Lys Ala Ala Leu Val Val Phe Asp Leu Gly Asn Glu Arg Leu Gly
385                 390                 395                 400

Trp Ala Gln Lys
```

<210> 6
<211> 395
<212> PRT
<213> Aspergillus fumigatus

<400> 6

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Met Val Val Phe Ser Lys Val Thr Ala Val Val Val Gly Leu Ser Thr
1               5                   10                  15

Ile Val Ser Ala Val Pro Val Val Gln Pro Arg Lys Gly Phe Thr Ile
            20                  25                  30

Asn Gln Val Ala Arg Pro Val Thr Asn Lys Lys Thr Val Asn Leu Pro
        35                  40                  45

Ala Val Tyr Ala Asn Ala Leu Thr Lys Tyr Gly Gly Thr Val Pro Asp
    50                  55                  60

Ser Val Lys Ala Ala Ala Ser Ser Gly Ser Ala Val Thr Thr Pro Glu
65                  70                  75                  80

Gln Tyr Asp Ser Glu Tyr Leu Thr Pro Val Lys Val Gly Gly Thr Thr
                85                  90                  95

Leu Asn Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val Phe Ser
            100                 105                 110
```

```
Ser Glu Leu Ser Ala Ser Gln Ser Ser Gly His Ala Ile Tyr Lys Pro
        115                 120                 125

Ser Ala Asn Ala Gln Lys Leu Asn Gly Tyr Thr Trp Lys Ile Gln Tyr
    130                 135                 140

Gly Asp Gly Ser Ser Ala Ser Gly Asp Val Tyr Lys Asp Thr Val Thr
145                 150                 155                 160

Val Gly Gly Val Thr Ala Gln Ser Gln Ala Val Glu Ala Ala Ser His
                165                 170                 175

Ile Ser Ser Gln Phe Val Gln Asp Lys Asp Asn Asp Gly Leu Leu Gly
            180                 185                 190

Leu Ala Phe Ser Ser Ile Asn Thr Val Ser Pro Arg Pro Gln Thr Thr
        195                 200                 205

Phe Phe Asp Thr Val Lys Ser Gln Leu Asp Ser Pro Leu Phe Ala Val
    210                 215                 220

Thr Leu Lys Tyr His Ala Pro Gly Thr Tyr Asp Phe Gly Tyr Ile Asp
225                 230                 235                 240

Asn Ser Lys Phe Gln Gly Glu Leu Thr Tyr Thr Asp Val Asp Ser Ser
                245                 250                 255

Gln Gly Phe Trp Met Phe Thr Ala Asp Gly Tyr Gly Val Gly Asn Gly
            260                 265                 270

Ala Pro Asn Ser Asn Ser Ile Ser Gly Ile Ala Asp Thr Gly Thr Thr
        275                 280                 285

Leu Leu Leu Leu Asp Asp Ser Val Val Ala Asp Tyr Tyr Arg Gln Val
    290                 295                 300

Ser Gly Ala Lys Asn Ser Asn Gln Tyr Gly Gly Tyr Val Phe Pro Cys
305                 310                 315                 320

Ser Thr Lys Leu Pro Ser Phe Thr Thr Val Ile Gly Gly Tyr Asn Ala
                325                 330                 335

Val Val Pro Gly Glu Tyr Ile Asn Tyr Ala Pro Val Thr Asp Gly Ser
            340                 345                 350

Ser Thr Cys Tyr Gly Gly Ile Gln Ser Asn Ser Gly Leu Gly Phe Ser
        355                 360                 365

Ile Phe Gly Asp Ile Phe Leu Lys Ser Gln Tyr Val Val Phe Asp Ser
    370                 375                 380
```

```
Gln Gly Pro Arg Leu Gly Phe Ala Pro Gln Ala
385                 390                 395


<210>  7
<211>  404
<212>  PRT
<213>  Aspergillus oryzae

<400>  7

Met Val Ile Leu Ser Lys Val Ala Ala Val Ala Val Gly Leu Ser Thr
1               5                   10                  15


Val Ala Ser Ala Leu Pro Thr Gly Pro Ser His Ser Pro His Ala Arg
            20                  25                  30


Arg Gly Phe Thr Ile Asn Gln Ile Thr Arg Gln Thr Ala Arg Val Gly
        35                  40                  45


Pro Lys Thr Ala Ser Phe Pro Ala Ile Tyr Ser Arg Ala Leu Ala Lys
    50                  55                  60


Tyr Gly Gly Thr Val Pro Ala His Leu Lys Ser Ala Val Ala Ser Gly
65                  70                  75                  80


His Gly Thr Val Val Thr Ser Pro Glu Pro Asn Asp Ile Glu Tyr Leu
                85                  90                  95


Thr Pro Val Asn Ile Gly Gly Thr Thr Leu Asn Leu Asp Phe Asp Thr
            100                 105                 110


Gly Ser Ala Asp Leu Trp Val Phe Ser Glu Glu Leu Pro Lys Ser Glu
        115                 120                 125


Gln Thr Gly His Asp Val Tyr Lys Pro Ser Gly Asn Ala Ser Lys Ile
    130                 135                 140


Ala Gly Ala Ser Trp Asp Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser
145                 150                 155                 160


Gly Asp Val Tyr Gln Asp Thr Val Thr Val Gly Gly Val Thr Ala Gln
                165                 170                 175


Gly Gln Ala Val Glu Ala Ala Ser Lys Ile Ser Asp Gln Phe Val Gln
            180                 185                 190


Asp Lys Asn Asn Asp Gly Leu Leu Gly Leu Ala Phe Ser Ser Ile Asn
        195                 200                 205


Thr Val Lys Pro Lys Pro Gln Thr Thr Phe Phe Asp Thr Val Lys Asp
    210                 215                 220


Gln Leu Asp Ala Pro Leu Phe Ala Val Thr Leu Lys Tyr His Ala Pro
```

225 230 235 240

Gly Ser Tyr Asp Phe Gly Phe Ile Asp Lys Ser Lys Phe Thr Gly Glu
245 250 255

Leu Ala Tyr Ala Asp Val Asp Asp Ser Gln Gly Phe Trp Gln Phe Thr
260 265 270

Ala Asp Gly Tyr Ser Val Gly Lys Gly Asp Ala Gln Lys Ala Pro Ile
275 280 285

Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Val Met Leu Asp Asp Glu
290 295 300

Ile Val Asp Ala Tyr Tyr Lys Gln Val Gln Gly Ala Lys Asn Asp Ala
305 310 315 320

Ser Ala Gly Gly Tyr Val Phe Pro Cys Glu Thr Glu Leu Pro Glu Phe
325 330 335

Thr Val Val Ile Gly Ser Tyr Asn Ala Val Ile Pro Gly Lys His Ile
340 345 350

Asn Tyr Ala Pro Leu Gln Glu Gly Ser Ser Thr Cys Val Gly Gly Ile
355 360 365

Gln Ser Asn Ser Gly Leu Gly Leu Ser Ile Leu Gly Asp Val Phe Leu
370 375 380

Lys Ser Gln Tyr Val Val Phe Asp Ser Gln Gly Pro Arg Leu Gly Phe
385 390 395 400

Ala Ala Gln Ala

<210> 8
<211> 407
<212> PRT
<213> Metarhizium anisopliae

<400> 8

Met Gln Thr Phe Gly Ser Phe Leu Val Ser Leu Val Val Ala Ser Ser
1 5 10 15

Leu Ala Thr Ala Leu Pro Thr Thr Pro Ser Ser Thr Pro Ala Gly Asn
20 25 30

Val Ser Val Thr Ala Lys His Asn Ala Asn Phe Thr Arg Asn Gly Pro
35 40 45

Ala Ala Leu Ala Lys Ala Tyr Arg Lys Phe Gly Lys Pro Val Pro Val
50 55 60

```
Asp Val Ala Asn Ala Leu Ser Arg Gln Asn Ser Lys Arg Thr Thr Gly
65                  70                  75                  80

Ser Asp Pro Asn Ser Pro Gln Gln Tyr Asp Ile Glu Tyr Leu Ala Pro
                85                  90                  95

Val Gln Ile Gly Thr Pro Ala Gln Thr Leu Asn Leu Asp Phe Asp Thr
            100                 105                 110

Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Leu Thr Pro Ser Ser Gln
        115                 120                 125

Val Asn Gly Gln Thr Leu Tyr Asn Pro Ser Lys Ser Ser Thr Ala Gln
    130                 135                 140

Ser Leu Ser Gly Ser Thr Trp Ser Ile Thr Tyr Gly Asp Gly Ser Ser
145                 150                 155                 160

Ser Ser Gly Val Val Tyr Thr Asp Ala Val Thr Val Gly Gly Leu Thr
                165                 170                 175

Val Asn Ala Gln Ala Val Glu Ala Ala Lys Gln Val Ser Ser Gln Phe
            180                 185                 190

Ser Gln Asp Ala Ala Ser Ser Gly Leu Leu Gly Leu Ala Phe Ser Ser
        195                 200                 205

Ile Asn Thr Val Lys Pro Thr Lys Gln Lys Thr Phe Phe Asp Asn Ala
    210                 215                 220

Lys Pro Ala Leu Asp Ser Ala Leu Phe Thr Ala Asp Leu Lys His Gly
225                 230                 235                 240

Ala Asp Gly Lys Tyr Asn Phe Gly Tyr Ile Asp Ser Thr Ala Tyr Thr
                245                 250                 255

Gly Ser Ile Ala Tyr Thr Pro Val Asp Ser Ser Gln Gly Phe Trp Gly
            260                 265                 270

Phe Thr Ser Arg Gly Tyr Ala Val Gly Gly Gly Ser Leu Asn Thr Ala
        275                 280                 285

Ser Thr Ser Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu Pro
    290                 295                 300

Ser Ser Ile Val Ser Ala Tyr Tyr Ala Lys Val Ser Gly Ala Arg Tyr
305                 310                 315                 320

Asp Ser Ser Gln Gly Gly Tyr Thr Phe Ala Cys Ser Gln Ser Leu Pro
                325                 330                 335
```

```
Ser Phe Ser Phe Gly Val Ser Gly Ala Thr Val Thr Val Pro Gly Ala
            340                 345                 350

Tyr Leu Asn Tyr Ala Pro Thr Asp Ser Thr Gly Arg Thr Cys Phe Gly
        355                 360                 365

Gly Leu Gln Ser Ser Ser Gly Ile Gly Ile Asn Ile Phe Gly Asp Val
    370                 375                 380

Ala Leu Lys Ser Ala Phe Val Val Phe Asp Gly Gly Asn Asn Arg Leu
385                 390                 395                 400

Gly Trp Ala Ala Lys Ala Leu
                405
```

<210> 9
<211> 406
<212> PRT
<213> Gibberella zeae

<400> 9

```
Met Pro Ser Leu Asn Ala Leu Leu Ser Ala Ser Leu Ala Phe Ala Ser
1               5                   10                  15

Ile Ala Leu Gly Ala Pro Ala Val Gln Asp Lys His Phe Ser Val Glu
            20                  25                  30

Gln Val Lys Asn Pro Gln Phe Val Lys Asn Gly Pro Leu Ala Leu Ala
        35                  40                  45

His Val Tyr Ala Lys Tyr Gly Val Pro Leu Pro Lys Gly Leu Glu Lys
    50                  55                  60

Ala Val Gln Lys Val Lys Ser Ser His Thr Lys Arg Gln Asn Gly Ser
65                  70                  75                  80

Gly Ser Val Ile Thr Thr Pro Gln Asp Glu Asp Ile Glu Trp Leu Thr
                85                  90                  95

Pro Val Gln Ile Gly Thr Pro Ala Gln Thr Leu Asn Leu Asp Phe Asp
            100                 105                 110

Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Thr Ser Gly Ser
        115                 120                 125

Ser Gly His Asp Glu Tyr Asn Pro Ala Lys Ser Ser Thr Ser Lys Lys
    130                 135                 140

Leu Ser Gly Ala Thr Trp Ser Ile Ser Tyr Gly Asp Gly Ser Thr Ser
145                 150                 155                 160
```

```
Ser Gly Asp Val Tyr Lys Asp Lys Val Ser Val Gly Gly Leu Val Val
                165                 170                 175

Ser Ser Gln Ala Val Glu Ser Ala Gln Arg Val Ser Asp Gln Phe Glu
            180                 185                 190

Gln Glu Thr Gly Leu Asp Gly Leu Leu Gly Leu Gly Phe Ser Ser Ile
        195                 200                 205

Asn Thr Val Thr Pro Thr Gln Gln Asn Thr Phe Phe Asp Asn Ala Ala
    210                 215                 220

Pro Ser Leu Gln Ser Ala Val Phe Thr Ala Asn Leu Lys His Gln Lys
225                 230                 235                 240

Pro Gly Thr Tyr Asn Phe Gly Phe Ile Asp Ser Ser Ser Tyr Thr Gly
                245                 250                 255

Lys Ile Gly Tyr Ala Pro Val Asp Ser Ser Gln Gly Phe Trp Glu Phe
            260                 265                 270

Thr Ala Ser Gly Tyr Ala Val Gly Ser Ala Thr Val Asn Arg Ser Pro
        275                 280                 285

Ile Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu Pro Ser
    290                 295                 300

Ala Ile Asn Ser Ala Tyr Tyr Ala Lys Val Ser Gly Ala Arg Tyr Ser
305                 310                 315                 320

Ser Ser Tyr Gly Gly Tyr Val Phe Ser Cys Ser Ala Thr Leu Pro Asn
                325                 330                 335

Phe Ser Phe Ala Val Gly Gly Val Thr Ile Thr Ile Pro Gly Ser Tyr
            340                 345                 350

Ile Asn Tyr Ala Pro Val Gln Asp Gly Ser Ser Thr Cys Leu Gly Gly
        355                 360                 365

Ile Gln Pro Ser Glu Asp Ile Gly Ile Asn Ile Phe Gly Asp Ile Ala
    370                 375                 380

Leu Lys Ala Ala Phe Val Val Phe Asp Gly Gly Asn Gln Gln Val Gly
385                 390                 395                 400

Trp Ala Lys Lys Thr Leu
                405
```

<210> 10
<211> 407
<212> PRT

<213> Fusarium venenatum

<400> 10

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Met Pro Ser Leu Asn Ala Leu Leu Ala Ala Ser Leu Ala Phe Ala Ser
1               5                  10                  15

Ile Ala Leu Gly Ala Pro Ala Val Gln Asp Lys His Phe Ser Val Glu
            20                  25                  30

Gln Val Lys Asn Pro Lys Phe Ile Lys Ser Gly Pro Leu Ala Leu Ala
        35                  40                  45

His Val Tyr Ser Lys Tyr Gly Val Pro Leu Pro Lys Gly Leu Glu Lys
    50                  55                  60

Ala Val Lys Ala Val Lys Ser Ser Ser His Ser Lys Arg Gln Asn Gly
65                  70                  75                  80

Ser Gly Ser Val Ile Thr Thr Pro Ala Asp Glu Asp Ile Glu Trp Leu
                85                  90                  95

Thr Pro Val Gln Ile Gly Thr Pro Ala Gln Thr Leu Asn Leu Asp Phe
            100                 105                 110

Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Thr Ser Gly
        115                 120                 125

Ser Ser Gly His Asp Glu Tyr Asn Pro Ala Lys Ser Ser Thr Ser Lys
    130                 135                 140

Lys Leu Ala Gly Ala Thr Trp Ser Ile Ser Tyr Gly Asp Gly Ser Thr
145                 150                 155                 160

Ser Ser Gly Asp Val Tyr Lys Asp Lys Val Ser Val Gly Gly Leu Ala
                165                 170                 175

Val Ala Ser Gln Ala Val Glu Ser Ala Gln Arg Val Ser Asp Glu Phe
            180                 185                 190

Glu Gln Glu Thr Gly Leu Asp Gly Leu Leu Gly Leu Gly Phe Ser Ser
        195                 200                 205

Ile Asn Thr Val Lys Pro Thr Lys Gln Lys Thr Phe Phe Asp Asn Ala
    210                 215                 220

Ile Ser Thr Leu Gln Ser Pro Val Phe Ser Ala Asp Leu Lys His Gln
225                 230                 235                 240

Gln Pro Gly Thr Tyr Asn Phe Gly Tyr Ile Asp Ser Ser Ala Tyr Thr
                245                 250                 255
```

```
Gly Lys Ile Gly Tyr Ala Pro Ile Asp Ser Ser Gly Gly Trp Trp Glu
            260                 265                 270

Phe Thr Ser Ser Gly Tyr Ala Val Gly Ser Ala Ala Leu Asn Lys Ser
        275                 280                 285

Pro Ile Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu Pro
    290                 295                 300

Asp Ala Val Asn Ser Ala Tyr Tyr Ala Lys Val Ser Gly Ala Arg Tyr
305                 310                 315                 320

Ser Ser Ser Tyr Gly Gly Tyr Val Phe Ser Cys Ser Ala Thr Leu Pro
                325                 330                 335

Asn Phe Ser Phe Ala Val Gly Gly Val Thr Ile Thr Ile Pro Gly Ser
            340                 345                 350

Tyr Ile Asn Tyr Ala Pro Val Gln Gln Gly Ser Ser Thr Cys Leu Gly
        355                 360                 365

Gly Ile Gln Pro Ser Asp Asp Ile Gly Ile Asn Ile Phe Gly Asp Ile
    370                 375                 380

Ala Leu Lys Ala Ala Phe Val Val Phe Asp Gly Gly Asn Gln Gln Val
385                 390                 395                 400

Gly Trp Ala Lys Lys Thr Leu
                405
```

<210> 11
<211> 414
<212> PRT
<213> Fusarium oxysporum

<400> 11

```
Met Pro Ser Ile Asn Ala Leu Leu Thr Ala Ser Leu Ala Phe Ala Ser
1               5                   10                  15

Ile Ala Leu Gly Ala Pro Ala Ala Gln Asp Lys Lys Phe Thr Val Glu
            20                  25                  30

Gln Val Lys Asn Pro Lys Phe Ile Lys Asn Gly Pro Leu Ala Leu Ala
        35                  40                  45

His Val Tyr Ala Lys Tyr Gly Val Pro Leu Pro Lys Gly Leu Glu Lys
    50                  55                  60

Ala Val Lys Ala Val Arg Pro Pro His Ala His Ser Lys Arg Gln Ser
65                  70                  75                  80

Gly Ser Gly Ser Ala Thr Thr Thr Pro Ser Asp Glu Asp Val Glu Trp
```

85 90 95

Leu Thr Pro Val Gln Ile Gly Thr Pro Ala Gln Thr Phe Asn Leu Asp
100 105 110

Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Thr Thr
115 120 125

Gly Ser Ser Gly His Asp Glu Tyr Asn Pro Ala Lys Ser Ser Thr Ala
130 135 140

Lys Lys Leu Ser Gly Ala Thr Trp Lys Ile Ser Tyr Gly Asp Gly Ser
145 150 155 160

Ser Ser Ser Gly Asp Val Tyr Lys Asp Lys Val Ser Val Gly Gly Leu
165 170 175

Val Val Ser Ser Gln Ala Val Glu Ala Ala Gln Lys Val Ser Ser Glu
180 185 190

Phe Glu Gln Glu Thr Gly Leu Asp Gly Leu Leu Gly Leu Gly Phe Ser
195 200 205

Ser Ile Asn Thr Val Thr Pro Thr Gln Gln Lys Thr Phe Phe Asp Asn
210 215 220

Ala Ala Ser Thr Leu Gly Ser Pro Val Phe Thr Ala Asp Leu Lys His
225 230 235 240

Gln Lys Pro Gly Lys Tyr Asn Phe Gly Phe Ile Asp Ser Thr Ala Tyr
245 250 255

Thr Gly Lys Ile Gly Tyr Ala Ser Val Asp Ser Ser Glu Gly Phe Trp
260 265 270

Glu Phe Thr Ser Thr Gly Tyr Gly Ile Gly Ser Ala Ala Val Asn Lys
275 280 285

Ser Pro Ile Thr Gly Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Leu
290 295 300

Pro Asp Asp Val Asn Ser Ala Tyr Tyr Ala Lys Val Ser Gly Ala Arg
305 310 315 320

Tyr Ser Ser Ser Tyr Gly Gly Tyr Val Phe Ser Cys Ser Ala Thr Leu
325 330 335

Pro Ser Phe Ser Phe Val Val Gly Gly Val Thr Ile Thr Ile Pro Gly
340 345 350

Ser Tyr Ile Asn Tyr Ala Pro Val Gln Asp Gly Ser Thr Thr Cys Leu

355 360 365

Gly Gly Ile Gln Pro Ser Asp Asp Ile Gly Ile Asn Ile Phe Gly Asp
370 375 380

Ile Ala Leu Lys Ala Ala Phe Val Val Phe Asp Gly Gly Asn Gln Gln
385 390 395 400

Val Gly Trp Ala Lys Lys Thr Leu Leu Ser Leu Val Asp Ser
405 410

<210> 12
<211> 410
<212> PRT
<213> Grosmannia clavigera

<400> 12

Met Pro Ser Thr Thr Phe Leu Thr Val Ala Leu Ala Ala Val Ser Ala
1 5 10 15

Val Ser Ala Met Pro Ala Arg Ile Gly Val Pro Val Ser Thr Ser Asn
20 25 30

Phe Ser Ile His Gln Val Arg Asn Glu Gln Phe Thr Gly His His Gly
35 40 45

Pro Leu Ala Leu Ala Lys Ala Tyr Arg Lys Tyr Gly Val Ala Leu Pro
50 55 60

Thr Asp Leu Glu Ala Ala Val Ala Lys Ile Gln Ala Asp Gln Ala Val
65 70 75 80

Ser Arg Arg Asp Thr Gly Ser Ala Thr Asn Thr Pro Thr Ser Asp Asp
85 90 95

Ser Glu Tyr Leu Thr Pro Val Gln Ile Gly Thr Pro Ala Gln Thr Leu
100 105 110

His Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr
115 120 125

Glu Thr Pro Ser Gly Ser Val Asp Gly Gln Thr Leu Tyr Lys Pro Ala
130 135 140

Ser Ser Ser Ser Ser Glu Lys Leu Thr Gly Ala Thr Trp Lys Ile Lys
145 150 155 160

Tyr Gly Asp Asp Ser Thr Ser Ser Gly Asp Val Tyr Thr Asp Val Val
165 170 175

Ser Val Gly Gly Leu Ser Val Gln Ser Gln Ala Val Glu Ser Ala Lys
180 185 190

```
Thr Val Ser Ser Ser Phe Thr Ser Asp Thr Ala Ser Ser Gly Leu Leu
        195                 200                 205

Gly Leu Ala Phe Ser Ser Ile Asn Ala Val Leu Pro Asp Gln Gln Asn
    210                 215                 220

Thr Phe Phe Asp Asn Ala Gln Asp Ser Leu Asp Ser Ala Leu Phe Thr
225                 230                 235                 240

Val Asp Leu Lys His Gly Lys Ala Gly Lys Tyr Asn Phe Gly Tyr Ile
                245                 250                 255

Asp Ser Ala Ala His Thr Gly Ser Ile Thr Tyr Thr Asp Val Asp Asn
            260                 265                 270

Ala Lys Gly Phe Trp Gly Phe Thr Ala Asp Gly Tyr Lys Ile Gly Asn
        275                 280                 285

Ala Ala Lys Lys Gly Thr Ser Ile Ser Gly Ile Ala Asp Thr Gly Thr
    290                 295                 300

Thr Leu Leu Leu Leu Pro Asp Ala Val Val Asp Ala Tyr Tyr Ala Gly
305                 310                 315                 320

Val Ser Gly Ala Ser Tyr Asp Ser Ser Gln Gly Gly Tyr Thr Phe Pro
                325                 330                 335

Ser Ser Ala Thr Leu Pro Ala Phe Thr Tyr Tyr Val Glu Gly Val Ala
            340                 345                 350

Phe Thr Val Pro Ala Ser Tyr Ile Lys Tyr Ala Ala Ile Asp Ser Ser
        355                 360                 365

Thr Tyr Phe Gly Gly Ile Gln Ser Asp Ser Ser Ile Gly Phe Ser Ile
    370                 375                 380

Phe Gly Asp Val Ala Leu Lys Ala Ala Phe Val Ile Phe Asp Ala Thr
385                 390                 395                 400

Pro Lys Leu Gly Phe Ala Pro Lys Thr Leu
                405                 410


<210>  13
<211>  411
<212>  PRT
<213>  Verticillium albo-atrum

<400>  13

Met Gln Thr Phe Gly Thr Phe Phe Val Ala Ile Leu Ala Ala Thr Gly
1               5                   10                  15
```

```
Tyr Ala Ala Val Val Pro Thr Lys Ile Gly Ile Pro Asp Gln Gly Thr
            20                  25                  30

Phe Ser Val Arg Ala Val Pro Asn Pro Gly Phe Gln His Arg Asn Gly
        35                  40                  45

Ala Ile Ala Leu Ala Lys Ala Tyr Asn Lys Phe Gly Lys Ala Ala Pro
    50                  55                  60

Ala Asp Val Ala Ala Ala Ala Ala Asn Ala Thr Glu Ser Arg Leu Ser
65                  70                  75                  80

Lys Arg Thr Thr Gly Ser Ala Thr Thr Ser Pro Glu Ala Asn Asp Val
                85                  90                  95

Glu Tyr Leu Thr Pro Val Gln Ile Gly Thr Pro Ala Gln Asn Leu Val
            100                 105                 110

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
        115                 120                 125

Leu Pro Ser Ser Gln Val Asn Gly Gln Thr Arg Tyr Asn Pro Ala Ser
    130                 135                 140

Ser Ser Thr Ser Ser Lys Val Ala Gly Ala Lys Trp Ser Ile Ser Tyr
145                 150                 155                 160

Gly Asp Gly Ser Ser Ser Asn Gly Asp Val Tyr Leu Asp Lys Val Thr
                165                 170                 175

Ile Gly Gly Leu Thr Val Lys Lys Gln Ala Val Glu Ala Ala Gln Lys
            180                 185                 190

Val Ser Ser Ser Phe Thr Ser Asp Pro Leu Asp Gly Leu Leu Gly Leu
        195                 200                 205

Ala Phe Ser Ser Ile Asn Thr Val Ser Pro Ser Arg Gln Leu Thr Phe
    210                 215                 220

Phe Asp Asn Ala Lys Ser Thr Leu Asp Ala Pro Leu Phe Thr Ala Asp
225                 230                 235                 240

Leu Lys His Ala Ala Asp Pro Ala Gly Lys Tyr Asn Phe Gly Tyr Ile
                245                 250                 255

Asp Lys Thr Ala Tyr Lys Gly Ala Ile Thr Tyr Thr Asn Val Asp Asn
            260                 265                 270

Ser Asp Gly Phe Trp Ser Phe Thr Ser Thr Gly Tyr Gln Val Gly Thr
        275                 280                 285
```

```
Ala Ala Phe Lys Ser Ser Pro Val Thr Gly Ile Ala Asp Thr Gly Thr
    290                 295                 300

Thr Leu Leu Leu Leu Pro Thr Ser Val Val Ser Ala Tyr Tyr Ala Gln
305                 310                 315                 320

Val Ser Gly Ala Arg Tyr Asp Ser Ser Gln Gly Gly Tyr Val Phe Ser
                325                 330                 335

Cys Ser Ala Thr Leu Pro Ala Phe Thr Phe Gly Val Glu Ser Ala Arg
            340                 345                 350

Ile Lys Ile Pro Gly Ser Tyr Ile Asn Phe Ala Pro Val Asp Asp Ser
        355                 360                 365

Gly Ser Val Cys Phe Gly Gly Ile Gln Arg Asn Thr Asn Ile Gly Phe
    370                 375                 380

Ser Ile Phe Gly Asp Val Ala Leu Lys Ala Ala Phe Val Val Phe Asn
385                 390                 395                 400

Gly Gly Asp Leu Thr Leu Gly Trp Ala Ser Lys
                405                 410
```

<210> 14
<211> 421
<212> PRT
<213> Chaetomium globosum

<400> 14

```
Met Arg Phe Phe Ser Ala Leu Leu Ala Val Thr Ser Val Ala Ser Val
1               5                   10                  15

Phe Ala Arg Ala Leu Pro Pro Phe Ser Pro Ser Thr Gly Ala Asp Arg
            20                  25                  30

Arg Gly Ala Phe Ser Val Lys Gln Val Arg Asn Leu Asn Phe Val Arg
        35                  40                  45

Ser Gly Pro Val Gln Leu Ala Lys Ile Tyr His Lys Tyr His Ala Pro
    50                  55                  60

Leu Pro Asp Asp Leu Lys Ala Ala Val Ser Arg Ile Arg Ser Asn Thr
65                  70                  75                  80

Leu Lys Arg Ser Asn Gly Thr Val Glu Thr Asn Pro Glu Ala Asn Asp
                85                  90                  95

Val Glu Tyr Leu Thr Pro Val Ser Ile Gly Thr Pro Glu Gln Val Leu
            100                 105                 110
```

```
Asn Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser
        115                 120                 125

Gln Thr Lys Asn Ser Glu Val Asp Gly Gln Thr Val Tyr Asn Pro Thr
    130                 135                 140

Lys Ser Ser Thr Ala Lys Glu Leu Lys Gly Tyr Thr Trp Gln Ile Ser
145                 150                 155                 160

Tyr Gly Asp Gly Ser Tyr Ser Gly Gly Asn Val Tyr Thr Asp Thr Val
                165                 170                 175

Thr Val Gly Gly Leu Ala Val Pro Ser Gln Ala Val Glu Val Ala Thr
            180                 185                 190

Gln Val Ser Asp Glu Phe Thr Ser Asp Pro Asn Asn Asp Gly Leu Leu
        195                 200                 205

Gly Leu Gly Phe Ser Ser Ile Asn Thr Val Glu Pro Lys Ser Gln Lys
    210                 215                 220

Thr Phe Phe Asp Asn Ala Met Pro Asn Leu Asp Ser Pro Leu Phe Thr
225                 230                 235                 240

Ala Asp Leu Lys Ala Ser Val Pro Gly His Phe Thr Phe Gly Tyr Ile
                245                 250                 255

Asn Pro Asp Ala Tyr Ile Gly Asn Ile Thr Tyr Thr Pro Val Asp Ser
            260                 265                 270

Ser Gly Gly Phe Trp Ala Trp Lys Ser Ser Gly Tyr Ala Val Gly Ser
        275                 280                 285

Gly Ser Phe Lys Thr Thr Thr Phe Gln Gly Ile Ala Asp Thr Gly Thr
    290                 295                 300

Ser Leu Leu Leu Leu Pro Ser Ser Val Val Ser Ala Tyr Tyr Arg Gln
305                 310                 315                 320

Val Arg Asn Ala Thr Tyr Asp Ser Thr Gln Gly Gly Tyr Thr Leu Pro
                325                 330                 335

Cys Ser Gly Pro Val Pro Asp Phe Ala Phe Gly Val Gly Asp Lys Asp
            340                 345                 350

Thr Met Ile Thr Val Pro Gly Asp Tyr Ile Thr Tyr Ala Pro Thr Ser
        355                 360                 365

Ser Ser Gly Glu Thr Cys Phe Gly Gly Ile Gln Pro Asp Thr Gly Ile
    370                 375                 380
```

```
Gly Ile Ser Ile Tyr Gly Asp Val Ala Leu Lys Ala Ala Phe Val Val
385                 390                 395                 400


Phe Asp Gly Gly Asn Met Gln Leu Gly Trp Ala Ser Lys Thr Leu Pro
                405                 410                 415


Leu Ser Thr Gly Pro
            420


<210>  15
<211>  439
<212>  PRT
<213>  Neurospora crassa

<400>  15

Met Val Ala Leu Thr Asn Leu Leu Leu Thr Thr Leu Leu Ala Ser Ala
1               5                   10                  15


Gly Leu Gly Ala Ala Leu Pro Pro Arg Ile Gly Ser Thr Val Ile Glu
            20                  25                  30


Ala Arg Glu Pro Glu Leu Pro Val Ser Gly Arg Lys Ile Thr Leu Pro
        35                  40                  45


Gln Gln Lys Asn Pro Arg Phe His Lys Phe Asn Gly Ala Leu Ser Val
    50                  55                  60


Tyr Lys Thr Tyr Leu Lys Tyr Gly Ala Pro Val Pro Asp His Leu Val
65                  70                  75                  80


Gln Ala Val Ala Asn His Leu Gly Ile Ser Val Glu Glu Val His Asn
                85                  90                  95


Tyr Ala Asn Thr Thr Ala Asn Ala Arg Arg Asp Gln Gly Ser Ala Thr
            100                 105                 110


Ala Ala Pro Ile Asp Gln Ser Asp Ser Ala Tyr Ile Thr Pro Val Ser
        115                 120                 125


Ile Gly Thr Pro Ala Gln Thr Leu Asn Leu Asp Phe Asp Thr Gly Ser
    130                 135                 140


Ser Asp Leu Trp Val Phe Ser Asn Ser Leu Pro Ser Ser Gln Arg Ala
145                 150                 155                 160


Gly His Thr Ile Tyr Asn Pro Ser Lys Ser Ser Thr Ala Lys Arg Val
                165                 170                 175


Asn Gly Ala Ser Trp Asp Ile Ser Tyr Gly Asp Gly Ser Ser Ser Lys
            180                 185                 190


Gly Gln Val Tyr Leu Asp Lys Val Thr Ile Gly Gly Leu Val Val Ser
```

195 200 205

Asn Gln Ala Val Glu Thr Ala Gln Gln Val Ser Gln Ser Phe Thr Ala
210 215 220

Glu Thr Ser Ile Asp Gly Leu Val Gly Leu Ala Phe Gly Ser Leu Asn
225 230 235 240

Thr Val Arg Pro Arg Gln Gln Lys Thr Trp Phe Glu Asn Ala Ile Gly
245 250 255

Gln Leu Asp Gln Pro Leu Phe Ala Ala Asp Leu Lys Tyr Glu Ala Ser
260 265 270

Gly Thr Tyr Asp Phe Gly Phe Ile Asp Pro Ala Lys His Thr Gly Asp
275 280 285

Ile Thr Tyr Val Pro Val Asn Thr Asn Pro Gly Tyr Trp Thr Trp Thr
290 295 300

Ser Thr Gly Tyr Gln Val Gly Ser Ser Pro Phe Val Ser Gln Ser Ile
305 310 315 320

Thr Asn Ile Ala Asp Thr Gly Thr Thr Leu Met Tyr Val Pro Asp Ser
325 330 335

Ile Leu Arg Ala Tyr Tyr Gly Gln Ile Arg Gly Ala Thr Asn Ser Gln
340 345 350

Ser Tyr Gly Gly Tyr Val Phe Pro Cys Ser Thr Glu Ala Pro Asp Phe
355 360 365

Thr Phe Gly Val Thr Asp Glu Ala Thr Ile Thr Ile Pro Gly Arg Phe
370 375 380

Ile Asn Tyr Gly Pro Val Thr Asp Asp Gly Glu Thr Cys Phe Gly Gly
385 390 395 400

Leu Gln Thr Ser Ser Asp Val Gly Ile Asn Ile Phe Gly Asp Val Ala
405 410 415

Leu Lys Ala Ala Tyr Val Val Phe Lys Gly Gly Asp Ser Pro Ser Leu
420 425 430

Gly Trp Ala Ser Lys Gln Leu
435

<210> 16
<211> 430
<212> PRT
<213> Neurospora tetrasperma

<400> 16

```
Met Leu Leu Phe Pro Thr Ile Leu Thr Ala Ala Leu Ala Ala Thr Gly
1               5                  10                  15

Met Ala Ala Ala Ile Pro Ser Arg Asp Asp Thr Thr Ala Asn Lys Gly
            20                  25                  30

Thr Ala Ser Leu Leu Gln Val Arg Asn Pro Ser Phe Glu Phe Arg His
        35                  40                  45

Gly Pro Leu Ala Leu Ala Lys Ala Tyr Gln Lys Phe Gly Ala Pro Met
    50                  55                  60

Pro Glu Asp Leu Arg Ala Ala Ile Ala Arg Phe Arg Gln Asn Gln Lys
65                  70                  75                  80

Arg Thr Thr Gly Thr Ile Ala Thr Asp Pro Glu Lys His Asp Val Glu
                85                  90                  95

Tyr Leu Thr Pro Ile Ser Val Gly Thr Pro Ser Gln Asp Leu Met Val
            100                 105                 110

Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Met
        115                 120                 125

Ser Thr Ser Asp Ile Lys Gly Gln Thr Val Tyr Asp Pro Asn Asn Ser
    130                 135                 140

Ser Thr Ser Glu Lys Val Gln Gly Ser Thr Trp Lys Ile Thr Tyr Gly
145                 150                 155                 160

Asp Gly Ser Ser Ser Ser Asp Asp Val Tyr Leu Asp Thr Val Thr Ile
                165                 170                 175

Gly Asn Leu Thr Val Pro Asn Gln Ala Val Glu Ala Ala Lys Lys Val
            180                 185                 190

Ser Ser Glu Phe Thr Asp Asp Ser His Asn Asp Gly Leu Leu Gly Leu
        195                 200                 205

Gly Phe Ser Ala Ile Asn Ala Val Glu Pro Thr Pro Gln Asn Thr Phe
    210                 215                 220

Phe Asp Asn Ile Lys Gly Ser Leu Asp Ala Pro Leu Phe Thr Val Asp
225                 230                 235                 240

Leu Lys His Gly Thr Pro Gly Ser Phe Asn Phe Gly Tyr Ile Asp Pro
                245                 250                 255

Thr Ala Tyr Ile Gly Asn Ile Ser Trp Thr Pro Val Asp Ser Ser Gln
            260                 265                 270
```

```
Gly Tyr Trp Gly Phe Thr Ser Pro Gly Tyr Ala Val Gly Thr Gly Ala
        275                 280                 285

Phe Arg Asn His Ser Met Ser Gly Ile Ala Asp Thr Gly Thr Thr Leu
    290                 295                 300

Leu Leu Leu Pro Lys Ser Val Val Ser Ala Tyr Tyr Lys Glu Ile Gln
305                 310                 315                 320

Gly Ala Gln Tyr Asp Ser Asp Gln Gly Gly Tyr Ile Phe Pro Cys Ser
                325                 330                 335

Pro Thr Pro Pro Asp Phe Val Phe Gly Val Asn Asn Gly Ile Val Thr
            340                 345                 350

Val Pro Gly Asp Met Val Ser Tyr Ala Pro Ala Asp Ser Ala Asn Gln
        355                 360                 365

Asn Cys Phe Gly Gly Ile Gln Lys Asp Thr Gly Ile Gly Phe Ser Ile
    370                 375                 380

Phe Gly Asp Val Ala Leu Lys Thr Ser Phe Val His Leu His Ser Ser
385                 390                 395                 400

Ile Val Pro Gly His Tyr Ala Asp Cys Asp Met Arg Phe Asn Arg Met
                405                 410                 415

Leu Arg Ser Tyr Leu Val Asp Phe Ser Ser Ser Gly Pro Leu
            420                 425                 430


<210>  17
<211>  452
<212>  PRT
<213>  Trichoderma reesei

<400>  17

Met Glu Ala Ile Leu Gln Ala Gln Ala Lys Phe Arg Leu Asp Arg Gly
1               5                   10                  15

Leu Gln Lys Ile Thr Ala Val Arg Asn Lys Asn Tyr Lys Arg His Gly
            20                  25                  30

Pro Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Phe Gln Gln His Arg Ile His Gln Arg Gly Leu
    50                  55                  60

Ala His Pro Asp Phe Lys Ala Ala Val Gly Gly Arg Val Thr Arg Gln
65                  70                  75                  80
```

```
Lys Val Leu Ala Lys Lys Val Lys Glu Asp Gly Thr Val Asp Ala Gly
                85                  90                  95

Gly Ser Lys Thr Gly Glu Val Asp Ala Glu Asp Gln Gln Asn Asp Ser
            100                 105                 110

Glu Tyr Leu Cys Glu Val Thr Ile Gly Thr Pro Gly Gln Lys Leu Met
        115                 120                 125

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
    130                 135                 140

Leu Ser Lys His Leu Gln Glu Asn His Ala Ile Phe Asp Pro Lys Lys
145                 150                 155                 160

Ser Ser Thr Phe Lys Pro Leu Lys Asp Gln Thr Trp Gln Ile Ser Tyr
                165                 170                 175

Gly Asp Gly Ser Ser Ala Ser Gly Thr Cys Gly Ser Asp Thr Val Thr
            180                 185                 190

Leu Gly Gly Leu Ser Ile Lys Asn Gln Thr Ile Glu Leu Ala Ser Lys
        195                 200                 205

Leu Ala Pro Gln Phe Ala Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu
    210                 215                 220

Ala Trp Pro Gln Ile Asn Thr Val Gln Thr Asp Gly Arg Pro Thr Pro
225                 230                 235                 240

Ala Asn Thr Pro Val Ala Asn Met Ile Gln Gln Asp Asp Ile Pro Ser
                245                 250                 255

Asp Ala Gln Leu Phe Thr Ala Ala Phe Tyr Ser Glu Arg Asp Glu Asn
            260                 265                 270

Ala Glu Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Gln Asp Leu Val Ser
        275                 280                 285

Ala Ser Gly Gln Glu Ile Ala Trp Thr Asp Val Asp Asn Ser Gln Gly
    290                 295                 300

Phe Trp Met Phe Pro Ser Thr Lys Thr Thr Ile Asn Gly Lys Asp Ile
305                 310                 315                 320

Ser Gln Glu Gly Asn Thr Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                325                 330                 335

Leu Val Ser Asp Glu Val Cys Glu Ala Leu Tyr Lys Ala Ile Pro Gly
            340                 345                 350
```

```
Ala Lys Tyr Asp Asp Asn Gln Gln Gly Tyr Val Phe Pro Ile Asn Thr
        355                 360                 365

Asp Ala Ser Ser Leu Pro Glu Leu Lys Val Ser Val Gly Asn Thr Gln
    370                 375                 380

Phe Val Ile Gln Pro Glu Asp Leu Ala Phe Ala Pro Ala Asp Asp Ser
385                 390                 395                 400

Asn Trp Tyr Gly Gly Val Gln Ser Arg Gly Ser Asn Pro Phe Asp Ile
                405                 410                 415

Leu Gly Asp Val Phe Leu Lys Ser Val Tyr Ala Ile Phe Asp Gln Gly
            420                 425                 430

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Gln Ala Lys Gln Asn Leu
        435                 440                 445

Gln Pro Pro Gln
    450
```

<210> 18
<211> 454
<212> PRT
<213> Trichoderma atroviride

<400> 18

```
Met Glu Ala Ile Phe Asn Val Gln Ser Lys Phe Ala Leu Glu Arg Gly
1               5                   10                  15

Leu Ser Lys Ile Lys Ala Ile Arg Asn Glu Asn Tyr Lys Arg His Gly
            20                  25                  30

Thr Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Phe Gln Gly Ala Ser Phe His Gln Arg Gly Leu
    50                  55                  60

Ala His Pro Asp Phe His Glu Ala Arg Gly Gly Arg Val His Lys Lys
65                  70                  75                  80

Lys His Leu Lys Lys Lys Gln Thr Pro Glu Gly Ala Thr Asp Pro Asn
                85                  90                  95

Gly Thr Glu Thr Gly Glu Val Gly Ala Glu Asp Gln Gln Asn Asp Ser
            100                 105                 110

Glu Tyr Leu Cys Glu Val Thr Ile Gly Thr Pro Gly Gln Lys Leu Leu
        115                 120                 125
```

```
Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
    130                 135                 140

Leu Ser Lys Ser Leu Gln Ser Asn His Thr Val Phe Asn Pro Lys Asn
145                 150                 155                 160

Ser Ser Thr Phe Lys Ala Leu Thr Gly Gln Lys Trp Gln Ile Ser Tyr
                165                 170                 175

Gly Asp Gly Ser Ser Ala Ser Gly Asp Cys Gly Ser Asp Asp Val Thr
            180                 185                 190

Val Gly Gly Leu Thr Ile Lys Asn Gln Thr Val Glu Leu Ala Ser Thr
        195                 200                 205

Leu Ala Gln Gln Phe Ala Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu
    210                 215                 220

Ala Trp Pro Ser Ile Asn Thr Val Thr Thr Asn Gly Lys Pro Thr Pro
225                 230                 235                 240

Ala Asn Thr Pro Val Ala Asn Met Ile Thr Gln Glu Asp Val Pro Ser
                245                 250                 255

Glu Ser Glu Leu Phe Thr Ala Ala Phe Tyr Ser Glu Arg Asp Ala Asn
            260                 265                 270

Ala Gln Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Gln Asp Leu Val Thr
        275                 280                 285

Ala Ser Gly Gln Gln Ile Ala Trp Thr Asp Val Asp Asn Ser Gln Gly
    290                 295                 300

Phe Trp Met Phe Pro Ser Thr Ser Ser Ser Val Asn Gly Lys Ala Ile
305                 310                 315                 320

Ser Gln Ser Gly Asn Ser Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                325                 330                 335

Leu Val Ser Asp Asp Val Cys Asp Ala Leu Tyr Lys Ala Ile Pro Gly
            340                 345                 350

Ala Lys Tyr Asp Asp Gln Gln Gln Gly Tyr Val Phe Pro Met Ser Thr
        355                 360                 365

Asp Val Ser Ser Leu Pro Glu Phe Lys Val Ser Val Gly Asn Thr Gln
    370                 375                 380

Phe Val Ile Gln Pro Glu Asp Leu Ala Phe Ala Pro Ala Asp Asn Asn
385                 390                 395                 400
```

```
Asn Trp Tyr Gly Gly Val Gln Ser Arg Gly Asp Asn Pro Phe Asp Ile
                405                 410                 415

Leu Gly Asp Val Phe Leu Lys Ser Val Tyr Ala Ile Phe Asp Gln Gly
            420                 425                 430

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Gln Ala Thr Gln Asn Leu
        435                 440                 445

Asn Pro Pro Ser Asn Gln
    450
```

<210> 19
<211> 453
<212> PRT
<213> Trichoderma virens

<400> 19

```
Met Glu Ala Ile Phe Gln Ala Gln Ala Lys Phe Arg Leu Asp Arg Gly
1               5                   10                  15

Leu Thr Lys Val Lys Ala Ile Arg Asn Gln Asn Tyr Lys Arg His Gly
            20                  25                  30

Thr Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Tyr Gln Gln His Arg Ile Arg Gln Arg Gly Leu
    50                  55                  60

Ala His Pro Asp Phe His Ala Pro Val Gly Gly Arg Val His His Thr
65                  70                  75                  80

Lys His Leu His Lys Lys Val Asn Lys His Gly Ala Pro Asp Ala Thr
                85                  90                  95

Gly Thr Glu Thr Gly Glu Val Gly Ala Glu Asp Gln Gln Asn Asp Ser
            100                 105                 110

Glu Tyr Leu Cys Glu Val Thr Ile Gly Thr Pro Gly Gln Thr Leu Leu
        115                 120                 125

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
    130                 135                 140

Leu Ser Lys Thr Ile Gln Lys Gly His Ser Val Phe Gln Pro Thr Ser
145                 150                 155                 160

Ser Ser Thr Phe Lys Lys Leu Pro Asn Gln Ala Trp Gln Ile Ser Tyr
                165                 170                 175

Gly Asp Gly Ser Ser Ala Ser Gly Asp Cys Gly Ser Asp Asn Val Thr
```

```
            180                 185                 190

Ile Gly Gly Leu Thr Ile Lys Asn Gln Thr Val Glu Leu Ala Ser Lys
        195                 200                 205

Leu Ala Gln Gln Phe Ala Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu
    210                 215                 220

Ala Trp Pro Ala Ile Asn Thr Val Ala Thr Asn Gly Lys Ser Thr Pro
225                 230                 235                 240

Ala Asn Thr Pro Val Ala Asn Met Ile Thr Gln Asp Asp Ile Pro Ser
                245                 250                 255

Asp Ala Glu Leu Phe Thr Ala Ala Phe Tyr Ser Glu Arg Asp Ala Asn
            260                 265                 270

Ala Gln Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Thr Asp Leu Val Ser
        275                 280                 285

Ser Ser Gly Gln Asp Ile Ala Trp Thr Asp Ile Asp Asn Ser Gln Gly
    290                 295                 300

Phe Trp Met Phe Pro Ser Thr Ser Thr Ser Val Asn Gly Lys Ala Ile
305                 310                 315                 320

Ser Gln Ser Gly Asn Ser Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                325                 330                 335

Leu Val Ser Asp Glu Val Cys Glu Ala Leu Tyr Asn Ala Ile Pro Gly
            340                 345                 350

Ala Thr Tyr Asp Asp Gln Gln Gln Gly Tyr Val Phe Pro Gln Ser Thr
        355                 360                 365

Asp Val Ser Ser Leu Pro Glu Phe Lys Val Ser Val Gly Asp Thr Gln
    370                 375                 380

Phe Val Ile Gln Pro Glu Asp Leu Ala Phe Ala Pro Ala Asp Asp Asn
385                 390                 395                 400

Asn Trp Tyr Gly Gly Ile Gln Ser Arg Gly Thr Asn Pro Phe Asp Ile
                405                 410                 415

Leu Gly Asp Val Phe Leu Lys Ser Ile Tyr Ala Ile Phe Asp Gln Gly
            420                 425                 430

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Gln Ala Ser Gln Asn Leu
        435                 440                 445

Ser Ser Ser Ala Gln
```

450

<210> 20
<211> 454
<212> PRT
<213> Hypocrea lixii

<400> 20

Met Glu Ala Ile Phe Gln Ala Gln Ala Lys Phe Arg Leu Asp Arg Gly
1 5 10 15

Leu His Lys Ile Thr Ala Ile Arg Asn Lys Asn Tyr Lys Arg His Gly
20 25 30

Thr Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
35 40 45

Lys Pro Gly Pro Tyr Phe Gln Glu His Arg Val His Gln Arg Gly Leu
50 55 60

Val His Pro Asp Tyr Asn Ala Pro Val Gly Gly Arg Val His Ile Thr
65 70 75 80

Lys Ala Leu His Lys Lys Lys Asn His His Gly Ala Leu Asp Ala Asn
85 90 95

Gly Ser Glu Lys Gly Glu Val Gly Ala Glu Asp Gln Gln Asn Asp Ser
100 105 110

Glu Tyr Leu Cys Glu Val Thr Ile Gly Thr Pro Gly Gln Lys Leu Leu
115 120 125

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
130 135 140

Leu Ser Lys Ser Leu Gln Lys Asn His Thr Ile Phe Asn Pro Ser Glu
145 150 155 160

Ser Ser Thr Phe Lys Lys Leu Ser Gly Gln Thr Trp Gln Ile Ser Tyr
165 170 175

Gly Asp Gly Ser Ser Ala Ser Gly Asp Cys Gly Ser Asp Asn Val Thr
180 185 190

Ile Gly Gly Leu Thr Ile Lys Asn Gln Thr Val Glu Leu Ala Ser Lys
195 200 205

Leu Ala Ala Gln Phe Ala Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu
210 215 220

Ala Trp Pro Ser Ile Asn Thr Val Ala Thr Asn Gly Arg Ser Thr Pro
225 230 235 240

```
Ala Asn Thr Pro Val Ala Asn Met Ile Thr Gln Asp Asp Val Pro Ser
                245                 250                 255

Asn Ala Glu Leu Phe Thr Ala Ala Phe Tyr Ser Glu Arg Asp Ala Asn
            260                 265                 270

Ala Glu Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Gln Asp Leu Val Thr
        275                 280                 285

Ala Ser Gly Gln Asp Ile Ala Trp Thr Asp Val Asp Asn Ser Gln Gly
    290                 295                 300

Phe Trp Met Phe Pro Ser Thr Ser Ser Ser Val Asn Gly Gln Ala Ile
305                 310                 315                 320

Ser Gln Ser Gly Asn Ser Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                325                 330                 335

Leu Val Ser Asp Glu Val Cys Asp Ala Leu Tyr Lys Ala Ile Pro Gly
            340                 345                 350

Ala Thr Tyr Asp Asp Gln Gln Gln Gly Tyr Val Phe Pro Met Ser Thr
        355                 360                 365

Asp Val Ser Ser Leu Pro Glu Phe Lys Val Ser Val Gly Asp Thr Gln
    370                 375                 380

Phe Val Ile Gln Pro Glu Asp Leu Ala Phe Ala Pro Ala Asp Asp Asn
385                 390                 395                 400

Asn Trp Tyr Gly Gly Val Gln Ser Arg Gly Ser Asn Pro Phe Asp Ile
                405                 410                 415

Leu Gly Asp Val Phe Leu Lys Ser Val Tyr Ala Ile Phe Asp Gln Gly
            420                 425                 430

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Gln Ala Thr Gln Asn Leu
        435                 440                 445

Asp Ser Ser Ser Ala Gln
    450
```

<210> 21
<211> 454
<212> PRT
<213> Trichoderma asperellum

<400> 21

```
Met Glu Ala Ile Phe Asn Val Gln Thr Lys Phe Arg Leu Glu Arg Gly
1               5                   10                  15
```

```
Leu Ser Lys Ile Arg Ala Ile Arg Asn Glu Asn Tyr Lys Arg His Gly
            20                  25                  30

Thr Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Phe Gln Gly Val Gln Phe His Gln Arg Gly Leu
    50                  55                  60

Ala His Pro Asp Phe His Glu Ala Arg Gly Gly Arg Val His Lys Lys
65                  70                  75                  80

Lys His Leu Arg Lys Lys Val Thr Pro Glu Gly Ser Thr Asp Pro Asn
                85                  90                  95

Gly Thr Glu Thr Gly Glu Val Gly Ala Glu Asp Gln Gln Asn Asp Ser
            100                 105                 110

Glu Tyr Leu Cys Glu Val Thr Ile Gly Thr Pro Gly Gln Thr Leu Leu
        115                 120                 125

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu
    130                 135                 140

Leu Ser Ser Thr Ile Gln Lys Gly His Thr Val Phe Asn Pro Lys Asn
145                 150                 155                 160

Ser Ser Thr Phe Lys Ala Leu Thr Gly Gln Lys Trp Gln Ile Ser Tyr
                165                 170                 175

Gly Asp Gly Ser Ser Ala Ser Gly Asp Cys Gly Ser Asp Asn Val Thr
            180                 185                 190

Val Gly Gly Leu Thr Ile Lys Asn Gln Thr Val Glu Leu Ala Ser Thr
        195                 200                 205

Leu Ala Gln Gln Phe Ser Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu
    210                 215                 220

Ala Trp Pro Ser Ile Asn Thr Val Thr Thr Asp Gly Lys Pro Thr Pro
225                 230                 235                 240

Ala Asn Thr Ser Arg Cys Gln His Ile Thr Gln Asp Asp Val Pro Ser
                245                 250                 255

Glu Ala Gln Leu Phe Thr Ala Ala Phe Tyr Ser Glu Arg Asp Ala Asn
            260                 265                 270

Ala Gln Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Asn Asp Leu Val Thr
        275                 280                 285
```

```
Ala Ser Gly Gln Asp Ile Ala Trp Thr Asp Val Asp Asn Ser Gln Gly
    290                 295                 300

Phe Trp Met Phe Pro Ser Thr Ser Ser Ser Ile Asn Gly Lys Ala Ile
305                 310                 315                 320

Ser Gln Ser Gly Asn Ser Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                325                 330                 335

Leu Val Ser Asp Glu Val Cys Asp Ala Leu Tyr Lys Ala Ile Pro Gly
            340                 345                 350

Ala Lys Tyr Asp Asp Gln Gln Gly Tyr Val Phe Pro Met Ser Thr
        355                 360                 365

Asp Val Ser Ser Leu Pro Glu Phe Lys Val Ser Val Gly Asp Thr Gln
    370                 375                 380

Phe Val Ile Gln Pro Glu Asp Leu Ala Phe Ala Pro Ala Asp Asn Ser
385                 390                 395                 400

Asn Trp Tyr Gly Gly Val Gln Ser Arg Gly Asn Asn Pro Phe Asp Ile
                405                 410                 415

Leu Gly Asp Val Phe Leu Lys Ser Val Tyr Ala Ile Phe Asp Gln Gly
            420                 425                 430

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Gln Ala Thr Gln Asn Leu
        435                 440                 445

Asn Ser Ser Ser Asn Gln
    450


<210>  22
<211>  426
<212>  PRT
<213>  Aspergillus niger

<400>  22

Met Ala Thr Lys Ile Lys Leu Ile Pro Asn Leu Asn Tyr Lys Arg Ser
1               5                   10                  15

Gly Thr Lys Ser Tyr Val His Leu Met Arg Lys Tyr Arg Phe His Pro
            20                  25                  30

Thr Lys Pro Gly Pro Tyr Thr Leu Ser Ser Ser Ile Gln Gln Thr Gly
        35                  40                  45

Arg Pro Tyr Thr Glu Lys Pro Ile Gly Gly Arg Ala His Ile Arg Gln
    50                  55                  60
```

```
Leu Val Arg Lys Lys Ser Thr Thr Ser Asp Glu Val Gly Glu Val Pro
65                  70                  75                  80

Ala Glu Asp Val Gln Asn Asp Ser Met Tyr Leu Ala Thr Val Gly Ile
                85                  90                  95

Gly Thr Pro Ala Gln Asn Leu Lys Leu Asp Phe Asp Thr Gly Ser Ala
            100                 105                 110

Asp Leu Trp Val Trp Ser Asn Lys Leu Pro Ser Thr Leu Leu Ser Glu
        115                 120                 125

Asn Lys Thr His Ala Ile Phe Asp Ser Ser Lys Ser Ser Thr Phe Lys
    130                 135                 140

Thr Leu Glu Gly Glu Ser Trp Gln Ile Ser Tyr Gly Asp Gly Ser Ser
145                 150                 155                 160

Ala Ser Gly Ser Val Gly Thr Asp Asp Val Asn Ile Gly Gly Val Val
                165                 170                 175

Val Lys Asn Gln Ala Val Glu Leu Ala Glu Lys Met Ser Ser Thr Phe
            180                 185                 190

Ala Gln Gly Glu Gly Asp Gly Leu Leu Gly Leu Ala Phe Ser Asn Ile
        195                 200                 205

Asn Thr Val Gln Pro Lys Ser Val Lys Thr Pro Val Glu Asn Met Ile
    210                 215                 220

Leu Gln Asp Asp Ile Pro Lys Ser Ala Glu Leu Phe Thr Ala Lys Leu
225                 230                 235                 240

Asp Thr Trp Arg Asp Thr Asp Asp Glu Ser Phe Tyr Thr Phe Gly Phe
                245                 250                 255

Ile Asp Gln Asp Leu Val Lys Thr Ala Gly Glu Glu Val Tyr Tyr Thr
            260                 265                 270

Pro Val Asp Asn Ser Gln Gly Phe Trp Leu Phe Asn Ser Thr Ser Ala
        275                 280                 285

Thr Val Asn Gly Lys Thr Ile Asn Arg Ser Gly Asn Thr Ala Ile Ala
    290                 295                 300

Asp Thr Gly Thr Thr Leu Ala Leu Val Asp Asp Asp Thr Cys Glu Ala
305                 310                 315                 320

Ile Tyr Ser Ala Ile Asp Gly Ala Tyr Tyr Asp Gln Glu Val Gln Gly
                325                 330                 335
```

```
Trp Ile Tyr Pro Thr Asp Thr Ala Gln Asp Lys Leu Pro Thr Val Ser
            340                 345                 350

Phe Ala Val Gly Glu Lys Gln Phe Val Val Gln Lys Glu Asp Leu Ala
        355                 360                 365

Phe Ser Glu Ala Lys Thr Gly Tyr Val Tyr Gly Gly Ile Gln Ser Arg
    370                 375                 380

Gly Asp Met Thr Met Asp Ile Leu Gly Asp Thr Phe Leu Lys Ser Ile
385                 390                 395                 400

Tyr Ala Ile Phe Asp Val Gly Asn Leu Arg Phe Gly Ala Val Gln Arg
                405                 410                 415

Glu Glu Leu Arg Gln Ser Leu Lys Ser Glu
            420                 425
```

<210> 23
<211> 459
<212> PRT
<213> Aspergillus fumigatus

<400> 23

```
Met Ser Ser Cys Arg Phe Ser Asn Thr Leu Lys Thr Ala Thr Ala Ser
1               5                   10                  15

Pro Cys Lys Tyr Leu His Thr Thr Thr Thr Ile Thr Met Ala Thr Arg
            20                  25                  30

Ile Lys Leu Leu Pro Asn Pro His Tyr Arg Lys Ser Gly Thr Lys Ser
        35                  40                  45

Tyr Val His Leu Met Arg Lys Tyr Arg Phe Thr Pro Thr Lys Gly Gly
    50                  55                  60

Arg Tyr Phe Leu Ser Ser Ser Leu His Gln Thr Gly Arg Gln Tyr Thr
65                  70                  75                  80

His Leu Pro Val Gly Gly Arg Ala Arg Ile Gln His Val Leu Arg Lys
                85                  90                  95

Arg Ile Ala Asp Thr Asp Glu Thr Ser Asp Val Gly Ala Asp Asp Val
            100                 105                 110

Gln Asn Asp Thr Met Tyr Leu Ala Pro Val Ser Ile Gly Thr Pro Ala
        115                 120                 125

Gln Thr Ile His Leu Glu Val Asp Thr Gly Ser Ala Asp Leu Trp Val
    130                 135                 140

Trp Ser Thr His Leu Ala Pro Ala Thr Ile Ala Gln His Lys Thr Gly
```

```
145                 150                 155                 160

Thr Val Phe Asp Pro Ser Lys Ser Ser Thr Phe Glu Glu Gln Ser Gly
                165                 170                 175

Ser Thr Trp Lys Ile Ser Arg Asp Asp Gly Ser Phe Ala Phe Gly Thr
            180                 185                 190

Val Gly Thr Asp Thr Ile Ser Leu Gly Gly Leu Arg Val Glu His Gln
        195                 200                 205

Ala Ile Glu Leu Ala Asp Ser Leu Ser Ala Gln Tyr Glu Gln Gly Thr
    210                 215                 220

Gly Asp Gly Leu Leu Gly Leu Ala Phe Ser His Ile Asn Thr Val Arg
225                 230                 235                 240

Pro Gln Pro Val Arg Thr Leu Val Glu Asn Met Val Ala Gln Glu Asp
                245                 250                 255

Ile Pro Glu Ser Ala Lys Leu Phe Thr Ala Lys Leu Gly Cys Trp Gln
            260                 265                 270

Gly Ala Asn Glu Pro Asp Glu Gly Glu Pro Phe Phe Thr Phe Gly Phe
        275                 280                 285

Ile Asp Gln Asp Ile Val Thr Ala Ser Gly Glu Glu Val Tyr Tyr Thr
    290                 295                 300

Pro Ile Asp Asn Ser Arg Gly Phe Trp Leu Phe Asp Ser Ala Ser Ala
305                 310                 315                 320

Thr Val Asn Gly Lys Thr Ile Ala Arg Ser Gly Asn Lys Ala Ile Ala
                325                 330                 335

Asp Thr Gly Thr Pro Leu Ala Leu Val Asp Asp Glu Thr Cys Gln Ala
            340                 345                 350

Ile Tyr Asp Ala Ile Pro Gly Ala His Tyr Asp Asp Glu Ser Gln Gly
        355                 360                 365

Tyr Ile Phe Pro Ser Thr Thr Thr Ala Asp Lys Leu Pro Val Val Ser
    370                 375                 380

Leu Ala Val Gly Asp Lys Gln Phe Val Val Gln Arg Glu Asp Leu Gly
385                 390                 395                 400

Phe Ala Glu Ala Lys Ser Gly Tyr Val Tyr Gly Gly Ile Gln Ser Arg
                405                 410                 415

Gly Ser Met Ala Met Asp Ile Leu Gly Ser Thr Phe Leu Lys Gly Ile
```

420 425 430

Tyr Pro Ile Phe Asp Val Gly Asn Leu Arg Phe Gly Ala Val Gln Arg
435 440 445

Lys Glu Leu His Gln Asn Leu Ser Ala Pro Gln
450 455

<210> 24
<211> 393
<212> PRT
<213> Aspergillus niger

<400> 24

Met Arg Lys Tyr Arg Phe His Pro Thr Lys Pro Gly Pro Tyr Thr Leu
1 5 10 15

Ser Ser Ser Ile Gln Gln Thr Gly Arg Pro Tyr Thr Glu Lys Pro Ile
20 25 30

Gly Gly Arg Ala His Ile Arg Gln Leu Val Arg Lys Lys Ser Thr Thr
35 40 45

Ser Asp Glu Val Gly Glu Val Pro Ala Glu Asp Val Gln Asn Asp Ser
50 55 60

Met Tyr Leu Ala Thr Val Gly Ile Gly Thr Pro Ala Gln Asn Leu Lys
65 70 75 80

Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val Trp Ser Asn Lys
85 90 95

Leu Pro Ser Thr Leu Leu Ser Glu Asn Lys Thr His Ala Ile Phe Asp
100 105 110

Ser Ser Lys Ser Ser Thr Phe Lys Thr Leu Glu Gly Glu Ser Trp Gln
115 120 125

Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser Gly Ser Val Gly Thr Asp
130 135 140

Asp Val Asn Ile Gly Gly Val Val Val Lys Asn Gln Ala Val Glu Leu
145 150 155 160

Ala Glu Lys Met Ser Ser Thr Phe Ala Gln Gly Glu Gly Asp Gly Leu
165 170 175

Leu Gly Leu Ala Phe Ser Asn Ile Asn Thr Val Gln Pro Lys Ser Val
180 185 190

Lys Thr Pro Val Glu Asn Met Ile Leu Gln Asp Asp Ile Pro Lys Ser
195 200 205

```
Ala Glu Leu Phe Thr Ala Lys Leu Asp Thr Trp Arg Asp Thr Asp Asp
    210                 215                 220

Glu Ser Phe Tyr Thr Phe Gly Phe Ile Asp Gln Asp Leu Val Lys Thr
225                 230                 235                 240

Ala Gly Glu Glu Val Tyr Tyr Thr Pro Val Asp Asn Ser Gln Gly Phe
                245                 250                 255

Trp Leu Phe Asn Ser Thr Ser Ala Thr Val Asn Gly Lys Thr Ile Asn
            260                 265                 270

Arg Ser Gly Asn Thr Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu
        275                 280                 285

Val Asp Asp Asp Thr Cys Glu Ala Ile Tyr Ser Ala Ile Asp Gly Ala
    290                 295                 300

Tyr Tyr Asp Gln Glu Val Gln Gly Trp Ile Tyr Pro Thr Asp Thr Ala
305                 310                 315                 320

Gln Asp Lys Leu Pro Thr Val Ser Phe Ala Val Gly Glu Lys Gln Phe
                325                 330                 335

Val Val Gln Lys Glu Asp Leu Ala Phe Ser Glu Ala Lys Thr Gly Tyr
            340                 345                 350

Val Tyr Gly Gly Ile Gln Ser Arg Gly Asp Met Thr Met Asp Ile Leu
        355                 360                 365

Gly Asp Thr Phe Leu Lys Ser Ile Tyr Ala Val Ser Ala Leu Leu Leu
    370                 375                 380

Ala Leu Arg Gly Asp Ile Glu Ala His
385                 390


<210>  25
<211>  439
<212>  PRT
<213>  Cordyceps militaris

<400>  25

Met Glu Ala Phe Phe Gln Ala Gln Ala Lys Phe Gln Ala Ser Pro Gly
1               5                   10                  15

Leu Thr Lys Val Arg Ala Lys Pro Asn Gln Asn Tyr Lys Arg His Gly
            20                  25                  30

Thr Lys Ser Tyr Val Tyr Leu Leu Asn Arg Phe Gly Phe Glu Pro Thr
        35                  40                  45
```

```
Lys Pro Gly Pro Tyr Arg Arg Val Ser His Leu Gln Gln Arg Gly Leu
    50                  55                  60

Ala Gln Ser His Val Ala Val Gly Gly Arg Ala Ala Val Thr Ser Arg
65                  70                  75                  80

Leu Ala Lys Thr Leu Asp Ala Ala Gly Thr Gln Thr Gly Glu Val Thr
                85                  90                  95

Ala Glu Asp Gln Gln Asn Asp Ser Glu Tyr Leu Cys Glu Val Ser Ile
            100                 105                 110

Gly Thr Pro Pro Gln Lys Val Leu Leu Asp Phe Asp Thr Gly Ser Ser
        115                 120                 125

Asp Leu Trp Ile Phe Ser Thr Glu Leu Ser Lys Ala Thr Gln Lys Gly
    130                 135                 140

His Thr Ile Phe Asn Pro Ser Lys Ser Ser Thr Phe Lys Lys Leu Pro
145                 150                 155                 160

Gly Gln Thr Trp Gln Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser Gly
                165                 170                 175

Asp Cys Gly Ser Asp Asn Val Thr Ile Gly Gly Leu Thr Ile Glu Gly
            180                 185                 190

Gln Thr Val Glu Leu Ala Ser Lys Leu Ala Ala Gln Phe Ala Gln Gly
        195                 200                 205

Thr Gly Asp Gly Leu Leu Gly Leu Ala Phe Pro Ala Ile Asn Thr Val
    210                 215                 220

Lys Lys Asn Gly Gln Pro Ala Pro Ala Gln Thr Pro Val Ala Asn Met
225                 230                 235                 240

Met Thr Gln Gly Asp Ile Pro Lys Gln Ser Gln Leu Phe Thr Ser Ala
                245                 250                 255

Phe Tyr Ser Glu Arg Asp Ala Asp Gly Pro Gln Ser Phe Tyr Thr Phe
            260                 265                 270

Gly Tyr Val Asp Glu Ala Leu Val Lys Ala Ser Gly Lys Asp Ile Ala
        275                 280                 285

Trp Thr Lys Ile Asp Ser Ser Glu Gly Phe Trp Met Phe Pro Ser Ala
    290                 295                 300

Ser Val Ser Ile Ala Gly Lys Lys Leu Ala Leu Asp Gly Asn Thr Ala
305                 310                 315                 320
```

```
Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp Glu Val Cys
                325                 330                 335

Asp Ala Leu Tyr Lys Ala Ile Pro Gly Ala Lys Tyr Asp Ala Gln Gln
            340                 345                 350

Gln Gly Tyr Val Phe Pro Leu Thr Thr Lys Pro Glu Asp Leu Pro Ala
        355                 360                 365

Phe Glu Val Ala Ala Glu Asp Leu Ala Phe Ala Gln Ala Asp Asp Lys
    370                 375                 380

Asn Trp Tyr Gly Gly Val Gln Ser Arg Gly Ser Asn Pro Phe Asp Ile
385                 390                 395                 400

Leu Gly Asp Ala Phe Leu Lys Ser Val Tyr Ala Ile Trp Asp Gln Gly
                405                 410                 415

Asn Gln Arg Phe Gly Ala Val Pro Lys Ile Glu Lys Thr Gln Asn Leu
            420                 425                 430

Thr Ala Lys Ala Gln Ser Gln
        435
```

<210> 26
<211> 447
<212> PRT
<213> Glomerella graminicola

<400> 26

```
Met Gln Ala Phe Phe Gln Ala Gln Ala Lys Phe Lys Ala Asp Asn Gly
1               5                   10                  15

Leu Ala Lys Ile Pro Val Val Pro Asn Lys Asn Tyr Asn Arg His Gly
            20                  25                  30

Arg Lys Ser Tyr Val His Leu Leu Asn Lys Phe Lys Phe Glu Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Val Gln Thr Arg Arg Met Ala Gln Arg Gly Leu
    50                  55                  60

Ala Ala Pro Gly Phe Asn Ala Pro Val Gly Gly Arg Val Ser Met Ser
65                  70                  75                  80

Lys Val Leu Val Lys Lys Thr Glu Gly Asp Gln His Gly Glu Val Thr
                85                  90                  95

Ala Glu Asp Gln Gln Tyr Asp Ser Met Tyr Leu Cys Glu Val Ser Ile
            100                 105                 110
```

```
Gly Thr Pro Pro Gln Lys Phe Lys Leu Asp Phe Asp Thr Gly Ser Ser
        115                 120                 125

Asp Leu Trp Val Phe Ser Lys Glu Leu Ser Ser Ser Leu Gln Arg Asn
    130                 135                 140

His Asn Val Phe Asp Pro Ser Lys Ser Ser Thr Phe Lys Lys Leu Glu
145                 150                 155                 160

Gly Lys Thr Trp Lys Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser Gly
                165                 170                 175

Asp Cys Gly Thr Asp Asn Leu Val Leu Gly Gly Leu Thr Val Lys Asn
            180                 185                 190

Gln Val Thr Glu Leu Ala Ala His Leu Ala Pro Gln Phe Ser Gln Gly
        195                 200                 205

Thr Gly Asp Gly Leu Leu Gly Leu Ala Phe Ser Ser Ile Asn Thr Val
    210                 215                 220

Gln Asn Lys Gly Gly Ala Arg Asp Pro Gln Ala Thr Ala Val Asp Asn
225                 230                 235                 240

Met Ile Ala Glu Ser Asp Ile Pro Lys Asp Ala Glu Leu Phe Thr Ser
                245                 250                 255

Ala Phe Tyr Ser Glu Arg Asp Glu Ser Lys Pro Arg Ser Phe Tyr Thr
            260                 265                 270

Phe Gly Trp Ile Asp Thr Glu Leu Val Glu Ala Ser Gly Glu Asp Ile
        275                 280                 285

His Trp Val Asp Ile Asp Asn Thr Gln Gly Phe Trp Met Phe Ser Ser
    290                 295                 300

Glu Ser Ala Ser Val Asn Gly Lys Ala Val Ala Gln Ser Gly Asn Lys
305                 310                 315                 320

Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp Glu Val
                325                 330                 335

Cys Gln Ala Leu Tyr Asp Ala Ile Pro Gly Ser Lys Tyr Asp Glu Gln
            340                 345                 350

Gln Gln Gly Tyr Val Phe Pro Thr Ser Ile Lys Ala Glu Asp Met Pro
        355                 360                 365

Glu Phe Lys Val Ala Val Gly Asp Lys Glu Phe Val Ile Gln Lys Glu
    370                 375                 380
```

```
Asp Leu Ala Phe Ala Pro Ala Ser Asp Gly Phe Trp Tyr Gly Gly Val
385                 390                 395                 400

Gln Ser Arg Gly Ser Asn Lys Phe Asp Ile Leu Gly Asp Ala Phe Leu
                405                 410                 415

Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly Asn Thr Arg Phe Gly Cys
            420                 425                 430

Val Pro Lys Ile Glu Lys Thr Gln Asn Leu Gln Pro Ser Ser Ser
        435                 440                 445

<210>  27
<211>  461
<212>  PRT
<213>  Fusarium oxysporum

<400>  27

Met Glu Ala Ile Tyr Gln Val Gln His Gln Phe Arg Leu Asp Arg Gly
1               5                   10                  15

Leu Thr Arg Ile Ser Val Lys Arg Asn Pro His Tyr Gln Pro His Gly
            20                  25                  30

Thr Lys Ser Tyr Val His Leu Leu Asn Arg Phe Gly Phe Lys Pro Thr
        35                  40                  45

Lys Pro Gly Pro Tyr Phe Gln Asp Arg Gln Ile Gln Gln Arg Gly Leu
    50                  55                  60

Ala His Pro Arg Phe His Ala Ala Val Gly Gly Arg Val Tyr Gln Thr
65                  70                  75                  80

Lys Ile Leu Arg Lys Lys Leu Gly Thr Asp Gly Thr Leu Asp Ala Asp
                85                  90                  95

Gly Thr Gln Ile Gly Glu Val Thr Ala Glu Asp Leu Pro Phe Asp Ser
            100                 105                 110

Met Tyr Leu Cys Glu Val Ser Ile Gly Thr Pro Pro Gln Lys Phe Asn
        115                 120                 125

Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val Asn Ile Pro Asn
    130                 135                 140

Glu Ala Leu Lys Gln Arg Val Lys Asn Thr Asp Gln Lys Gly His Asn
145                 150                 155                 160

Val Phe Asn Pro Leu Ser Ser Ser Ser Phe Asn Glu Leu Thr Asp Lys
                165                 170                 175

Thr Trp Lys Ile Ser Tyr Gly Asp Gly Ser Ser Ala Ser Gly Asp Cys
```

```
            180                 185                 190

Gly Ser Asp Asp Val Thr Ile Gly Gly Leu Thr Ile Lys Asn Gln Thr
        195                 200                 205

Val Glu Leu Ala Ser Gln Leu Asp Gln Gln Phe Ala Arg Gly Lys Gly
    210                 215                 220

Asp Gly Leu Leu Gly Leu Ala Phe Pro Gln Ile Asn Thr Val Lys Thr
225                 230                 235                 240

Asn Trp Asp Ser Asp Pro Ala Asp Thr Pro Val Val Asn Met Ile Asn
                245                 250                 255

Gln His Asp Ile Pro Lys Glu Ala Glu Leu Phe Thr Ser Ala Phe Tyr
            260                 265                 270

Ser Gln Arg Asp Ala Asn Ser Pro Glu Ser Phe Tyr Thr Phe Gly Phe
        275                 280                 285

Ile Asp Thr Asp Leu Val Ala Arg Ser Gly Glu Glu Ile Ser Trp Thr
    290                 295                 300

Arg Ile Asp Ser Ser Asp Gly Phe Trp Lys Phe Pro Ser Ala Arg Phe
305                 310                 315                 320

Ser Val Lys Gly Lys Ile Ile Asp Leu Ser Gly Asn Lys Ala Ile Ala
                325                 330                 335

Asp Thr Gly Thr Thr Leu Val Leu Val Ser Asp Glu Val Cys Glu Ala
            340                 345                 350

Leu Tyr Asp Ala Ile Pro Gly Ala Arg Tyr Ser Pro Thr Gln Gln Gly
        355                 360                 365

Tyr Val Phe Pro Arg Ser Thr Asn Val Glu Asp Leu Pro Glu Phe Lys
    370                 375                 380

Val Ala Ile Gly Asp Lys Gln Phe Asp Ile Gln Pro Gln Asp Leu Val
385                 390                 395                 400

Phe Ala Pro Ala Asp Lys Asp Asn Trp Tyr Gly Gly Ile Gln Ser Arg
                405                 410                 415

Gly Asn Leu Pro Phe Asp Ile Phe Gly Asp Ala Phe Leu Lys Ser Val
            420                 425                 430

Tyr Ala Ile Trp Asp Gln Gly Asn Lys Arg Phe Gly Val Val Pro Lys
        435                 440                 445

Ile Glu Glu Thr Gln Asn Leu Asp Pro Thr Pro Ile Ala
```

450 455 460

<210> 28
<211> 452
<212> PRT
<213> Grosmannia clavigera

<400> 28

Met Gln Ser Ile Phe Gln Val Gln Arg Gln Val Arg Ala Asp Leu Gly
1 5 10 15

Leu Glu Lys Val Arg Val Ile Leu Asn Lys Asn Tyr Lys Ala Asn Gly
20 25 30

Thr Lys Ser Tyr Val His Leu Leu Asn Arg Tyr Gly Phe Gln Pro Thr
35 40 45

Lys Pro Gly Pro Tyr Arg His Val Asn Arg Val His Gln Arg Gly Leu
50 55 60

Arg Val Thr Asp Ile Thr Lys Val His Lys Pro Val Gly Gly Arg Val
65 70 75 80

His Leu Glu Lys Val Leu Ala Lys His Ser Ala Thr Gly Asp Gly Asn
85 90 95

Thr Gln Ala Gly Glu Val Thr Ala Glu Asp Gln Gln Asn Asp Ser Met
100 105 110

Tyr Leu Cys Glu Val Glu Ile Gly Thr Pro Ser Gln Lys Leu Met Leu
115 120 125

Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Leu
130 135 140

Ser Ala Asp Val Gln Lys Gly His Ala Val Phe Asp Ser Ser Lys Ser
145 150 155 160

Thr Thr Phe Lys Thr Ser Ser Gly Leu Thr Trp Gln Ile Glu Tyr Gly
165 170 175

Asp Gly Ser Ser Ala Ser Gly Asp Val Gly Thr Asp Val Val Thr Val
180 185 190

Gly Gly Leu Val Ile Lys Asn Gln Ser Val Glu Leu Ala Lys Thr Leu
195 200 205

Ala Ala Gln Phe Ser Gln Gly Thr Gly Asp Gly Leu Leu Gly Leu Ala
210 215 220

Trp Pro Ser Ile Asn Thr Ile Lys Ser Gly Tyr Ser Ser Asp Pro Gln
225 230 235 240

```
Pro Thr Pro Val Ala Asn Met Ile Ser Glu Gly Val Val Pro Lys Glu
                245                 250                 255

Ala Gln Leu Phe Thr Ser Cys Phe Tyr Gly Glu Arg Asp Asn Gln Glu
            260                 265                 270

Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Glu Asp Leu Val Lys Ala Ser
        275                 280                 285

Gly Ala Glu Ile Ala Trp Thr Ser Ile Asp Asn Ser Gln Gly Phe Trp
    290                 295                 300

Met Phe Pro Ser Thr Ser Ala Ser Ile Asn Gly Gln Ser Ile Thr Leu
305                 310                 315                 320

Ser Asn Asn Thr Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val
                325                 330                 335

Ser Asp Glu Val Cys Glu Ala Leu Tyr Lys Ala Ile Pro Asn Ser Lys
            340                 345                 350

Tyr Asp Glu Lys Gln Gln Gly Tyr Leu Ile Pro Lys Thr Thr Thr Ile
        355                 360                 365

Asp Gln Leu Pro Thr Val Ser Ile Thr Val Gly Asp Asn Lys Phe Val
    370                 375                 380

Val Gln Lys Glu Asp Leu Ile Phe Thr Gln Ala Asp Asp Thr His Trp
385                 390                 395                 400

Tyr Gly Gly Ile Gln Ser Arg Gly Ser Asn Thr Phe Asp Ile Leu Gly
                405                 410                 415

Asp Val Phe Leu Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly Asn Val
            420                 425                 430

Arg Phe Gly Ala Val Pro Lys Ile Gln Lys Thr Gln Thr Leu Asp Pro
        435                 440                 445

Gly Ser Ser Thr
    450


<210>  29
<211>  432
<212>  PRT
<213>  Botryotinia fuckeliana

<400>  29

Met Ala Ser Leu Gln Gly Leu Ser Lys Ile Arg Leu Ile Pro Asn Lys
1               5                   10                  15
```

```
Asn Tyr Lys Arg Ser Gly Thr Lys Ser Tyr Val Tyr Leu Leu Asn Lys
            20                  25                  30

Trp Gly Phe Glu Pro Thr Lys Pro Gly Pro Tyr Phe Gln Met Asn Lys
        35                  40                  45

Ala Thr Ala Thr Ser Ala Ser Phe His Lys Phe Gly His Lys Ser Gln
    50                  55                  60

Thr Gln Arg Val Leu Ala Lys Lys Thr Ala Thr Gly Glu Asn Gly Glu
65                  70                  75                  80

Val Pro Ala Glu Asp Gln Gln Asn Asp Ser Glu Tyr Leu Cys Pro Val
                85                  90                  95

Gln Ile Gly Thr Pro Ala Gln Thr Leu Met Leu Asp Phe Asp Thr Gly
            100                 105                 110

Ser Ser Asp Leu Trp Val Trp Ser Thr Glu Leu Pro Lys Ala Thr Thr
        115                 120                 125

Ser Asn Ala Thr Gly His Thr Ile Phe Asp Pro Lys Lys Ser Ser Thr
    130                 135                 140

Phe Lys Ala Ala Lys Ser Ser Lys Trp Gln Ile Ser Tyr Gly Asp Ser
145                 150                 155                 160

Ser Ser Ala Ser Gly Thr Val Gly Thr Asp Thr Val Ser Leu Gly Gly
                165                 170                 175

Leu Ala Ile Lys Asn Gln Ala Val Glu Leu Ala Thr Lys Leu Ser Ala
            180                 185                 190

Gln Phe Glu Gln Gly Ala Gly Asp Gly Leu Leu Gly Leu Ala Trp Gly
        195                 200                 205

Ser Ile Asn Thr Val Thr Pro Thr Pro Val Ala Thr Pro Val Glu Asn
    210                 215                 220

Met Ile Ser Gln Glu Asp Ile Pro Ser Asp Ala Glu Leu Phe Thr Val
225                 230                 235                 240

Asn Leu Gly Ser Trp Arg Asp Ala Asp Glu Ala Asp Lys Gly Ala Ser
                245                 250                 255

Phe Tyr Thr Phe Gly Tyr Ile Asp Gln Asp Val Val Gly Ser Gln Glu
            260                 265                 270

Ile Tyr Tyr Thr Pro Val Asp Asn Ser Gln Gly Phe Trp Met Phe Asp
        275                 280                 285
```

```
Ser Thr Ser Ala Thr Val Asn Gly Lys Thr Val Ala Gln Thr Gly Asn
    290                 295                 300

Gln Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp Glu
305                 310                 315                 320

Thr Cys Gln Ala Ile Tyr Asp Ala Ile Pro Gly Ser Thr Tyr Asp Ser
                325                 330                 335

Glu Gln Gln Gly Tyr Thr Phe Pro Ser Asn Thr Ser Ala Asp Asp Leu
            340                 345                 350

Pro Val Val Thr Phe Ala Val Gly Gly Lys Gln Phe Ala Val Gln Lys
        355                 360                 365

Glu Asp Leu Gly Phe Ala Asp Ala Gly Asn Gly Met Val Tyr Gly Gly
    370                 375                 380

Ile Gln Ser Arg Gly Ser Met Thr Phe Asp Ile Leu Gly Asp Thr Phe
385                 390                 395                 400

Leu Lys Gly Ile Tyr Ala Ile Phe Asp Gln Gly Asn Thr Arg Phe Gly
                405                 410                 415

Ala Val Gln Arg Thr Glu Ala Thr Gln Asn Thr Ala Ala Pro Pro Ala
            420                 425                 430
```

<210> 30
<211> 677
<212> PRT
<213> Thielavia terrestris

<400> 30

```
Met Glu Ala Asp Phe Gln Leu Phe Ser Ser Leu Arg Tyr Asp Pro Val
1               5                   10                  15

Leu Leu Gln Val Pro Ala Ser Asn Leu Thr His Ala Gly Trp Asn Trp
            20                  25                  30

Val Thr Ser Ser Pro Leu Tyr Met Leu Asp Tyr His Arg Asp Arg Met
        35                  40                  45

Leu Gln Ala Ala Ala His Trp Gly Trp Gln Ala Ala Val Glu Val Leu
    50                  55                  60

Asp Gly Asp Ala Gly Leu Lys Arg Leu Ala Gly Phe Val Met Asp Ser
65                  70                  75                  80

Ile Gly Gly Asn Gln Pro Ser Pro Leu Arg Val Arg Val Ser Ile Ser
                85                  90                  95
```

```
Lys Lys Gly Glu Met Ser Val Ile Ser Gly Pro Val Pro Glu Met Pro
            100                 105                 110

Leu Ala Asn Leu Phe Pro Thr Arg Leu Pro Ala Pro Gly Glu Asp Pro
        115                 120                 125

Glu Glu Ala His Ser Asn Gly Arg Ser Asp Gly Gln Pro Ser Lys Thr
    130                 135                 140

Pro Glu Tyr Glu Ile Leu Val Asp Ser Leu Gly Ala Thr Trp Thr Ala
145                 150                 155                 160

His Ser His Phe Lys Thr Thr Lys Arg Ala Val Tyr Asp Gly Ala Arg
                165                 170                 175

Gln Arg Ala Gln Ile Ser Leu Ala Asp Lys Lys Glu Val Leu Ile Val
            180                 185                 190

Asn Glu Ala Asp Gly Thr Val Met Glu Gly Ser Thr Thr Thr Pro Tyr
        195                 200                 205

Phe Trp Arg Glu Gly Arg Trp Val Thr Pro Ala Val Asn Met Glu Asp
    210                 215                 220

Lys Ser Glu Lys Gly Ala Gly Gly Gln Asn Gly Thr Ser Arg Arg Trp
225                 230                 235                 240

Ala Leu Glu Lys Tyr Val Asn Thr Thr Pro Arg Pro Arg His Gln Asp
                245                 250                 255

Asp Arg His His Arg His Leu His Lys Val Lys Ile Ile His Asn Gln
            260                 265                 270

Asn Tyr Gln Arg His Gly Thr Lys Ser Tyr Val Ser Val Leu Asn Arg
        275                 280                 285

Phe Gly Phe Gln Pro Thr Lys Pro Gly Pro Tyr Phe Gln Lys Phe Thr
    290                 295                 300

Lys Pro Thr Asp Glu Ala Ala Arg Gly Lys Thr Gly Pro Gly Val Lys
305                 310                 315                 320

Pro Gly His Val Trp Val Gly Leu Tyr Lys Lys Thr Lys Asp Asp Gln
                325                 330                 335

Val Gly Glu Val Thr Ala Glu Asp Gln Gln Asn Asp Ala Glu Tyr Leu
            340                 345                 350

Cys Glu Val Ser Ile Gly Thr Pro Pro Gln Lys Val Thr Leu Asp Phe
        355                 360                 365
```

```
Asp Thr Gly Ser Ala Asp Leu Trp Val Asn His Lys Ser Phe Ala Pro
    370                 375                 380

His Lys Ser Ser Thr Phe Lys Leu Ala Pro Asn Met Ser Trp Arg Ile
385                 390                 395                 400

Gln Tyr Gly Asp Gly Ser Ser Ala Ser Gly Ser Val Gly Leu Asp Val
                405                 410                 415

Leu Ser Ile Gly Gly Leu Thr Ile Lys Asn Gln Ala Ile Glu Ile Ala
            420                 425                 430

Thr Thr Met Ser Asp Gln Phe Ser Gln Gly Ser Met Asp Gly Leu Leu
        435                 440                 445

Gly Leu Ala Phe Ser Lys Ile Asn Thr Val Glu Thr Asn Gly Gln Pro
    450                 455                 460

Asp Pro Gln Pro Thr Pro Val Glu Asn Met Ile Thr Gln Glu Asp Ile
465                 470                 475                 480

Pro Glu Asp Ser Glu Leu Phe Thr Ser Ala Met Tyr Ser Thr Arg Asp
                485                 490                 495

Gln Gly Glu Gln Ser Phe Tyr Thr Phe Gly Trp Ile Asp Gln Asp Leu
            500                 505                 510

Val Lys Ala Ser Gly Gln Asp Ile Ser Trp Thr Asn Val Asp Thr Ser
        515                 520                 525

Gln Gly Phe Trp Met Phe Pro Ser Glu Ser Ala Thr Val Asn Ser Lys
    530                 535                 540

Lys Leu Ser Leu Ser Gly Asn Lys Ala Ile Ala Asp Thr Gly Thr Thr
545                 550                 555                 560

Leu Ala Leu Val Ser Asp Glu Val Cys Glu Ala Leu Tyr Ser Gln Ile
                565                 570                 575

Gln Gly Ser Tyr Tyr Ser Glu Gln Tyr Gln Gly Tyr Ile Ile Pro Lys
            580                 585                 590

Ser Ile Thr Ala Asp Asp Leu Pro Asp Phe Ser Val Ala Val Gly Asp
        595                 600                 605

Lys Glu Phe Val Ile Gln Lys Glu Asp Leu Leu Phe Ala Leu Ala Asp
    610                 615                 620

Asp Asn Ser Trp Tyr Gly Ala Val Gln Ser Arg Gly Glu Asn Pro Phe
625                 630                 635                 640
```

```
Asp Ile Leu Gly Asp Ala Phe Leu Lys Ser Ile Tyr Ala Ile Trp Asp
                645                 650                 655

Gln Gly Asn Ser Arg Phe Gly Ala Val Pro Lys Ile Glu Lys Thr Gln
            660                 665                 670

Asn Ile Lys Pro Glu
        675
```

<210> 31
<211> 433
<212> PRT
<213> Sclerotinia sclerotiorum

<400> 31

```
Met Ala Thr Leu Gln Gly Leu Ser Arg Val Arg Leu Val Pro Asn Lys
1               5                   10                  15

Asn Tyr Lys Arg Ser Gly Ile Lys Ser Tyr Val Tyr Leu Leu Asn Lys
            20                  25                  30

Trp Gly Phe Glu Pro Thr Leu Pro Gly Pro Tyr Phe Gln Met Asn Lys
        35                  40                  45

Ala Thr Glu Arg Glu Ala Thr Tyr His Lys Phe Gly His Lys Ser His
    50                  55                  60

His His Lys Arg His Leu Ala Lys Lys Thr Pro Thr Gly Glu Asn Gly
65                  70                  75                  80

Glu Val Pro Ala Gln Asp Gln Gln Asn Asp Ser Glu Tyr Leu Cys Pro
                85                  90                  95

Val Gln Ile Gly Thr Pro Ala Gln Thr Leu Met Leu Asp Phe Asp Thr
            100                 105                 110

Gly Ser Ser Asp Leu Trp Val Trp Ser Thr Glu Leu Pro Lys Ser Thr
        115                 120                 125

Thr Ser Lys Ala Thr Gly His Thr Ile Phe Asp Pro Thr Lys Ser Ser
    130                 135                 140

Thr Phe Lys Ala Ser Lys Ser Ser Lys Trp Gln Ile Ser Tyr Gly Asp
145                 150                 155                 160

Ser Ser Ser Ala Ser Gly Thr Val Gly Thr Asp Thr Val Thr Ile Gly
                165                 170                 175

Gly Leu Ala Ile Lys Asn Gln Ala Val Glu Leu Ala Thr Lys Leu Ser
            180                 185                 190

Ala Gln Phe Glu Asp Gly Ala Gly Asp Gly Leu Leu Gly Leu Ala Trp
```

195 200 205

Gly Ser Ile Asn Thr Val Thr Pro Glu Pro Val Ala Thr Pro Val Met
210 215 220

Asn Met Ile Thr Gln Glu Asp Ile Pro Lys Asp Ala Glu Leu Phe Thr
225 230 235 240

Val Asn Leu Gly Ser Trp Arg Asp Ala Glu Asp Pro Asp Lys Gly Glu
245 250 255

Ser Phe Tyr Thr Phe Gly Tyr Ile Asp Lys Asp Ile Val Gly Ser Gln
260 265 270

Glu Ile Ser Tyr Thr Pro Ile Asp Asn Ser Gln Gly Phe Trp Met Phe
275 280 285

Asp Ser Thr Ser Ala Thr Val Asn Gly Lys Thr Ile Thr Gln Asp Lys
290 295 300

Asn Gln Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp
305 310 315 320

Glu Thr Cys Gln Ala Ile Tyr Asp Ala Ile Pro Gly Ser Thr Tyr Asp
325 330 335

Gln Thr Gln Gln Gly Tyr Thr Phe Pro Ser Ser Thr Ser Ala Asp Asp
340 345 350

Leu Pro Val Val Thr Phe Ala Val Gly Gly Lys Gln Phe Ala Val Gln
355 360 365

Lys Glu Asp Leu Gly Phe Ala Asp Ala Gly Asn Gly Met Val Tyr Gly
370 375 380

Gly Ile Gln Ser Arg Gly Ser Met Thr Phe Asp Ile Leu Gly Asp Thr
385 390 395 400

Phe Leu Lys Gly Ile Tyr Ala Ile Phe Asp Gln Gly Asn Val Arg Phe
405 410 415

Gly Ala Val Gln Arg Asn Glu Pro Thr Gln Asn Thr Ser Ala Pro Pro
420 425 430

Ser

<210> 32
<211> 722
<212> PRT
<213> Chaetomium globosum

<400> 32

```
Met Asp Asn Asp Phe Gln Leu Phe Thr Ser Leu Arg Tyr Asp Pro Ala
1               5                  10                  15

Leu Leu Gln Val Ser Val Arg Lys Leu Ser Tyr Gly Gly Trp Asn Ser
            20                  25                  30

Val Asn Ser Ser Pro Leu Tyr Met Leu Asp Tyr His Arg Asp Arg Met
        35                  40                  45

Leu Arg Ala Ala Thr His Trp Gly Trp Asn Ala Ala Val Asp Val Leu
    50                  55                  60

Gln Gly Asp Ser Gly Leu Lys Arg Leu Val Glu Leu Val Glu Ser Ser
65                  70                  75                  80

Ile Arg Glu Asp Gln Gln Ser Pro Leu Arg Val Arg Ile Ala Ile Thr
                85                  90                  95

Lys Asp Gly Glu Leu Ser Ile Thr Ser Gly Pro Val Pro Glu Thr Thr
            100                 105                 110

Leu Ala Asn Leu Phe Pro Glu Asn Leu Pro Pro Pro Glu Arg Ala Gly
        115                 120                 125

His Asp Gly Glu Gly Arg Asp Ile Pro Ser Lys Ser Pro Gly Tyr Glu
    130                 135                 140

Ile Leu Val Asp Thr Pro Ile Thr Thr Arg Ser Glu His Thr His Phe
145                 150                 155                 160

Lys Thr Thr Lys Arg Ala Ala Tyr Asp Gly Ala Arg Gln Arg Ala Gln
                165                 170                 175

Ile Ser Leu Phe Asp Leu Lys Glu Val Leu Ile Val Asn Glu Thr Asn
            180                 185                 190

Gly Ala Val Met Glu Gly Ser Thr Thr Thr Pro Tyr Phe Trp Arg Asp
        195                 200                 205

Gly Arg Trp Val Thr Pro Ala Val Ser Lys Glu Tyr Asn Leu Glu Asp
    210                 215                 220

Gly Ser Gly Gly Gln Ser Gly Thr Ser Arg Arg Trp Ala Leu Glu Arg
225                 230                 235                 240

Phe Val Asn Ile Ile Phe Ser Gly Arg Leu Glu Arg Pro Phe Pro Arg
                245                 250                 255

Met Asp Asp Ala Leu Phe Gln Thr His Ala Asp Leu Arg Lys Arg Leu
            260                 265                 270
```

```
Ala Leu His Lys Ile Lys Ala Ile Pro Asn Ser Asn Tyr Lys Arg His
        275                 280                 285

Gly Thr Lys Ser Tyr Val Ser Val Leu Asn Arg Phe Gly Phe Gln Pro
    290                 295                 300

Thr Gln Pro Gly Pro Tyr Tyr Gln Lys Phe Ile Lys Ser Asp Asp Ile
305                 310                 315                 320

Pro Pro Lys Ala Ala Pro Gly Val Arg Pro Gly Arg Ile Trp Ala Gly
                325                 330                 335

Leu Phe Lys Lys Val Glu Gly Lys Lys Glu Gly Gly Glu Val Thr Ala
            340                 345                 350

Glu Asp Gln Gln Asn Asp Ala Glu Tyr Leu Cys Glu Val Thr Ile Gly
        355                 360                 365

Thr Gly Val Gly Ser Asp Ile Gln Lys Val Met Leu Asp Phe Asp Thr
    370                 375                 380

Gly Ser Ala Asp Leu Trp Val Ser His Lys Lys Phe Asp His Thr Lys
385                 390                 395                 400

Ser Ser Ser Phe Gln Leu Ala Lys Asp Lys Thr Trp Lys Ile Gln Tyr
                405                 410                 415

Gly Asp Gly Ser Ser Ala Ser Gly Thr Val Gly Thr Asp Val Leu Val
            420                 425                 430

Leu Gly Gly Ile Ile Ile Lys Lys Gln Ala Ile Glu Ile Ala Asn Glu
        435                 440                 445

Met Ser Ala Gln Phe Ser Glu Gly Thr Met Asp Gly Leu Leu Gly Leu
    450                 455                 460

Ala Phe Ser Lys Ile Asn Thr Val Gln Ser Gly Gly Lys Pro Asp Pro
465                 470                 475                 480

Gln Leu Thr Pro Val Asp Asn Met Ile Ala Gln Glu Asp Ile Pro Lys
                485                 490                 495

Glu Ala Glu Leu Phe Thr Ser Ala Ile Tyr Ser Asn Arg Asp Glu Asp
            500                 505                 510

Arg Arg Ser Phe Tyr Thr Phe Gly Trp Ile Asp Glu Asp Leu Val Lys
        515                 520                 525

Ala Ser Gly Glu Glu Ile Ala Trp Thr Asn Ile Asp Lys Ser Glu Gly
    530                 535                 540
```

```
Phe Trp Met Phe Ser Ser Glu His Ala Ser Val Asn Gly Glu Arg Ile
545                 550                 555                 560

Thr Ile Glu Gly Asn Lys Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala
                565                 570                 575

Leu Val Thr Asp Lys Val Cys Ala Ala Leu Tyr Ser Lys Ile Pro Gly
            580                 585                 590

Ala Glu Tyr Asn Ala Glu Tyr Gln Gly Trp Thr Ile Pro Gln Ser Ile
        595                 600                 605

Pro Val Asp Glu Leu Pro Asp Phe Ser Val Ala Val Gly Gly Lys Glu
    610                 615                 620

Phe Val Ile Gln Lys Glu Asp Leu Ile Phe Val Pro Ala Asp Lys Lys
625                 630                 635                 640

Phe Phe Tyr Gly Gly Val Gln Ser Arg Gly Glu Asn Pro Phe Asp Ile
                645                 650                 655

Leu Gly Asn Thr Phe Leu Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly
            660                 665                 670

Asn Ser Arg Phe Gly Ala Val Arg Lys Ile Glu Pro Phe Gln His Pro
        675                 680                 685

Ile Lys Tyr Asn Leu Gln Pro Leu Ser Ser Asp Glu Arg Thr Lys Leu
    690                 695                 700

Gly Ile Lys Lys Gly Tyr Gly Asp Ile Asn Thr Ile Pro Phe Thr Glu
705                 710                 715                 720

Ser Ala
```

<210> 33
<211> 481
<212> PRT
<213> Neurospora tetrasperma

<400> 33

```
Met Gly Ser Met Tyr Gln Val Gln Ser Lys Leu Arg Gln Asp Leu Gly
1               5                   10                  15

Leu His Lys Val Gln Ala Val Arg Lys Pro Gly Arg Glu Leu Asn Gly
            20                  25                  30

Thr Lys Ala Tyr Val Ser Ala Met Ala Arg Tyr Gly Phe Asn Pro Thr
        35                  40                  45
```

```
Glu Glu Ser Arg Phe Phe His Leu Lys Lys Thr Asp Leu Thr Lys Glu
    50                  55                  60

Phe Gln Arg Arg Gly Tyr Thr Arg His Trp Glu Gln Leu Val Arg Thr
65                  70                  75                  80

Pro Gln Glu Arg Pro Asp Asp Pro Gln Thr Asp Asn Glu Pro Ile Pro
                85                  90                  95

Ala Glu Asp Gln Gln Tyr Asp Thr Gln Tyr Leu Cys Glu Ile Gly Ile
            100                 105                 110

Gly Thr Pro Gln Gln Lys Val Lys Leu Asp Phe Asp Thr Gly Ser Ala
        115                 120                 125

Asp Leu Trp Val Arg Cys Thr Asp Ser Ser Leu Leu His His Ala Asp
    130                 135                 140

Lys Lys Phe Asp Pro Lys Lys Ser Asp Thr Phe Gln Glu Ser Lys Thr
145                 150                 155                 160

Asp Gln Thr Trp Lys Ile Gln Tyr Gly Asp Gly Ser Thr Ala Ser Gly
                165                 170                 175

Thr Val Gly Thr Asp Val Ile Thr Val Gly Gly Leu Gln Ile Lys Asn
            180                 185                 190

Gln Ala Ile Glu Leu Ala Lys Lys Val Ser Ser Ala Phe Ser Ser Gly
        195                 200                 205

Glu Ala Asp Gly Leu Leu Gly Leu Ala Phe Ser Thr Ile Asn Thr Ile
    210                 215                 220

Glu Ser Asp Gly Lys Pro Asp Pro Gln Pro Thr Pro Val Glu Asn Met
225                 230                 235                 240

Ile Ser Gln Asp Asp Ile Pro Lys Glu Ala Glu Leu Phe Thr Ser Ala
                245                 250                 255

Phe Tyr Ser Ala Arg Asp Asp Lys Ser Glu Glu Lys Ser Phe Tyr Thr
            260                 265                 270

Phe Gly Trp Val Asp Glu Asp Leu Val Lys Ala Ser Gly Lys Asp Ile
        275                 280                 285

Thr Trp Thr Pro Ile Asp Asn Ser Glu Gly Phe Trp Lys Phe Pro Ser
    290                 295                 300

Glu Ser Ala Thr Val Asp Gly Glu Asn Val Ser Val Ser Gly Asn Ala
305                 310                 315                 320
```

```
Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp Thr Val
                325                 330                 335

Cys Lys Ala Leu Tyr Ala Lys Ile Pro Gly Ser Lys Tyr Ser Tyr Arg
            340                 345                 350

Tyr Gln Gly Tyr Leu Ile Pro Ser Thr Ile Thr Ala Asp Gln Leu Pro
        355                 360                 365

Gln Leu Ser Val Ala Val Gly Gly Glu Gln Phe Val Ile Gln Lys Glu
    370                 375                 380

Asp Leu Leu Leu Ala Pro Ala Asp Asp Asp His Trp Tyr Gly Gly Val
385                 390                 395                 400

Gln Ser Arg Gly Thr Met Pro Phe Asp Ile Leu Gly Asp Thr Phe Leu
                405                 410                 415

Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly Asn Asn Arg Phe Gly Ala
            420                 425                 430

Val Pro Lys Ile Glu Val Asn Gln His Thr Val Phe Pro Asn Thr Glu
        435                 440                 445

Ser Ser Pro Glu Ala Asn Ser Pro Glu Pro Ala Asp Lys Ile Gly Asp
    450                 455                 460

Val Ser Pro Val Glu Gln Val Lys Gly Ala Val Lys Ser Leu Lys Leu
465                 470                 475                 480

Leu
```

<210> 34
<211> 481
<212> PRT
<213> Neurospora crassa

<400> 34

```
Met Gly Ser Met Tyr Gln Val Gln Ser Lys Leu Arg Gln Asp Leu Gly
1               5                   10                  15

Leu His Lys Val Gln Ala Val Arg Lys Pro Gly Arg Glu Leu Asn Gly
            20                  25                  30

Thr Lys Ala Tyr Val Ser Ala Met Ala Arg Tyr Gly Phe Asn Pro Thr
        35                  40                  45

Glu Glu Ser Arg Phe Phe His Leu Lys Lys Thr Asp Leu Thr Lys Glu
    50                  55                  60
```

```
Phe Gln Arg Arg Gly Tyr Ile Arg His Trp Glu Gln Leu Val Arg Thr
65                  70                  75                  80

Pro Gln Glu Arg Pro Asp Asp Pro His Thr Asp Asn Glu Pro Val Pro
                85                  90                  95

Ala Glu Asp Gln Gln Tyr Asp Thr Gln Tyr Leu Cys Glu Ile Gly Ile
            100                 105                 110

Gly Thr Pro Gln Gln Lys Val Lys Leu Asp Phe Asp Thr Gly Ser Ala
        115                 120                 125

Asp Leu Trp Val Arg Cys Thr Asp Ser Ser Leu Leu His His Ala Asp
    130                 135                 140

Lys Lys Phe Asp Pro Lys Lys Ser Asp Thr Phe Gln Glu Ser Lys Thr
145                 150                 155                 160

Asp Gln Thr Trp Lys Ile Gln Tyr Gly Asp Gly Ser Thr Ala Ser Gly
                165                 170                 175

Thr Val Gly Thr Asp Val Ile Thr Val Gly Gly Leu Gln Ile Lys Asn
            180                 185                 190

Gln Ala Ile Glu Leu Ala Lys Lys Val Ser Ser Ala Phe Ser Ser Gly
        195                 200                 205

Glu Ala Asp Gly Leu Leu Gly Leu Ala Phe Ser Thr Ile Asn Thr Ile
    210                 215                 220

Glu Ser Asp Gly Lys Pro Asp Pro Gln Pro Thr Pro Val Glu Asn Met
225                 230                 235                 240

Ile Ser Gln Glu Asp Ile Pro Lys Glu Ala Glu Leu Phe Thr Ser Ala
                245                 250                 255

Phe Tyr Ser Ala Arg Asp Asp Lys Ser Glu Glu Lys Ser Phe Tyr Thr
            260                 265                 270

Phe Gly Trp Val Asp Glu Asp Leu Val Lys Ala Ser Gly Lys Asp Ile
        275                 280                 285

Thr Trp Thr Pro Ile Asp Asn Ser Glu Gly Phe Trp Lys Phe Pro Ser
    290                 295                 300

Glu Ser Ala Thr Val Asp Gly Asp Asn Val Ser Val Ser Gly Asn Thr
305                 310                 315                 320

Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Ser Asp Thr Val
                325                 330                 335
```

```
Cys Lys Ala Leu Tyr Ala Lys Ile Pro Gly Ser Lys Tyr Ser Tyr Arg
            340                 345                 350

Tyr Gln Gly Tyr Leu Ile Pro Ser Thr Ile Thr Ala Asp Gln Leu Pro
        355                 360                 365

Gln Leu Ser Val Ala Val Gly Gly Glu Gln Phe Val Ile Gln Asn Glu
    370                 375                 380

Asp Leu Leu Leu Ala Pro Ala Asp Asp Asp His Trp Tyr Gly Gly Val
385                 390                 395                 400

Gln Ser Arg Gly Thr Met Pro Phe Asp Ile Leu Gly Asp Thr Phe Leu
                405                 410                 415

Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly Asn Asn Arg Phe Gly Ala
            420                 425                 430

Val Pro Lys Ile Glu Val Asn Gln His Thr Val Phe Pro Asp Thr Glu
        435                 440                 445

Pro Ser Pro Glu Ala Ser Ser Pro Glu Pro Ala Asp Lys Val Gly Asp
    450                 455                 460

Val Ser Pro Val Glu Gln Val Lys Gly Ala Val Lys Ser Leu Lys Val
465                 470                 475                 480

Leu
```

<210> 35
<211> 459
<212> PRT
<213> Neosartorya fischeri

<400> 35

```
Met Ser Ser Cys Arg Phe Ser Asn Thr Leu Lys Thr Ala Ala Ala Ser
1               5                   10                  15

Leu Cys Asn Tyr Leu His Thr Thr Thr Thr Ile Thr Met Ala Thr Lys
            20                  25                  30

Ile Lys Leu Leu Pro Asn Pro Gln Tyr Arg Lys Ser Gly Thr Lys Ser
        35                  40                  45

Tyr Val His Leu Met Arg Lys Tyr Arg Phe Thr Pro Thr Lys Gly Gly
    50                  55                  60

Arg Tyr Phe Leu Ser Ser Ser Leu His Gln Thr Gly Arg Gln Tyr Thr
65                  70                  75                  80

Asn Leu Pro Val Gly Gly Arg Ala Arg Ile Gln His Val Leu Arg Lys
```

85 90 95

Arg Ile Ala Asp Thr Asp Glu Thr Ser Glu Val Gly Ala Asp Asp Val
100 105 110

Gln Asn Asp Thr Met Tyr Leu Ala Pro Val Ser Ile Gly Thr Pro Ala
115 120 125

Gln Thr Val Asn Leu Glu Phe Asp Thr Gly Ser Thr Asp Leu Trp Val
130 135 140

Trp Ser Thr Asn Leu Pro Ser Ala Thr Ile Ser Gln His Lys Thr Gly
145 150 155 160

Thr Ile Phe Asp Pro Ser Lys Ser Ser Thr Phe Lys Glu Gln Ser Gly
165 170 175

Ser Thr Trp Lys Ile Ser Tyr Asp Asp Gly Ser Phe Ala Ser Gly Thr
180 185 190

Val Gly Thr Asp Thr Ile Ser Leu Gly Gly Leu Lys Val Glu Asn Gln
195 200 205

Ala Ile Lys Leu Ala Asp Thr Leu Ser Ala Gln Phe Glu Gln Gly Thr
210 215 220

Cys Asp Gly Leu Leu Gly Leu Ala Phe Ser Asn Ile Asn Thr Val Lys
225 230 235 240

Pro Gln Ala Val Arg Thr Pro Val Glu Asn Met Ile Ala Gln Glu Asp
245 250 255

Ile Pro Lys Ser Ala Lys Leu Phe Thr Ala Lys Leu Gly Thr Trp Lys
260 265 270

Asp Ala Asn Glu Pro Asp Glu Gly Glu Pro Phe Tyr Thr Phe Gly Phe
275 280 285

Ile Asp Gln Asp Thr Val Thr Ala Ser Gly Glu Glu Val Tyr Tyr Thr
290 295 300

Pro Ile Asp Asn Ser Gln Gly Phe Trp Leu Phe Asp Ser Ala Ser Ala
305 310 315 320

Thr Val Asn Gly Lys Thr Ile Ala Arg Ser Gly Asn Lys Ala Ile Ala
325 330 335

Asp Thr Gly Thr Thr Leu Ala Leu Val Asp Asp Glu Thr Cys Gln Ala
340 345 350

Ile Tyr Asp Ala Ile Pro Gly Ala His Tyr Asp Asp Glu Ser Gln Gly

355 360 365

Tyr Ile Phe Pro Ser Asn Thr Thr Glu Asp Lys Leu Pro Val Val Ser
370 375 380

Phe Ala Val Gly Asp Lys Gln Phe Val Val Gln Arg Glu Asp Leu Gly
385 390 395 400

Phe Ala Glu Ala Lys Ser Gly Tyr Val Tyr Gly Gly Ile Gln Ser Arg
405 410 415

Gly Ser Met Thr Met Asp Ile Leu Gly Asp Thr Phe Leu Lys Gly Ile
420 425 430

Tyr Ala Ile Phe Asp Val Gly Asn Leu Arg Phe Gly Ala Val Gln Arg
435 440 445

Lys Glu Leu His Gln Asn Leu Ser Val Pro Gln
450 455

<210> 36
<211> 431
<212> PRT
<213> Penicillium marneffei

<400> 36

Met Thr Ser Lys Val Arg Val Leu Leu Asn Pro Lys Tyr Lys Arg Asn
1 5 10 15

Gly Thr Lys Ser Tyr Val His Leu Leu Arg Lys Tyr Gly Phe Asp Thr
20 25 30

Thr Leu Asp Gly Pro Tyr Phe His Val Ser His Val His Gln Gln Gly
35 40 45

Lys Phe Thr Thr Ala Gly Gln Lys Thr Val Gly Gly Arg Val Arg Ile
50 55 60

His Arg Thr Leu Gln Lys Lys Val Asn Gly Gln Ala Gly Asp Val Pro
65 70 75 80

Ala Asp Asp Val Gln Asn Asp Thr Met Tyr Leu Ala Gln Val Gly Ile
85 90 95

Gly Thr Pro Ala Gln Thr Leu Lys Leu Asp Phe Asp Ser Gly Ser Ala
100 105 110

Asp Leu Trp Val Trp Ser Thr Glu Leu Pro Ser Ser Thr Gln Ser Ser
115 120 125

Gly Ser Gly His Thr Ile Phe Asp Pro Ser Lys Ser Ser Ser Trp Asn
130 135 140

```
Ser Ser Ser Gly Gln Lys Trp Gln Ile Ser Tyr Gly Asp Gly Ser Ser
145                 150                 155                 160

Ala Ser Gly Asp Val Gly Thr Asp Thr Leu Asn Leu Gly Gly Ile Glu
                165                 170                 175

Val Lys Asn Gln Ala Ile Glu Ile Ala Lys Asn Leu Ser Ser Gln Phe
            180                 185                 190

Gln Gln Ser Glu Gly Asp Gly Leu Leu Gly Leu Ala Trp Gly Ser Ile
        195                 200                 205

Asn Thr Val Gln Pro Gln Ala Val Gln Thr Pro Met Gln Asn Leu Ile
    210                 215                 220

Ser Gln Asn Leu Leu Pro Ser Asn Ala Gln Leu Phe Thr Ala His Leu
225                 230                 235                 240

Gly Glu Ala Thr Ala Lys Thr Asp Asn Thr Phe Tyr Thr Phe Gly Tyr
                245                 250                 255

Ile Asp Gln Asp Thr Leu Asn Ala Thr Gly Asn Gln Ile Ala Tyr Ala
            260                 265                 270

Asp Val Asp Asn Asn Gln Gly Phe Trp Thr Phe Gln Ser Thr Ser Ala
        275                 280                 285

Thr Val Asn Gly Lys Thr Ile Asn Arg Ser Ala Asn Thr Ala Ile Ala
    290                 295                 300

Asp Thr Gly Thr Thr Leu Ala Leu Ile Asp Asp Asn Thr Leu Lys Thr
305                 310                 315                 320

Ile Tyr Asp Ala Ile Pro Gly Ser Lys Tyr Asp Ser Thr Gln Gln Gly
                325                 330                 335

Tyr Ile Phe Pro Ser Asn Thr Pro Thr Asp Lys Leu Pro Thr Val Thr
            340                 345                 350

Phe Ala Val Gly Gly Ser Gln Ile Ala Val His Lys Ser Ala Leu Gly
        355                 360                 365

Phe Ala Asp Ala Gly Asn Gly Tyr Val Tyr Gly Gly Ile Gln Ser Arg
    370                 375                 380

Gly Thr Asn Pro Phe Asp Ile Leu Gly Asp Thr Trp Leu Lys Gly Leu
385                 390                 395                 400

Tyr Ala Val Phe Asp Val Gly Asn Thr Arg Phe Gly Ala Ala Ala Lys
                405                 410                 415
```

```
Ala Asp Pro Asp Ala Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
            420                 425                 430


<210>  37
<211>  395
<212>  PRT
<213>  Trichoderma reesei

<400>  37

Met Lys Ser Ala Leu Leu Ala Ala Ala Ala Leu Val Gly Ser Ala Gln
1               5                   10                  15


Ala Gly Ile His Lys Met Lys Leu Gln Lys Val Ser Leu Glu Gln Gln
            20                  25                  30


Leu Glu Gly Ser Ser Ile Glu Ala His Val Gln Gln Leu Gly Gln Lys
        35                  40                  45


Tyr Met Gly Val Arg Pro Thr Ser Arg Ala Glu Val Met Phe Asn Asp
    50                  55                  60


Lys Pro Pro Lys Val Gln Gly Gly His Pro Val Pro Val Thr Asn Phe
65                  70                  75                  80


Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95


Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110


Ser Gln Ser Cys Asn Ser Ile Ala Cys Phe Leu His Ser Thr Tyr Asp
        115                 120                 125


Ser Ser Ser Ser Ser Thr Tyr Lys Pro Asn Gly Ser Asp Phe Glu Ile
    130                 135                 140


His Tyr Gly Ser Gly Ser Leu Thr Gly Phe Ile Ser Asn Asp Val Val
145                 150                 155                 160


Thr Ile Gly Asp Leu Lys Ile Lys Gly Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175


Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190


Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Val Pro Pro Phe
        195                 200                 205


Tyr Gln Met Val Asn Gln Lys Leu Ile Asp Glu Pro Val Phe Ala Phe
    210                 215                 220
```

```
Tyr Leu Gly Ser Ser Asp Glu Gly Ser Glu Ala Val Phe Gly Gly Val
225                 230                 235                 240

Asp Asp Ala His Tyr Glu Gly Lys Ile Glu Tyr Ile Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ala Phe Gly Asp Glu
            260                 265                 270

Val Ala Glu Leu Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Val Leu Pro Ser Gly Leu Ala Glu Leu Leu Asn Ala Glu Ile
    290                 295                 300

Gly Ala Lys Lys Gly Phe Gly Gly Gln Tyr Thr Val Asp Cys Ser Lys
305                 310                 315                 320

Arg Asp Ser Leu Pro Asp Ile Thr Phe Ser Leu Ala Gly Ser Lys Tyr
                325                 330                 335

Ser Leu Pro Ala Ser Asp Tyr Ile Ile Glu Met Ser Gly Asn Cys Ile
            340                 345                 350

Ser Ser Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu Val
        355                 360                 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
    370                 375                 380

Gly Arg Asp Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395


<210>  38
<211>  395
<212>  PRT
<213>  Trichoderma virens

<400>  38

Met Lys Ser Ala Leu Ile Ala Ala Ala Ala Leu Val Gly Ser Ala Gln
1               5                   10                  15

Ala Gly Val His Lys Met Lys Leu Gln Lys Val Ser Leu Glu Gln Gln
            20                  25                  30

Leu Glu Gly Ser Thr Ile Glu Ser Gln Val Gln His Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Val Arg Pro Thr Ser Arg Ala Asp Val Met Phe Asn Asp
    50                  55                  60
```

```
Lys Leu Pro Lys Ile Gln Gly Gly His Pro Val Pro Val Thr Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Gln Ser Cys Asn Ser Ile Ala Cys Phe Leu His Ala Thr Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Gln Asn Gly Ser Asp Phe Glu Ile
    130                 135                 140

His Tyr Gly Ser Gly Ser Leu Thr Gly Phe Ile Ser Asn Asp Val Val
145                 150                 155                 160

Thr Ile Gly Asp Leu Lys Ile Gln Lys Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Ile Pro Pro Phe
        195                 200                 205

Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Ser Gly Asp Glu Gly Ser Glu Ala Val Phe Gly Gly Val
225                 230                 235                 240

Asp Glu Ser His Tyr Ser Gly Lys Ile Glu Tyr Ile Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ala Phe Gly Asp Glu
            260                 265                 270

Val Ala Glu Leu Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Val Leu Pro Ser Gly Leu Ala Glu Leu Leu Asn Ala Glu Ile
    290                 295                 300

Gly Ala Lys Lys Gly Phe Gly Gly Gln Tyr Thr Val Asp Cys Ser Lys
305                 310                 315                 320

Arg Asp Ser Leu Pro Asp Ile Thr Phe Ser Leu Ala Gly Ser Lys Tyr
                325                 330                 335
```

Ser Leu Pro Ala Thr Asp Tyr Ile Ile Glu Met Ser Gly Asn Cys Ile
340 345 350

Ser Ser Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu Val
355 360 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
370 375 380

Gly Lys Asn Ala Val Gly Leu Ala Lys Ala Lys
385 390 395

<210> 39
<211> 395
<212> PRT
<213> Trichoderma atroviride

<400> 39

Met Lys Ser Ala Leu Ile Ala Ala Ala Ala Leu Val Gly Ser Ala Gln
1 5 10 15

Ala Gly Val His Lys Met Lys Leu Gln Lys Val Ser Leu Glu Gln Gln
20 25 30

Leu Glu Gly Ser Ser Ile Glu Ala Gln Val Gln Gln Leu Gly Gln Lys
35 40 45

Tyr Met Gly Val Arg Pro Thr Ser Arg Val Asp Val Met Phe Asn Asp
50 55 60

Asn Val Pro Lys Val Lys Gly Gly His Pro Val Pro Val Thr Asn Phe
65 70 75 80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Ser Pro Pro Gln
85 90 95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
100 105 110

Ser Gln Ser Cys Asn Ser Ile Ala Cys Phe Leu His Ser Thr Tyr Asp
115 120 125

Ser Ser Ser Ser Ser Ser Tyr Lys Lys Asn Gly Ser Asp Phe Glu Ile
130 135 140

His Tyr Gly Ser Gly Ser Leu Thr Gly Phe Ile Ser Asn Asp Val Val
145 150 155 160

Thr Ile Gly Asp Leu Gln Ile Lys Gly Gln Asp Phe Ala Glu Ala Thr
165 170 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu

180 185 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Val Pro Pro Phe
195 200 205

Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
210 215 220

Tyr Leu Gly Ser Gly Asp Glu Gly Ser Val Ala Thr Phe Gly Gly Val
225 230 235 240

Asp Glu Ser His Tyr Ser Gly Lys Ile Glu Tyr Ile Pro Leu Arg Arg
245 250 255

Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ala Phe Gly Asp Glu
260 265 270

Val Ala Glu Leu Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
275 280 285

Leu Asn Val Leu Pro Ser Gly Ile Ala Glu Leu Leu Asn Ala Glu Ile
290 295 300

Gly Ala Lys Lys Gly Tyr Gly Gly Gln Tyr Thr Ile Asp Cys Ala Lys
305 310 315 320

Arg Asp Ser Leu Pro Asp Ile Thr Phe Ser Leu Ala Gly Ser Lys Tyr
325 330 335

Ser Leu Pro Ala Ser Asp Tyr Ile Leu Glu Val Ser Gly Ser Cys Ile
340 345 350

Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu Val
355 360 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
370 375 380

Gly Lys Gly Ala Val Gly Leu Ala Lys Ala Lys
385 390 395

<210> 40
<211> 395
<212> PRT
<213> Trichoderma aureoviride

<400> 40

Met Lys Ser Ala Leu Ile Ala Ala Ala Ala Leu Val Gly Ser Ala Gln
1 5 10 15

Ala Gly Val His Lys Met Lys Leu Gln Lys Val Ser Leu Glu Gln Gln
20 25 30

```
Leu Glu Gly Ser Ser Ile Glu Ala Gln Val Gln Gln Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Val Arg Pro Thr Ser Arg Ala Asp Val Met Phe Asn Asp
    50                  55                  60

Asn Leu Pro Lys Ile Lys Gly Gly His Pro Val Pro Val Thr Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Ser Pro Pro Gln
                85                  90                  95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Gln Ser Cys Asn Ser Ile Ala Cys Phe Leu His Ser Thr Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Lys Asn Gly Ser Asp Phe Glu Ile
    130                 135                 140

His Tyr Gly Ser Gly Ser Leu Thr Gly Phe Ile Ser Asn Asp Val Val
145                 150                 155                 160

Thr Ile Gly Asp Leu Lys Ile Lys Gly Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Val Pro Pro Phe
        195                 200                 205

Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asn Ser Asp Glu Gly Ser Val Ala Thr Phe Gly Gly Val
225                 230                 235                 240

Asp Glu Ser His Phe Ser Gly Lys Ile Glu Tyr Ile Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ala Phe Gly Asp Glu
            260                 265                 270

Val Ala Glu Leu Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Val Leu Pro Ser Gly Ile Ala Glu Leu Leu Asn Ala Glu Ile
    290                 295                 300
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```
Gly Ala Lys Lys Gly Tyr Gly Gly Gln Tyr Thr Ile Asp Cys Ala Lys
305                 310                 315                 320

Arg Asp Ser Leu Pro Asp Ile Thr Phe Ser Leu Ala Gly Ser Lys Tyr
                325                 330                 335

Ser Leu Pro Ala Ser Asp Tyr Ile Leu Glu Val Ser Gly Ser Cys Ile
            340                 345                 350

Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu Val
        355                 360                 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
    370                 375                 380

Gly Lys Gly Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395


<210>  41
<211>  398
<212>  PRT
<213>  Aspergillus niger

<400>  41

Met Lys Ser Ala Ser Leu Leu Thr Ala Ser Val Leu Leu Gly Cys Ala
1               5                   10                  15

Ser Ala Glu Val His Lys Leu Lys Leu Asn Lys Val Pro Leu Glu Glu
            20                  25                  30

Gln Leu Tyr Thr His Asn Ile Asp Ala His Val Arg Ala Leu Gly Gln
        35                  40                  45

Lys Tyr Met Gly Ile Arg Pro Ser Ile His Lys Glu Leu Val Glu Glu
    50                  55                  60

Asn Pro Ile Asn Asp Met Ser Arg His Asp Val Leu Val Asp Asn Phe
65                  70                  75                  80

Leu Asn Ala Gln Tyr Phe Ser Glu Ile Glu Leu Gly Thr Pro Pro Gln
                85                  90                  95

Lys Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Ser Glu Cys Ser Ser Ile Ala Cys Tyr Leu His Asn Lys Tyr Asp
        115                 120                 125

Ser Ser Ala Ser Ser Thr Tyr His Lys Asn Gly Ser Glu Phe Ala Ile
    130                 135                 140
```

```
Lys Tyr Gly Ser Gly Ser Leu Ser Gly Phe Ile Ser Gln Asp Thr Leu
145                 150                 155                 160

Lys Ile Gly Asp Leu Lys Val Lys Gly Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Asn Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Asn Met Leu Asp Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asp Thr Asn Lys Glu Gly Asp Glu Ser Val Ala Thr Phe
225                 230                 235                 240

Gly Gly Val Asp Lys Asp His Tyr Thr Gly Glu Leu Ile Lys Ile Pro
                245                 250                 255

Leu Arg Arg Lys Ala Tyr Trp Glu Val Glu Leu Asp Ala Ile Ala Leu
            260                 265                 270

Gly Asp Asp Val Ala Glu Met Glu Asn Thr Gly Val Ile Leu Asp Thr
        275                 280                 285

Gly Thr Ser Leu Ile Ala Leu Pro Ala Asp Leu Ala Glu Met Ile Asn
    290                 295                 300

Ala Gln Ile Gly Ala Lys Lys Gly Trp Thr Gly Gln Tyr Thr Val Asp
305                 310                 315                 320

Cys Asp Lys Arg Ser Ser Leu Pro Asp Val Thr Phe Thr Leu Ala Gly
                325                 330                 335

His Asn Phe Thr Ile Ser Ser Tyr Asp Tyr Thr Leu Glu Val Gln Gly
            340                 345                 350

Ser Cys Val Ser Ala Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly
        355                 360                 365

Pro Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Lys Trp Tyr Ser Val
    370                 375                 380

Tyr Asp Leu Gly Asn Ser Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395

<210>  42
<211>  398
<212>  PRT
```

<213> Aspergillus fumigatus

<400> 42

```
Met Lys Ser Thr Ser Leu Leu Thr Ala Ser Val Leu Leu Gly Ser Ala
1               5                  10                  15

Ser Ala Ala Val His Lys Leu Lys Leu Asn Lys Val Pro Leu Asp Glu
            20                  25                  30

Gln Leu Tyr Thr His Asn Ile Asp Ala His Val Arg Ala Leu Gly Gln
        35                  40                  45

Lys Tyr Met Gly Ile Arg Pro Asn Val His Gln Glu Leu Leu Glu Glu
    50                  55                  60

Asn Ser Leu Asn Asp Met Ser Arg His Asp Val Leu Val Asp Asn Phe
65                  70                  75                  80

Leu Asn Ala Gln Tyr Phe Ser Glu Ile Ser Leu Gly Thr Pro Pro Gln
                85                  90                  95

Lys Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Gly Ser Asp Cys Ser Ser Ile Ala Cys Phe Leu His Asn Lys Tyr Asp
        115                 120                 125

Ser Ser Ala Ser Ser Thr Tyr Lys Ala Asn Gly Thr Glu Phe Ala Ile
    130                 135                 140

Lys Tyr Gly Ser Gly Glu Leu Ser Gly Phe Val Ser Gln Asp Thr Leu
145                 150                 155                 160

Gln Ile Gly Asp Leu Lys Val Val Lys Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Asn Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Asn Met Leu Asp Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asp Thr Asn Lys Glu Gly Asp Asn Ser Glu Ala Ser Phe
225                 230                 235                 240

Gly Gly Val Asp Lys Asn His Tyr Thr Gly Glu Leu Thr Lys Ile Pro
                245                 250                 255
```

```
Leu Arg Arg Lys Ala Tyr Trp Glu Val Asp Phe Asp Ala Ile Ala Leu
            260                 265                 270

Gly Asp Asn Val Ala Glu Leu Glu Asn Thr Gly Ile Ile Leu Asp Thr
        275                 280                 285

Gly Thr Ser Leu Ile Ala Leu Pro Ser Thr Leu Ala Asp Leu Leu Asn
    290                 295                 300

Lys Glu Ile Gly Ala Lys Lys Gly Phe Thr Gly Gln Tyr Ser Ile Glu
305                 310                 315                 320

Cys Asp Lys Arg Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Ala Gly
                325                 330                 335

His Asn Phe Thr Ile Gly Pro Tyr Asp Tyr Thr Leu Glu Val Gln Gly
            340                 345                 350

Ser Cys Ile Ser Ser Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly
        355                 360                 365

Pro Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Lys Trp Tyr Ser Val
    370                 375                 380

Tyr Asp Leu Gly Asn Asn Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395


<210>  43
<211>  398
<212>  PRT
<213>  Aspergillus clavatus

<400>  43

Met Lys Thr Val Ser Leu Leu Thr Ala Ser Ala Leu Leu Gly Cys Ala
1               5                   10                  15

Ser Ala Glu Val His Lys Leu Lys Leu Asn Lys Val Pro Leu Glu Glu
            20                  25                  30

Gln Leu Tyr Thr His Asn Ile Asp Ala His Val Arg Ala Leu Gly Gln
        35                  40                  45

Lys Tyr Met Gly Ile Arg Pro Asn Ile His Lys Glu Leu Leu Glu Glu
    50                  55                  60

Asn Ser Phe Asn Asp Met Ser Arg His Asp Val Leu Val Asp Asn Phe
65                  70                  75                  80

Leu Asn Ala Gln Tyr Phe Ser Glu Ile Glu Leu Gly Thr Pro Pro Gln
                85                  90                  95

Lys Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
```

```
            100                 105                 110

Ser Ser Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Thr Lys Tyr Asp
        115                 120                 125

Ser Ser Ala Ser Ser Thr Tyr Lys Lys Asn Gly Thr Glu Phe Ala Ile
    130                 135                 140

Arg Tyr Gly Ser Gly Glu Leu Ser Gly Phe Val Ser Gln Asp Asn Leu
145                 150                 155                 160

Lys Ile Gly Asp Leu Lys Ile Glu Lys Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Asn Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Asn Met Leu Asn Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asp Ala Asn Lys Glu Gly Asp Ser Ser Val Ala Thr Phe
225                 230                 235                 240

Gly Gly Ile Asp Lys Asp His Phe Thr Gly Glu Leu Thr Lys Ile Pro
                245                 250                 255

Leu Arg Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Leu
            260                 265                 270

Gly Asp Asn Val Ala Glu Leu Asp Asn Thr Gly Val Ile Leu Asp Thr
        275                 280                 285

Gly Thr Ser Leu Ile Ala Leu Pro Ser Thr Leu Ala Asp Leu Leu Asn
    290                 295                 300

Lys Glu Ile Gly Ala Lys Lys Gly Phe Thr Gly Gln Tyr Ser Val Glu
305                 310                 315                 320

Cys Asp Lys Arg Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Ser Gly
                325                 330                 335

His Asn Phe Thr Ile Gly Pro Tyr Asp Tyr Thr Leu Glu Val Gln Gly
            340                 345                 350

Ser Cys Ile Ser Ser Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly
        355                 360                 365

Pro Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Lys Tyr Tyr Ser Val
```

370 375 380

Tyr Asp Leu Gly Asn His Ala Val Gly Leu Ala Lys Ala Lys
385 390 395

<210> 44
<211> 396
<212> PRT
<213> Nectria haematococca

<400> 44

Met Lys Ser Ala Leu Leu Ala Ala Ala Ala Leu Leu Gly Ser Ala Gln
1 5 10 15

Ala Gly Val His Lys Met Lys Ile Gln Lys Val Pro Leu Ala Glu Gln
20 25 30

Leu Ala Thr Thr Ser Ile Glu Thr His Ile Gln Asn Leu Gly Gln Lys
35 40 45

Tyr Leu Gly Ser Ala Arg Pro Lys Asn Gln Ala Asp Tyr Ala Phe Ser
50 55 60

Thr Glu Ala Ile Asn Val Glu Gly Gly His Pro Val Pro Ile Ser Asn
65 70 75 80

Phe Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Asn Pro Pro
85 90 95

Gln Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
100 105 110

Pro Ser Gln Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys Tyr
115 120 125

Asp Ser Ser Ala Ser Ser Thr Tyr Lys Gln Asn Gly Ser Glu Phe Glu
130 135 140

Ile His Tyr Gly Ser Gly Ser Leu Ser Gly Phe Ile Ser Asn Asp Asp
145 150 155 160

Val Ser Ile Gly Asp Leu Lys Ile Lys Gly Gln Asp Phe Ala Glu Ala
165 170 175

Thr Lys Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
180 185 190

Leu Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn His Ile Val Pro Pro
195 200 205

Phe Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Asp Pro Val Phe Ala
210 215 220

```
Phe Tyr Leu Ala Asp Gln Glu Gly Glu Ser Glu Val Val Phe Gly Gly
225                 230                 235                 240

Val Asp Lys Ser His Tyr Glu Gly Asp Ile Glu Tyr Ile Pro Leu Arg
                245                 250                 255

Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Leu Gly Asp
            260                 265                 270

Glu Val Ala Glu Gln Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr
        275                 280                 285

Ser Leu Asn Val Leu Pro Ser Ala Leu Ala Glu Leu Leu Asn Lys Glu
    290                 295                 300

Ile Gly Ala Lys Lys Gly Tyr Asn Gly Gln Tyr Thr Val Glu Cys Asp
305                 310                 315                 320

Lys Arg Gln Thr Leu Pro Asp Ile Thr Phe Thr Leu Ala Gly Ser Asn
                325                 330                 335

Tyr Ser Leu Pro Ala Thr Asp Tyr Ile Leu Glu Val Ser Gly Ser Cys
            340                 345                 350

Ile Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu
        355                 360                 365

Val Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp
    370                 375                 380

Leu Gly Lys Asn Ala Val Gly Leu Ala Arg Ser Lys
385                 390                 395


<210>  45
<211>  399
<212>  PRT
<213>  Glomerella graminicola

<400>  45

Met Lys Ser Thr Leu Leu Thr Ala Ala Val Leu Leu Gly Ala Ala Gln
1               5                   10                  15

Ala Glu Val His Lys Leu Lys Leu Lys Lys Val Pro Leu Glu Glu Gln
            20                  25                  30

Leu Asn Ala Val Pro Ile Glu His Gln Val Arg Gln Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Thr Arg Pro Asn Asn His Ala Asp Ala Met Phe Asn Gln
    50                  55                  60
```

```
Lys Pro Ile Gln Thr Asp Gly Glu His Pro Val Pro Val Ser Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Gln Ile Gly Thr Pro Pro Gln
                85                  90                  95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Gln Gln Cys Gly Ser Ile Ala Cys Tyr Leu His Thr Lys Tyr Asp
        115                 120                 125

Ser Ser Ala Ser Ser Thr Tyr Lys Ser Asn Gly Ser Ser Phe Glu Ile
    130                 135                 140

His Tyr Gly Ser Gly Ser Leu Thr Gly Phe Val Ser Gln Asp Asp Val
145                 150                 155                 160

Ser Ile Gly Asp Leu Lys Ile Lys Lys Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Asn Leu Val Asn Gln Lys Ala Ile Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asp Thr Asn Glu Glu Gly Asp Glu Ser Glu Ala Thr Phe
225                 230                 235                 240

Gly Gly Leu Asp Glu Ser His Tyr Glu Gly Lys Val Thr Tyr Ile Pro
                245                 250                 255

Leu Arg Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ser Leu
            260                 265                 270

Gly Asp Glu Thr Ala Asp Leu Glu Gly His Gly Ala Ile Leu Asp Thr
        275                 280                 285

Gly Thr Ser Leu Asn Val Leu Pro Ser Ala Leu Ala Glu Leu Leu Asn
    290                 295                 300

Lys Glu Ile Gly Ala Lys Lys Gly Tyr Asn Gly Gln Tyr Ser Val Glu
305                 310                 315                 320

Cys Ser Lys Arg Asp Glu Leu Pro Asp Ile Thr Phe Thr Leu Ala Gly
                325                 330                 335
```

```
Tyr Asn Phe Ser Ile Ser Ala Tyr Asp Tyr Val Leu Glu Val Ser Gly
            340                 345                 350

Ser Cys Ile Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly
        355                 360                 365

Pro Leu Val Ile Leu Gly Asp Ala Phe Leu Arg Arg Trp Tyr Ser Val
    370                 375                 380

Tyr Asp Leu Gly Lys Asn Ala Val Gly Leu Ala Lys Ala Lys Lys
385                 390                 395
```

<210> 46
<211> 395
<212> PRT
<213> Cordyceps militaris

<400> 46

```
Met Lys Ser Ala Leu Ile Ala Ala Ala Val Leu Ala Gly Ser Ala His
1               5                   10                  15

Ala Gly Ile His Lys Met Lys Leu Gln Lys Ile Pro Leu Ala Glu Gln
            20                  25                  30

Leu Val Gly Ala Ser Phe Glu Ala Gln Ala Gln Gln Leu Gly Gln Lys
        35                  40                  45

Tyr Leu Gly Ala Arg Pro Ala Ser Arg Ala Asp Ile Ile Phe Asn Ala
    50                  55                  60

Lys Val Ala Glu Ser Lys Asn Gly His Leu Val Pro Val Ser Asn Phe
65                  70                  75                  80

Ala Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Gln Ser Cys Ser Ser Ile Ala Cys Phe Leu His Ser Thr Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Lys Asn Gly Ser Asp Phe Glu Ile
    130                 135                 140

His Tyr Gly Ser Gly Ser Leu Thr Gly Tyr Val Ser Asn Asp Val Val
145                 150                 155                 160

Arg Ile Gly Asp Leu Thr Ile Lys Asn Thr Asp Phe Ala Glu Ala Thr
                165                 170                 175
```

```
Asn Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn His Met Val Pro Pro Phe
        195                 200                 205

Tyr Gln Met Ile Lys Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Ser Glu Glu Glu Gly Ser Glu Ala Val Phe Gly Gly Val
225                 230                 235                 240

Asp Lys Asn His Tyr Glu Gly Lys Ile Glu Tyr Leu Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Phe Asp Ala Ile Ala Phe Gly Lys Glu
            260                 265                 270

Val Ala Glu Leu Glu Asn Thr Gly Val Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Thr Leu Pro Ser Asp Leu Ala Glu Leu Leu Asn Lys Glu Ile
    290                 295                 300

Gly Ala Lys Lys Gly Phe Gly Gly Gln Tyr Thr Ile Asp Cys Ala Ala
305                 310                 315                 320

Arg Asp Lys Leu Pro Asp Ile Thr Phe Thr Leu Ala Gly Ser Asn Tyr
                325                 330                 335

Thr Leu Pro Ala Thr Asp Tyr Ile Leu Glu Leu Gly Gly Ser Cys Val
            340                 345                 350

Ser Thr Phe Thr Pro Leu Asp Met Pro Pro Pro Ala Gly Pro Leu Ala
        355                 360                 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
    370                 375                 380

Asn Lys Asn Ala Val Gly Leu Ala Arg Ala Lys
385                 390                 395


<210>  47
<211>  396
<212>  PRT
<213>  Gibberella zeae

<400>  47

Met Lys Ser Ala Leu Leu Thr Ala Ala Ala Leu Leu Gly Ser Ala Gln
1               5                   10                  15

Ala Gly Val His Lys Met Lys Leu Asn Lys Val Pro Leu Ala Asp Gln
```

```
            20                  25                  30

Leu Ala Met Asn Ser Val Glu Asp His Leu Gln Ser Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Ala Ala Arg Pro Lys Asn Ala Ala Asp Tyr Ala Phe Ala
    50                  55                  60

Thr Asn Val Pro Ser Val Glu Gly Gly His Pro Val Pro Val Ser Asn
65                  70                  75                  80

Phe Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro
                85                  90                  95

Gln Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
            100                 105                 110

Pro Ser Gln Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys Tyr
        115                 120                 125

Asp Ser Ser Ala Ser Ser Thr Tyr Lys Lys Asn Gly Ser Glu Phe Glu
    130                 135                 140

Ile His Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Asn Asp Val
145                 150                 155                 160

Val Ser Ile Gly Asp Leu Lys Ile Lys Asp Gln Asp Phe Ala Glu Ala
                165                 170                 175

Thr Lys Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
            180                 185                 190

Leu Gly Leu Gly Tyr Asp Arg Ile Ala Val Asn Gly Met Val Pro Pro
        195                 200                 205

Phe Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala
    210                 215                 220

Phe Tyr Leu Asp Gly Gln Glu Gly Gln Ser Glu Ala Thr Phe Gly Gly
225                 230                 235                 240

Val Asp Lys Ser Lys Tyr Thr Gly Asp Leu Glu Tyr Ile Pro Leu Arg
                245                 250                 255

Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Phe Gly Asp
            260                 265                 270

Glu Val Ala Glu Gln Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr
        275                 280                 285

Ser Leu Asn Val Leu Pro Ser Ala Leu Ala Glu Leu Leu Asn Lys Glu
```

290 295 300

Ile Gly Ala Lys Lys Gly Tyr Asn Gly Gln Tyr Thr Ile Glu Cys Asp
305 310 315 320

Lys Val Ser Ser Leu Pro Asp Ile Thr Phe Thr Leu Ala Gly Ser Asn
325 330 335

Tyr Ser Leu Pro Ser Thr Asp Tyr Ile Leu Glu Val Gln Gly Ser Cys
340 345 350

Ile Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu
355 360 365

Val Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp
370 375 380

Leu Gly Lys Asn Ala Val Gly Leu Ala Arg Ala Lys
385 390 395

<210> 48
<211> 395
<212> PRT
<213> Metarhizium anisopliae

<400> 48

Met Lys Ser Ala Leu Ile Ala Ala Ala Ala Leu Ala Gly Thr Ala His
1 5 10 15

Ala Gly Val His Lys Met Lys Leu Gln Lys Ile Ser Leu Glu Glu Gln
20 25 30

Leu Ala Gly Ala Ser Ile Glu Gln His Val Arg Ala Leu Gly Gln Lys
35 40 45

Tyr Leu Gly Ala Arg Pro Ala Ser Arg Ala Ser Val Met Phe Asn Thr
50 55 60

Lys Ala Pro Gln Val Ala Glu Gly His Pro Val Pro Val Ser Asn Phe
65 70 75 80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Val Gly Thr Pro Pro Gln
85 90 95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
100 105 110

Ser Gln Ser Cys Ser Ser Ile Ala Cys Tyr Leu His Ser Thr Tyr Asp
115 120 125

Ser Ser Ser Ser Ser Thr Tyr Lys Lys Asn Gly Ser Ser Phe Glu Ile
130 135 140

```
Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Val Val
145                 150                 155                 160

Thr Ile Gly Asp Leu Lys Ile Lys Asp Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Lys Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Leu Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Gln Met Ile Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Ser Ser Glu Glu Gly Ser Glu Ala Val Phe Gly Gly Ile
225                 230                 235                 240

Asp Lys Asp His Tyr Thr Gly Lys Ile Glu Tyr Ile Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Ile His Ser Ile Ala Phe Gly Asp Asp
            260                 265                 270

Val Ala Glu Leu Asp Arg Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Val Leu Pro Ser Thr Leu Ala Glu Leu Leu Asn Lys Glu Ile
    290                 295                 300

Gly Ala Lys Lys Ser Trp Asn Gly Gln Tyr Thr Val Asp Cys Ala Gln
305                 310                 315                 320

Ile Lys Ser Leu Pro Asp Ile Val Phe Asn Leu Ala Gly Ser Asn Tyr
                325                 330                 335

Ser Leu Pro Ala Ser Asp Tyr Ile Leu Glu Leu Gln Gly Thr Cys Ile
            340                 345                 350

Ser Thr Phe Gln Gly Met Asp Ile Pro Glu Pro Ala Gly Pro Leu Ile
        355                 360                 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr Asp Leu
    370                 375                 380

Gly Arg Asn Ala Val Gly Leu Ala Arg Ser Lys
385                 390                 395
```

<210> 49
<211> 396

<212> PRT
<213> Fusarium oxysporum

<400> 49

```
Met Lys Gly Ala Leu Leu Thr Ala Ala Ala Leu Leu Gly Ser Ala Gln
1               5                  10                  15

Ala Gly Val His Lys Met Lys Leu Asn Lys Val Pro Leu Ala Asp Gln
            20                  25                  30

Leu Ala Thr Asn Ser Val Glu Asp His Leu Gln Ser Leu Gly Gln Lys
        35                  40                  45

Tyr Leu Gly Ala Ser Arg Pro Lys Asn Ala Ala Asp Tyr Ala Phe Ala
    50                  55                  60

Thr Asn Thr Val Asn Val Glu Gly Gly His Pro Val Pro Val Ser Asn
65                  70                  75                  80

Phe Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro
                85                  90                  95

Gln Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
            100                 105                 110

Pro Ser Gln Gln Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys Tyr
        115                 120                 125

Asp Ser Ser Ala Ser Ser Thr Tyr Lys Glu Asn Gly Thr Glu Phe Glu
    130                 135                 140

Ile His Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Asn Asp Val
145                 150                 155                 160

Val Ser Ile Gly Asp Leu Glu Ile Lys Asp Gln Asp Phe Ala Glu Ala
                165                 170                 175

Thr Lys Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
            180                 185                 190

Leu Gly Leu Gly Tyr Asp Arg Ile Ala Val Asn Gly Met Val Pro Pro
        195                 200                 205

Phe Tyr Gln Met Val Asn Gln Lys Leu Leu Asp Glu Pro Val Phe Ala
    210                 215                 220

Phe Tyr Leu Asp Asp Gln Glu Gly Glu Ser Glu Ala Thr Phe Gly Gly
225                 230                 235                 240

Ile Asp Lys Ser Lys Phe Thr Gly Asp Ile Glu Tyr Ile Pro Leu Arg
                245                 250                 255
```

```
Arg Lys Ala Tyr Trp Glu Val Asp Leu Glu Ala Ile Ala Phe Gly Asp
            260                 265                 270

Glu Val Ala Glu Gln Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr
        275                 280                 285

Ser Leu Asn Val Leu Pro Ser Ala Leu Ala Glu Leu Leu Asn Lys Glu
    290                 295                 300

Ile Gly Ala Lys Lys Gly Tyr Asn Gly Gln Tyr Thr Ile Glu Cys Asp
305                 310                 315                 320

Lys Arg Ala Ser Leu Pro Asp Ile Thr Phe Asn Leu Ala Gly Ser Asn
                325                 330                 335

Tyr Ser Leu Pro Ala Thr Asp Tyr Ile Leu Glu Val Gln Gly Ser Cys
            340                 345                 350

Ile Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu
        355                 360                 365

Val Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp
    370                 375                 380

Leu Gly Lys Asn Ala Val Gly Leu Ala Arg Ala Lys
385                 390                 395


<210>  50
<211>  395
<212>  PRT
<213>  Metarhizium acridum

<400>  50

Met Lys Ser Ala Leu Ile Ala Ala Ala Ala Leu Ala Gly Thr Ala His
1               5                   10                  15

Ala Gly Val His Lys Met Lys Leu Gln Lys Ile Ser Leu Lys Glu Gln
            20                  25                  30

Leu Ala Asp Ala Pro Ile Glu Gln His Val Gln Ala Leu Gly Gln Lys
        35                  40                  45

Tyr Ile Gly Ala Arg Pro Pro Ser Arg Ala Ser Val Met Phe Asn Thr
    50                  55                  60

Lys Ala Pro Gln Val Ala Gly Gly His Pro Val Pro Val Ser Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Ser Pro Pro Gln
                85                  90                  95
```

```
Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Gln Ser Cys Asn Ser Ile Ala Cys Tyr Leu His Ser Thr Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Lys Asn Gly Ser Ser Phe Glu Ile
    130                 135                 140

Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Val Val
145                 150                 155                 160

Ser Ile Gly Asp Leu Lys Ile Glu His Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Lys Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Leu Ser Val Asn Lys Ile Val Pro Pro Phe
        195                 200                 205

Tyr Gln Met Ile Asp Gln Lys Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Ser Lys Glu Glu Gly Ser Glu Ala Val Phe Gly Gly Ile
225                 230                 235                 240

Asp Lys Asn His Tyr Thr Gly Glu Leu Glu Tyr Leu Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Ile Asn Ser Ile Ala Leu Gly Asp Glu
            260                 265                 270

Ile Ala Glu Leu Asp His Thr Gly Ala Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Asn Val Leu Pro Ser Thr Leu Ala Glu Leu Leu Asn Lys Glu Ile
    290                 295                 300

Gly Ala Lys Lys Ser Trp Asn Gly Gln Tyr Thr Val Asp Cys Asp Lys
305                 310                 315                 320

Ile Lys Ser Leu Pro Asp Ile Val Phe Asn Leu Ser Asn Ser Asn Tyr
                325                 330                 335

Ser Leu Pro Ala Ser Asp Tyr Ile Leu Glu Leu Gln Gly Thr Cys Leu
            340                 345                 350

Ser Thr Phe Gln Gly Met Asp Ile Pro Glu Pro Ala Gly Pro Leu Val
        355                 360                 365
```

```
Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asp Leu
    370                 375                 380

Glu Arg Asn Ala Val Gly Leu Ala Arg Ala Lys
385                 390                 395
```

<210> 51
<211> 398
<212> PRT
<213> Verticillium dahliae

<400> 51

```
Met Lys Ser Thr Leu Ile Ala Ala Ala Leu Leu Gly Ser Ala Ser Ala
1               5                   10                  15

Glu Ile His Lys Leu Lys Leu Lys Lys Val Pro Ile Glu Glu Gln Leu
            20                  25                  30

Thr Ser Val Pro Ile Glu Thr Gln Val Gln Gln Leu Gly Gln Lys Tyr
        35                  40                  45

Met Gly Val Arg Pro Gln Ser His Ala Asp Tyr Met Phe Asn Ser Lys
    50                  55                  60

Pro Val Gln Ser Asp Gly Asn His Asn Val Pro Val Ser Asn Phe Met
65                  70                  75                  80

Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln Thr
                85                  90                  95

Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser
            100                 105                 110

Gln Gln Cys Ser Ser Ile Ala Cys Tyr Leu His Thr Lys Tyr Asp Ser
        115                 120                 125

Ser Asp Ser Ser Thr Tyr Lys Ala Asn Gly Ser Glu Phe Glu Ile His
    130                 135                 140

Tyr Gly Ser Gly Ser Leu Thr Gly Phe Val Ser Gln Asp Thr Val Thr
145                 150                 155                 160

Ile Gly Asp Ile Lys Ile Lys Asn Gln Asp Phe Ala Glu Ala Thr Ser
                165                 170                 175

Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu Gly
            180                 185                 190

Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Ile Val Pro Pro Phe Tyr
        195                 200                 205

Gln Met Val Asn Gln Lys Ala Val Asp Glu Pro Val Phe Ala Phe Tyr
```

210 215 220

Leu Gly Asp Thr Asn Glu Gln Gly Asp Glu Ser Glu Val Val Phe Gly
225 230 235 240

Gly Val Asp Glu Ser His Tyr Glu Gly Lys Ile Thr Thr Ile Pro Leu
245 250 255

Arg Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ser Leu Gly
260 265 270

Asp Asn Thr Ala Glu Leu Asp Gly His Gly Ala Ile Leu Asp Thr Gly
275 280 285

Thr Ser Leu Asn Val Leu Pro Ser Thr Leu Ala Asp Met Leu Asn Asn
290 295 300

Glu Ile Gly Ala Lys Lys Gly Tyr Asn Gly Gln Trp Ser Val Glu Cys
305 310 315 320

Asp Lys Arg Ala Ser Leu Pro Asp Ile Thr Phe Asn Leu Ala Gly Tyr
325 330 335

Asn Phe Ser Ile Ser Ala Tyr Asp Tyr Ile Leu Glu Val Ser Gly Ser
340 345 350

Cys Ile Ser Thr Phe Gln Gly Met Asp Phe Pro Glu Pro Val Gly Pro
355 360 365

Leu Val Ile Leu Gly Asp Ala Phe Leu Arg Arg Trp Tyr Ser Ile Tyr
370 375 380

Asp Leu Gly Lys Asn Thr Val Gly Leu Ala Lys Ala Lys Lys
385 390 395

<210> 52
<211> 398
<212> PRT
<213> Botryotinia fuckeliana

<400> 52

Met Lys Gly Ala Phe Leu Ala Ala Ala Ser Leu Leu Gly Ser Val Ser
1 5 10 15

Ala Gly Val His Lys Met Pro Leu Lys Lys Val Ser Leu Ser Glu Gln
20 25 30

Leu Ala Thr Ala Asn Met Gln Glu His Ala Lys His Leu Gly Gln Lys
35 40 45

Tyr Met Gly Val Arg Pro Glu Ser His Ala Ser Glu Met Phe Lys Glu
50 55 60

```
Thr Ser Val His Asp Ala Gly Asp His Thr Val Pro Val Ser Asn Phe
65                  70                  75                  80

Leu Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95

Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Ser Gln Cys Gly Ser Ile Ala Cys Tyr Leu His Thr Lys Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Gln Asn Gly Thr Ser Phe Glu Ile
    130                 135                 140

Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Thr Ser Lys Asp Val Met
145                 150                 155                 160

Thr Ile Gly Asp Leu Lys Ile Lys Asp Gln Val Phe Ala Glu Ala Thr
                165                 170                 175

Glu Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Ser Ile Val Pro Pro Phe
        195                 200                 205

Tyr Ser Met Val Asp Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Ser Asn Asp Glu Ser Asp Pro Ser Glu Ala Ile Phe Gly
225                 230                 235                 240

Gly Val Asn Lys Asp His Tyr Asp Gly Lys Ile Thr Glu Ile Pro Leu
                245                 250                 255

Arg Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ser Ile Ala Phe Gly
            260                 265                 270

Asp Ser Glu Ala Glu Leu Glu Asn Thr Gly Val Ile Leu Asp Thr Gly
        275                 280                 285

Thr Ser Leu Ile Ala Leu Pro Ala Asp Leu Ala Gly Leu Leu Asn Ala
    290                 295                 300

Glu Ile Gly Ala Lys Lys Gly Trp Asn Gly Gln Tyr Thr Val Asp Cys
305                 310                 315                 320

Ala Lys Arg Asp Ser Leu Pro Glu Leu Thr Phe Thr Leu Ser Gly His
                325                 330                 335
```

```
Lys Phe Pro Ile Gly Pro Tyr Asp Tyr Ile Leu Glu Val Gln Gly Ser
            340                 345                 350

Cys Ile Ser Ala Ile Met Gly Met Asp Phe Pro Glu Pro Val Gly Pro
        355                 360                 365

Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr
    370                 375                 380

Asp Leu Gly Lys Asn Thr Val Gly Leu Ala Lys Ala Lys Ala
385                 390                 395
```

<210> 53
<211> 396
<212> PRT
<213> Chaetomium globosum

<400> 53

```
Met Lys Gly Ala Leu Leu Thr Ala Ala Val Leu Leu Gly Ser Ala Gln
1               5                   10                  15

Gly Ala Val His Lys Met Lys Leu Gln Lys Val Pro Leu Ser Glu Gln
            20                  25                  30

Leu Glu Ala Val Pro Leu Asn Thr Gln Leu Glu Gln Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Val Arg Pro Arg Gln Ser His Ala Asn Ala Val Phe Asn
    50                  55                  60

Gly Met Val Ala Glu Val Lys Gly Asn His Pro Val Pro Ile Ser Asn
65                  70                  75                  80

Phe Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Ser Pro Pro
                85                  90                  95

Gln Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
            100                 105                 110

Pro Ser Val Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Thr Lys Tyr
        115                 120                 125

Asp Ser Ser Ala Ser Ser Thr Tyr Lys Lys Asn Gly Thr Asn Phe Glu
    130                 135                 140

Ile Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Thr
145                 150                 155                 160

Met Thr Ile Gly Asp Ile Thr Ile Lys Gly Gln Asp Phe Ala Glu Ala
                165                 170                 175
```

```
Thr Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
            180                 185                 190

Leu Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Val Pro Pro
        195                 200                 205

Phe Tyr Lys Met Leu Glu Gln Lys Leu Ile Asp Glu Pro Val Phe Ala
    210                 215                 220

Phe Tyr Leu Ala Asp Glu Lys Gly Gln Ser Glu Val Val Phe Gly Gly
225                 230                 235                 240

Val Asp Ser Asp Lys Tyr Lys Gly Lys Ile Thr Thr Ile Pro Leu Arg
                245                 250                 255

Arg Lys Ala Tyr Trp Glu Val Asp Phe Asp Ala Ile Ser Tyr Gly Asp
            260                 265                 270

Asp Thr Ala Glu Leu Glu Asn Thr Gly Val Ile Leu Asp Thr Gly Thr
        275                 280                 285

Ser Leu Ile Ala Leu Pro Ser Gln Leu Ala Glu Met Leu Asn Ala Gln
    290                 295                 300

Ile Gly Ala Lys Lys Asn Tyr Ala Gly Gln Tyr Ala Ile Asp Cys Asn
305                 310                 315                 320

Lys Arg Asp Ser Leu Lys Asp Val Thr Phe Asn Leu Ala Gly Tyr Asn
                325                 330                 335

Phe Thr Leu Gly Pro Tyr Asp Tyr Ile Leu Glu Val Ser Gly Ser Cys
            340                 345                 350

Ile Ser Thr Phe Met Gly Met Asp Phe Pro Glu Pro Thr Gly Pro Leu
        355                 360                 365

Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr Asp
    370                 375                 380

Leu Gly Ala Asn Thr Val Gly Leu Ala Glu Ala Lys
385                 390                 395
```

<210> 54
<211> 396
<212> PRT
<213> Thielavia terrestris

<400> 54

```
Met Lys Gly Ala Leu Leu Thr Ala Ala Val Leu Leu Gly Ser Ala Gln
1               5                   10                  15
```

```
Gly Ala Val His Lys Leu Lys Leu Gln Lys Ile Pro Leu Ala Glu Gln
            20                  25                  30

Leu Glu Ser Val Pro Ile Gln Thr Gln Leu Glu His Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Leu Arg Pro Lys Gln Ser His Ala Ser Ala Val Phe Asn
    50                  55                  60

Gly Met Pro Val Glu Val Glu Gly Asn His Pro Val Pro Ile Ser Asn
65                  70                  75                  80

Tyr Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Leu Gly Thr Pro Pro
                85                  90                  95

Gln Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
            100                 105                 110

Pro Ser Val Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys Tyr
        115                 120                 125

Asp Ser Ser Ala Ser Ser Thr Tyr Lys Lys Asn Gly Thr Ser Phe Asp
    130                 135                 140

Ile Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Thr
145                 150                 155                 160

Leu Ser Ile Gly Asp Ile Thr Val Lys Gly Gln Asp Phe Ala Glu Ala
                165                 170                 175

Thr Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
            180                 185                 190

Leu Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Gly Ile Val Pro Pro
        195                 200                 205

Phe Tyr Lys Met Val Glu Gln Lys Leu Val Asp Glu Pro Val Phe Ala
    210                 215                 220

Phe Tyr Leu Ala Asp Thr Asn Gly Glu Ser Glu Val Val Phe Gly Gly
225                 230                 235                 240

Val Asp Lys Asp Arg Tyr Lys Gly Lys Ile Thr Thr Ile Pro Leu Arg
                245                 250                 255

Arg Lys Ala Tyr Trp Glu Val Asp Phe Glu Ser Leu Ser Tyr Gly Asp
            260                 265                 270

Asp Thr Ala Asp Phe Glu Asn Thr Gly Ala Ile Leu Asp Thr Gly Thr
        275                 280                 285
```

```
Ser Leu Ile Thr Leu Pro Ser Gln Leu Ala Glu Met Leu Asn Ala Gln
    290                 295                 300

Leu Gly Ala Lys Lys Asn Phe Ala Gly Gln Tyr Val Leu Asp Cys Ser
305                 310                 315                 320

Lys Arg Asp Ser Leu Glu Asp Ile Thr Phe Asn Leu Ala Gly Tyr Asn
                325                 330                 335

Phe Thr Leu Gly Pro Gln Asp Tyr Ile Leu Glu Ile Ser Gly Ser Cys
            340                 345                 350

Met Ser Thr Phe Thr Pro Met Asp Phe Pro Ala Pro Thr Gly Pro Leu
        355                 360                 365

Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr Asp
    370                 375                 380

Leu Gly Ala Asn Thr Val Gly Leu Ala Glu Ala Asn
385                 390                 395


<210>  55
<211>  395
<212>  PRT
<213>  Magnaporthe oryzae

<400>  55

Met Lys Gly Ala Met Met Thr Ala Ala Val Leu Leu Gly Thr Ala Glu
1               5                   10                  15

Ala Gly Val His Lys Leu Lys Met Lys Lys Ile Pro Leu Glu Asp Gln
            20                  25                  30

Leu Lys Thr Phe Asp Leu Asn Ala Gln Met Arg Gly Leu Gly Gln Lys
        35                  40                  45

Tyr Leu Gly Ile Arg Pro Glu Ser His Gln Gln Ala Val Phe Ser Asn
    50                  55                  60

Asp Ala Val Gln Ala Ser Gly Asn His Pro Val Pro Ile Ser Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95

Asn Phe Lys Val Ile Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Ser Ser Cys Gly Ser Ile Ala Cys Tyr Leu His Asn Lys Tyr Glu
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Lys Lys Asn Gly Thr Glu Phe Lys Ile
```

130 135 140

Gln Tyr Gly Ser Gly Ser Met Glu Gly Phe Val Ser Asn Asp Val Met
145 150 155 160

Thr Ile Gly Asp Leu Lys Ile Lys Asn Leu Asp Phe Ala Glu Ala Thr
165 170 175

Lys Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
180 185 190

Gly Met Gly Phe Asp Arg Leu Ser Val Asn Lys Ile Val Pro Pro Phe
195 200 205

Tyr Ala Met Val Asp Gln Lys Leu Ile Asp Glu Pro Val Phe Ala Phe
210 215 220

Tyr Leu Ala Asp Glu Lys Ser Glu Ser Glu Val Val Phe Gly Gly Val
225 230 235 240

Asn Lys Asp His Ile Asp Gly Lys Ile Thr Glu Ile Pro Leu Arg Arg
245 250 255

Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Leu Gly Asp Glu
260 265 270

Val Ala Glu Leu Asp Asn Thr Gly Val Ile Leu Asp Thr Gly Thr Ser
275 280 285

Leu Ile Ala Leu Pro Ser Gln Leu Ala Glu Leu Leu Asn Ser Gln Ile
290 295 300

Gly Ala Lys Lys Gly Tyr Asn Gly Gln Tyr Ser Ile Asp Cys Asp Lys
305 310 315 320

Arg Lys Asp Leu Pro Asp Ile Thr Phe Arg Leu Ser Gly Tyr Asp Phe
325 330 335

Pro Ile Ser Ala Tyr Asp Tyr Ile Leu Glu Val Ser Gly Ser Cys Ile
340 345 350

Ser Thr Phe Met Ala Met Asp Ile Pro Glu Pro Val Gly Pro Leu Ala
355 360 365

Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr Asp Leu
370 375 380

Gly Lys Gly Thr Val Gly Leu Ala Lys Ala Lys
385 390 395

<210> 56

<211> 396
<212> PRT
<213> Tuber melanosporum

<400> 56

Met Lys Ser Ser Ile Ile Phe Ala Ala Gly Ser Leu Leu Gly Ser Ala
1 5 10 15

Met Ala Gly Val His Arg Ala Pro Leu Lys Lys Val Pro Leu Thr Glu
20 25 30

Gln Leu Ser His His Asp Ile Asn Thr Gln Met Arg Ala Leu Gly Gln
35 40 45

Lys Tyr Met Gly Ile Arg Pro Glu Lys Ile Asp Glu Glu Met Phe Lys
50 55 60

Thr Gln Glu Ile Lys Thr Asp Asp Gly His Pro Val Pro Val Ser Asn
65 70 75 80

Phe Leu Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro
85 90 95

Gln Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val
100 105 110

Pro Ser Ser Gln Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys Tyr
115 120 125

Asp Ser Ser Thr Ser Ser Thr Tyr Arg Pro Asn Gly Thr Ser Phe Glu
130 135 140

Ile Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Asn
145 150 155 160

Ile Glu Ile Gly Asn Leu Lys Ile Lys Asp Gln Thr Phe Ala Glu Ala
165 170 175

Thr Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile
180 185 190

Leu Gly Leu Gly Tyr Asp Ser Ile Ser Val Asn His Ile Val Pro Pro
195 200 205

Phe Tyr Gln Met Val Asp Gln Gly Leu Leu Asp Glu Pro Val Phe Ala
210 215 220

Phe Tyr Leu Gly Asp Lys Asp Asp Gln Ser Glu Ala Ile Phe Gly Gly
225 230 235 240

Ile Asp Lys Ala His Tyr Gln Gly Lys Leu Ile Lys Leu Pro Val Arg
245 250 255

```
Arg Lys Ala Tyr Trp Glu Val Glu Phe Glu Ala Ile Thr Phe Gly Lys
            260                 265                 270

Ser Thr Ala Gln Phe Glu Asn Thr Gly Ala Ile Val Asp Thr Gly Thr
        275                 280                 285

Ser Leu Ile Ala Leu Pro Ser Thr Leu Ala Glu Leu Leu Asn Lys Glu
    290                 295                 300

Ile Gly Ala Lys Lys Gly Phe Asn Gly Gln Tyr Ser Val Glu Cys Glu
305                 310                 315                 320

Lys Arg Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Thr Gly His Asp
                325                 330                 335

Phe Thr Ile Thr Ala Tyr Asp Tyr Ile Leu Glu Val Gln Gly Ser Cys
            340                 345                 350

Ile Ser Ala Phe Met Gly Met Asp Phe Pro Glu Pro Ile Gly Pro Leu
        355                 360                 365

Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Val Tyr Asn
    370                 375                 380

Leu Gly Asp Asn Thr Ile Gly Leu Ala Lys Ser Lys
385                 390                 395


<210>  57
<211>  396
<212>  PRT
<213>  Neurospora crassa

<400>  57

Met Lys Gly Ala Leu Leu Thr Ala Ala Met Leu Leu Gly Ser Ala Gln
1               5                   10                  15

Ala Gly Val His Thr Met Lys Leu Lys Lys Val Pro Leu Ala Glu Gln
            20                  25                  30

Leu Glu Ser Val Pro Ile Asp Val Gln Val Gln His Leu Gly Gln Lys
        35                  40                  45

Tyr Thr Gly Leu Arg Thr Glu Ser His Thr Gln Ala Met Phe Lys Ala
    50                  55                  60

Thr Asp Ala Gln Val Ser Gly Asn His Pro Val Pro Ile Thr Asn Phe
65                  70                  75                  80

Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro Pro Gln
                85                  90                  95
```

```
Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
            100                 105                 110

Ser Ser Gln Cys Gly Ser Ile Ala Cys Tyr Leu His Asn Lys Tyr Glu
        115                 120                 125

Ser Ser Glu Ser Ser Thr Tyr Lys Lys Asn Gly Thr Ser Phe Lys Ile
    130                 135                 140

Glu Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Arg Met
145                 150                 155                 160

Thr Ile Gly Asp Ile Thr Ile Asn Asp Gln Leu Phe Ala Glu Ala Thr
                165                 170                 175

Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Arg Ile Ala Val Asn Gly Ile Thr Pro Pro Phe
        195                 200                 205

Tyr Lys Met Val Glu Gln Lys Leu Val Asp Glu Pro Val Phe Ser Phe
    210                 215                 220

Tyr Leu Ala Asp Gln Asp Gly Glu Ser Glu Val Val Phe Gly Gly Val
225                 230                 235                 240

Asn Lys Asp Arg Tyr Thr Gly Lys Ile Thr Thr Ile Pro Leu Arg Arg
                245                 250                 255

Lys Ala Tyr Trp Glu Val Asp Phe Asp Ala Ile Gly Tyr Gly Lys Asp
            260                 265                 270

Phe Ala Glu Leu Glu Gly His Gly Val Ile Leu Asp Thr Gly Thr Ser
        275                 280                 285

Leu Ile Ala Leu Pro Ser Gln Leu Ala Glu Met Leu Asn Ala Gln Ile
    290                 295                 300

Gly Ala Lys Lys Ser Trp Asn Gly Gln Phe Thr Ile Asp Cys Gly Lys
305                 310                 315                 320

Lys Ser Ser Leu Glu Asp Val Thr Phe Thr Leu Ala Gly Tyr Asn Phe
                325                 330                 335

Thr Leu Gly Pro Glu Asp Tyr Ile Leu Glu Ala Ser Gly Ser Cys Leu
            340                 345                 350

Ser Thr Phe Met Gly Met Asp Met Pro Ala Pro Val Gly Pro Leu Ala
        355                 360                 365
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Ile Leu Gly Asp Ala Phe Leu Arg Lys Tyr Tyr Ser Ile Tyr Asp Leu
    370                 375                 380

Gly Ala Asp Thr Val Gly Ile Ala Thr Ala Lys Arg
385                 390                 395

<210>  58
<211>  426
<212>  PRT
<213>  Trichoderma reesei

<400>  58

Met Lys Phe His Ala Ala Ala Leu Thr Leu Ala Cys Leu Ala Ser Ser
1               5                   10                  15

Ala Ser Ala Gly Val Ala Gln Pro Arg Ala Asp Glu Val Glu Ser Ala
            20                  25                  30

Glu Gln Gly Lys Thr Phe Ser Leu Glu Gln Ile Pro Asn Glu Arg Tyr
        35                  40                  45

Lys Gly Asn Ile Pro Ala Ala Tyr Ile Ser Ala Leu Ala Lys Tyr Ser
    50                  55                  60

Pro Thr Ile Pro Asp Lys Ile Lys His Ala Ile Glu Ile Asn Pro Asp
65                  70                  75                  80

Leu His Arg Lys Phe Ser Lys Leu Ile Asn Ala Gly Asn Met Thr Gly
                85                  90                  95

Thr Ala Val Ala Ser Pro Pro Pro Gly Ala Asp Ala Glu Tyr Val Leu
            100                 105                 110

Pro Val Lys Ile Gly Thr Pro Pro Gln Thr Leu Pro Leu Asn Leu Asp
        115                 120                 125

Thr Gly Ser Ser Asp Leu Trp Val Ile Ser Thr Asp Thr Tyr Pro Pro
    130                 135                 140

Gln Val Gln Gly Gln Thr Arg Tyr Asn Val Ser Ala Ser Thr Thr Ala
145                 150                 155                 160

Gln Arg Leu Ile Gly Glu Ser Trp Val Ile Arg Tyr Gly Asp Gly Ser
                165                 170                 175

Ser Ala Asn Gly Ile Val Tyr Lys Asp Arg Val Gln Ile Gly Asn Thr
            180                 185                 190

Phe Phe Asn Gln Gln Ala Val Glu Ser Ala Val Asn Ile Ser Asn Glu
        195                 200                 205
```

```
Ile Ser Asp Asp Ser Phe Ser Ser Gly Leu Leu Gly Ala Ala Ser Ser
    210                 215                 220

Ala Ala Asn Thr Val Arg Pro Asp Arg Gln Thr Thr Tyr Leu Glu Asn
225                 230                 235                 240

Ile Lys Ser Gln Leu Ala Arg Pro Val Phe Thr Ala Asn Leu Lys Lys
                245                 250                 255

Gly Lys Pro Gly Asn Tyr Asn Phe Gly Tyr Ile Asn Gly Ser Glu Tyr
            260                 265                 270

Ile Gly Pro Ile Gln Tyr Ala Ala Ile Asn Pro Ser Ser Pro Leu Trp
        275                 280                 285

Glu Val Ser Val Ser Gly Tyr Arg Val Gly Ser Asn Asp Thr Lys Tyr
    290                 295                 300

Val Pro Arg Val Trp Asn Ala Ile Ala Asp Thr Gly Thr Thr Leu Leu
305                 310                 315                 320

Leu Val Pro Asn Asp Ile Val Ser Ala Tyr Tyr Ala Gln Val Lys Gly
                325                 330                 335

Ser Thr Phe Ser Asn Asp Val Gly Met Met Leu Val Pro Cys Ala Ala
            340                 345                 350

Thr Leu Pro Asp Phe Ala Phe Gly Leu Gly Asn Tyr Arg Gly Val Ile
        355                 360                 365

Pro Gly Ser Tyr Ile Asn Tyr Gly Arg Met Asn Lys Thr Tyr Cys Tyr
    370                 375                 380

Gly Gly Ile Gln Ser Ser Glu Asp Ala Pro Phe Ala Val Leu Gly Asp
385                 390                 395                 400

Ile Ala Leu Lys Ala Gln Phe Val Val Phe Asp Met Gly Asn Lys Val
                405                 410                 415

Val Gly Phe Ala Asn Lys Asn Thr Asn Val
            420                 425


<210>  59
<211>  417
<212>  PRT
<213>  Trichoderma virens

<400>  59

Met Lys Phe His Ala Ala Ala Leu Thr Leu Ala Tyr Leu Ala Asn Ser
1               5                   10                  15

Ala Ser Ala Ser Val Ala Gln Pro Arg Ser Glu Ala Ala Gln Ala Pro
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```
            20                  25                  30

Glu Asp Gly Lys Thr Phe Ser Ile Thr Gln Ile Gln Asn Glu Arg Phe
        35                  40                  45

Arg Gly Pro Asn Val Pro Ala Ser Tyr Ile Ala Ala Leu Ala Lys Tyr
    50                  55                  60

Ser Pro Gln Val Ser Glu His Ile Lys His Ala Ile Arg Leu Val Glu
65                  70                  75                  80

Glu Thr Gly Asn Gln Thr Gly Thr Ala Val Ala Thr Pro Ala Pro Gly
                85                  90                  95

Ala Asp Ser Glu Tyr Val Leu Pro Val Lys Ile Gly Thr Pro Pro Gln
            100                 105                 110

Thr Val Pro Leu Asn Leu Asp Thr Gly Ser Ser Asp Leu Trp Val Leu
        115                 120                 125

Ser Thr Asp Thr Tyr Pro Ser Gln Ile Gln Gly Gln Ala Ile Tyr Asp
    130                 135                 140

Pro Asn Ala Ser Asn Thr Ser Arg Arg Gln Thr Gly Leu Ser Trp Leu
145                 150                 155                 160

Ile Arg Tyr Gly Asp Gly Ser Ser Ala Asn Gly Ile Val Tyr Lys Asp
                165                 170                 175

Arg Val Gln Ile Gly Asn Thr Phe Phe Asp Gln Gln Ala Ile Glu Ser
            180                 185                 190

Ala Ile Arg Val Ser Asp Asp Ile Ser Asp Asp Thr Phe Ala Ser Gly
        195                 200                 205

Leu Leu Gly Ala Ala Gly Ser Ala Gly Asn Thr Val Arg Pro Asp Lys
    210                 215                 220

Gln Lys Thr Tyr Leu Asp Asn Ile Lys Asp Gln Leu Ala Lys Pro Leu
225                 230                 235                 240

Phe Thr Ala Asn Leu Lys Lys Gly Lys Pro Gly Asn Tyr Asn Phe Gly
                245                 250                 255

Tyr Ile Asn Ala Ser Glu Tyr Thr Gly Asp Ile Gln Tyr Ala Ala Ile
            260                 265                 270

Asn Pro Lys Gly Pro Leu Trp Glu Ile Ser Val Ser Gly Tyr Arg Val
        275                 280                 285

Gly Ser Asp Glu Ser Lys Tyr Val Ser Arg Val Trp Asn Ala Ile Ala
```

290 295 300

Asp Thr Gly Thr Thr Leu Leu Leu Thr Pro Thr Asp Ile Val Asn Ala
305 310 315 320

Tyr Tyr Ala Gln Val Asn Gly Ser Thr Met Asn Asp Asp Val Gly Met
325 330 335

Met Val Val Pro Cys Thr Ala Lys Leu Pro Asp Phe Val Phe Gly Leu
340 345 350

Gly Lys Tyr Arg Gly Val Ile Pro Gly Thr Tyr Met Asn Tyr Gly Arg
355 360 365

Met Asn Arg Thr Tyr Cys Tyr Gly Gly Leu Gln Asp Ser Glu Gly Ala
370 375 380

Pro Phe Ala Val Leu Gly Asp Ile Ala Leu Lys Ala Gln Phe Val Val
385 390 395 400

Phe Asp Phe Gly Asn Asn Val Val Gly Phe Ala Asn Lys Asn Thr Thr
405 410 415

Val

<210> 60
<211> 543
<212> PRT
<213> Trichoderma atroviride

<400> 60

Met Glu Tyr Ala Leu Asn Ala Ser Thr Ala Ile His Ala Glu Tyr His
1 5 10 15

Ser Ser Val Ala Val Val Arg Gly Leu His Ala Arg Val Cys Leu Ser
20 25 30

Asn Val Ser Val Val Pro Ser Met Ile Thr Met Lys Glu Met Lys Met
35 40 45

Cys Leu Arg Lys Phe Val Val Ser Pro Val Glu Leu Gln His Phe Pro
50 55 60

Gln Ala Ile Glu Leu Glu Gln Ser Phe Pro His Ala His Ala Leu Gly
65 70 75 80

Ser Ile Pro Gly Gln Val Phe Gly Arg Ile Ile Thr Gly Val Gly Gln
85 90 95

Asp Ile Asp Met Ser Glu Gly Gly Leu Gln His Ser Phe His Gln Ile
100 105 110

```
Ala Thr Ala Leu Asn Leu Ile Met Lys Phe His Ala Thr Ser Leu Ala
        115                 120                 125

Ile Ala Cys Leu Ala Ser Ser Ala Ser Ala Ala Val Ala Gln Pro Lys
    130                 135                 140

Gly Thr Ala Glu Thr Thr Pro Gln Gly Glu Glu Phe Ser Ile Thr Gln
145                 150                 155                 160

Ile Arg Asn Glu Arg Trp Lys Gly Pro Asn Ala Pro Ala Ala Tyr Ile
                165                 170                 175

Ala Ala Leu Ala Lys Tyr Ser Pro Thr Ile Pro Asp Ser Ile Lys His
            180                 185                 190

Ala Ile Arg Val Asn Pro Gly Leu Arg Gln Lys Phe Gly Lys Leu Ile
        195                 200                 205

Asn Ala Gly Asn Gln Thr Gly Thr Gly Val Ala Thr Pro Ser Pro Gly
    210                 215                 220

Gly Asp Ala Glu Tyr Val Leu Pro Val Gln Ile Gly Thr Pro Pro Gln
225                 230                 235                 240

Thr Leu Pro Leu Asn Leu Asp Thr Gly Ser Ser Asp Leu Trp Val Leu
                245                 250                 255

Ser Thr Asp Thr Tyr Pro Ser Gln Val Glu Gly Gln Pro Leu Tyr Lys
            260                 265                 270

Pro Asn Asn Ser Thr Thr Ser Lys Arg Leu Pro Gly Glu Ser Trp Val
        275                 280                 285

Ile Gln Tyr Gly Asp Gly Ser Ser Ala Asn Gly Ile Val Tyr Thr Asp
    290                 295                 300

Arg Val Gln Ile Gly Asn Thr Phe Phe Asn Thr Gln Ala Ile Glu Ser
305                 310                 315                 320

Ala Ile Asn Val Ser Asp Glu Ile Ser Asp Asp Thr Phe Ser Ser Gly
                325                 330                 335

Leu Leu Gly Ala Ala Phe Ser Thr Ala Asn Thr Val Arg Pro Asp Gln
            340                 345                 350

Gln Lys Thr Tyr Leu Asp Asn Ile Lys Asp Gln Leu Val Lys Pro Val
        355                 360                 365

Phe Thr Ala Asn Leu Lys Lys Gly Lys Pro Gly Asn Tyr Asn Phe Gly
    370                 375                 380
```

```
Tyr Ile Asn Ala Ser Glu Tyr Thr Gly Asn Ile Gln Tyr Ala Ala Ile
385                 390                 395                 400

Lys Pro Arg Ser Pro Leu Trp Glu Ile Ser Val Ser Gly Tyr Arg Val
                405                 410                 415

Gly Ser Asn Asp Thr Asn Tyr Val Ala Arg Val Trp Asn Ala Ile Ala
            420                 425                 430

Asp Thr Gly Thr Ser Leu Leu Leu Ala Pro Val Asp Ile Val Asn Ala
        435                 440                 445

Tyr Tyr Lys Gln Ile Ala Gly Ser Lys Leu Asp Ser Gly Tyr Gly Met
    450                 455                 460

Met Val Phe Pro Cys Asn Thr Thr Leu Pro Asp Phe Val Phe Gly Leu
465                 470                 475                 480

Gly Thr Tyr Arg Gly Val Ile Pro Gly Ser Tyr Ile Asn Tyr Gly Lys
                485                 490                 495

Ile Asn Arg Thr Tyr Cys Phe Gly Gly Ile Gln Ser Ser Glu Asp Ala
            500                 505                 510

Pro Phe Ala Val Leu Gly Asp Ile Leu Leu Lys Ala Gln Phe Ala Val
        515                 520                 525

Phe Asp Met Gly Asn Lys Val Val Gly Phe Ala Asn Lys Pro Val
    530                 535                 540


<210>  61
<211>  446
<212>  PRT
<213>  Metarhizium acridum

<400>  61

Met Lys Ala Thr Ile Ala Ala Ile Val Leu Ala Leu Leu Ala Glu Gly
1               5                   10                  15

Ala Val Val Gly Glu Arg Val Asp Ala Ala Pro Gln Ala Pro Ala Pro
            20                  25                  30

Arg Thr Asn Gly Arg Ser Phe Thr Leu His Gln Val Val Asn Asn Asn
        35                  40                  45

Phe Gln Gly His Asp Gly Pro Thr Ser Phe Leu Arg Ala His Phe Lys
    50                  55                  60

Tyr Ala Gln Lys Leu Pro Asp Tyr Leu Ser Lys Leu Val Glu Ile Asn
65                  70                  75                  80
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```
Pro Asn Phe Arg Ile Lys Phe Gly Ala Ala Ser Gln Gly Lys Cys Tyr
                85                  90                  95

Pro Glu Val Thr Leu Trp Gln Val Leu Ser Leu Leu Leu Thr Ser Ile
            100                 105                 110

Ile Ala Gly Glu Gln Val Gly Thr Val Glu Ala Asn Pro Ser Pro Leu
        115                 120                 125

Val Asp Thr Glu Tyr Ala Val Glu Ile Gly Ile Gly Thr Pro Pro Gln
    130                 135                 140

Arg Ile Arg Leu Asn Leu Asp Thr Gly Ser Ser Asp Phe Trp Val Phe
145                 150                 155                 160

Ser Thr Asp Thr Thr Pro Ser Met Val His Asp Gln Gly Leu Tyr Asn
                165                 170                 175

Ala Asn Lys Ser Thr Thr Ser His Phe Leu Thr Gly Glu Ser Trp Lys
            180                 185                 190

Ile Lys Tyr Gly Asp Asn Ala Ser Ala Ser Gly Tyr Val Tyr Thr Asp
        195                 200                 205

Arg Val Gln Ile Gly Glu Thr Tyr Val Asp Thr Gln Ala Val Gln Val
    210                 215                 220

Ala Val Asn Val Thr Glu Asp Leu Ser Glu Asp Lys Phe Val Ser Gly
225                 230                 235                 240

Ile Leu Gly Met Ala Asn Ser Ala Ala Asn Thr Val Arg Pro Thr Pro
                245                 250                 255

Gln Arg Thr Tyr Ile Asp Asn Ile Lys Asn Asp Leu Ala Leu Pro Leu
            260                 265                 270

Phe Thr Ala Asn Leu Gln Arg Gln Ala Pro Gly Ser Tyr Asn Phe Gly
        275                 280                 285

Tyr Ile Asp Asp Phe Glu Tyr Thr Gly Asp Ile Ser Tyr Thr Pro Ile
    290                 295                 300

Glu Arg Thr Phe Pro Leu Trp Met Val His Thr Thr Gly Tyr Arg Ile
305                 310                 315                 320

Gly Lys Thr Ser His Asp Lys Ser Ile Asn Ala Ile Val Asp Thr Gly
                325                 330                 335

Thr Ser Leu Leu Leu Leu Pro Glu Thr Val Val Ser Asn Tyr Tyr Ala
            340                 345                 350
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```
Lys Val Lys Gly Ser Ser Val Asp Pro Arg Leu Gly Met Arg Val Val
        355                 360                 365

Pro Cys Asn Ala Asn Leu Pro Asp Phe Tyr Leu Thr Ile Gly Ser Tyr
    370                 375                 380

Arg Gly Arg Val Pro Gly Ser Tyr Met Asn Tyr Gly Arg Val Ser Gly
385                 390                 395                 400

Asn Ser Cys Phe Gly Gly Ile Gln Ser Ser Asp Ala Leu Pro Phe Ser
                405                 410                 415

Val Leu Gly Asp Val Phe Leu Lys Thr Gln Phe Val Val Phe Asp Tyr
            420                 425                 430

Gly Asn Ala Arg Val Gly Phe Ala Arg Lys Asn Leu Tyr Glu
        435                 440                 445


<210>  62
<211>  560
<212>  PRT
<213>  Fusarium oxysporum

<400>  62

Met Lys Phe Ser Thr Val Ser Phe Leu Leu Leu Ala Gly Cys Ser Thr
1               5                   10                  15

Gly Ile Pro His Glu Ile Arg Gly Asp Val Tyr Glu Val Lys Asn Pro
            20                  25                  30

Phe Ser Pro Asn Ala Val Asp Pro Glu Val Glu Gly Val Lys Gly Leu
        35                  40                  45

Gln Lys Arg Thr Ile Asp Pro Lys Gly Asp Gln Ala Leu Val Ala Arg
    50                  55                  60

Gly Asp Val Tyr Glu Val Lys Asn Pro Phe Ser Pro Asn Ala Val Asp
65                  70                  75                  80

Pro Glu Val Glu Gly Val Lys Gly Leu Gln Asp Arg Asp Ile Lys Pro
                85                  90                  95

Arg Asp Val Ser Asn Asn Asp Pro Leu Glu Ala Arg Gly Asp Ile Tyr
            100                 105                 110

Glu Val Lys Asn Pro Phe Ser Pro Asn Ala Val Asp Pro Glu Val Glu
        115                 120                 125

Gly Val Lys Gly Leu Gln Glu Arg Asp Ile Asp Pro Glu Glu Gln Glu
    130                 135                 140
```

```
Glu Glu Glu Leu Gly Lys Thr Leu Arg Gly Arg Ala Ile Asp His Glu
145                 150                 155                 160

Asn Asp Pro Asp Ser Ala His Leu Lys Pro Arg Ala Gly Gly Glu Lys
                165                 170                 175

Val Lys Met Asp Gln Leu Thr Asn Thr Arg Tyr Lys Lys Pro His Ala
            180                 185                 190

Glu Ile Ala Leu Ile Gln Ala Tyr Asn Lys Tyr His Lys Pro Leu Pro
        195                 200                 205

Pro Lys Leu Lys Lys Ile Ala Gln His Glu Ala Asp Leu Ile Lys Asn
    210                 215                 220

Lys Leu Gly Met Lys Gly Thr Ala Ser Ala Thr Pro Pro Gln Tyr Tyr
225                 230                 235                 240

Asp Ser Gln Tyr Val Val Pro Val Lys Ile Gly Thr Pro Ala Gln Gln
                245                 250                 255

Thr Tyr Leu Asn Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser
            260                 265                 270

Thr Asp Thr Tyr Gln Pro Asp Gln Ala Gly His Ile Leu Tyr Lys Pro
        275                 280                 285

Asp Lys Ser Thr Thr Ser Lys Arg Leu Asn Gly Gln Thr Trp Ser Ile
    290                 295                 300

Arg Tyr Gly Asp Gly Thr Gly Ala Ser Gly Ile Val Tyr Thr Asp Lys
305                 310                 315                 320

Val Gln Val Gly Lys Thr Tyr Val Asn Lys Gln Ala Val Glu Ser Ala
                325                 330                 335

Thr Glu Val Ser Asp Gly Ile Ala Ser Asp Lys Phe Ser His Gly Ile
            340                 345                 350

Met Gly Leu Ala Met Ser Ser Leu Asn Thr Val Arg Pro Thr Pro Gln
        355                 360                 365

Asn Thr Tyr Phe Gln Asn Val Gln Asn Asn Leu Ala Val Pro Val Phe
    370                 375                 380

Thr Ala Asn Leu Gln Lys Gly Lys Ala Gly Asn Tyr Asn Phe Gly Tyr
385                 390                 395                 400

Ile Asp Gln Gly Glu Tyr Tyr Gly Ser Ile Gln Phe Ala Lys Val Lys
                405                 410                 415
```

```
Lys Gly Ser Pro Trp Trp Gln Ile Asn Ile Glu Gly Tyr Arg Ile Ala
            420                 425                 430

Ala Gly Ala Pro Trp His Lys Tyr Asn Tyr Ser Ala Ile Val Asp Thr
        435                 440                 445

Gly Thr Thr Leu Leu Leu Leu Pro Gly Val Leu Thr Asn Phe Tyr Tyr
    450                 455                 460

Arg Lys Val Lys Gly Ala Tyr Ile Asp Gln Asp Tyr Gly Val Trp Val
465                 470                 475                 480

Phe Pro Cys Thr Ser Lys Leu Pro Ser Phe Tyr Phe Gly Phe Gly Ser
                485                 490                 495

Tyr Gln Gly Lys Val Pro Gly Asn Tyr Ile Asn Tyr Gly Arg Leu Thr
            500                 505                 510

Asn Thr Val Cys Tyr Gly Gly Ile Gln Ser Ser Asp Gly Ile Gly Phe
        515                 520                 525

Ala Ile Leu Gly Asp Ile Leu Leu Lys Ala Gln Phe Val Val Phe Asp
    530                 535                 540

Leu Lys Gly Gln Arg Val Gly Phe Ala Asn Lys Leu Thr Ile Lys Ser
545                 550                 555                 560
```

<210> 63
<211> 432
<212> PRT
<213> Cordyceps militaris

<400> 63

```
Met Lys Thr Thr Thr Leu Thr Ala Ala Leu Ala Leu Ala Thr Thr Gly
1               5                   10                  15

Tyr Ser Ala Ala Gln Trp Ser Pro Val Ser Ser Ala Ala Thr Gly Ala
            20                  25                  30

Asn Ala Arg Phe Ser Leu Gln Gln Met Tyr Asn Asp Lys Phe Lys Gly
        35                  40                  45

Val Asn Pro Thr Asp Ala Leu Leu Arg Ala Tyr Ser Arg Tyr Ala Thr
    50                  55                  60

Phe Val Pro Asp His Ile Gln Ala Leu Val Asp Lys Glu Pro Ser Leu
65                  70                  75                  80

Lys Ala Thr Phe His Ala Leu Phe Ser Gly Thr Glu Thr His Ala Leu
                85                  90                  95

Lys Thr Val His Ala Glu Ala Ala Pro Pro Ser Asp Val Asp Ser Glu
```

```
            100                 105                 110

Tyr Val Leu Pro Val Ser Leu Gly Thr Pro Pro Gln Ile Leu Pro Leu
        115                 120                 125

Asn Leu Asp Thr Gly Ser Ser Asp Phe Trp Val Phe Ser Thr Ala Thr
    130                 135                 140

Pro Gln Asp Glu Leu Arg Gly Gln Lys Ile Tyr Tyr Pro Gln Asn Ser
145                 150                 155                 160

Thr Thr Ser Lys Thr Leu Pro Gly Glu His Trp Lys Ile Arg Tyr Gly
                165                 170                 175

Asp Asn Ser Thr Ala Asn Gly Asp Val Tyr Ile Asp Arg Ala Ala Ile
            180                 185                 190

Gly Pro Val Gly Phe Asp Lys Gln Ala Ile Gln Val Ala Thr Ala Ile
        195                 200                 205

Ser Ser Ser Ile Ala Glu Asp Gly Phe Phe Ser Gly Ile Leu Gly Met
    210                 215                 220

Ala Ser Ser Tyr Ala Asn Thr Val Lys Pro Thr Lys Gln Val Thr Phe
225                 230                 235                 240

Leu Asp Asn Ile Lys Asp Thr Leu Asp Ala Pro Val Phe Thr Ala Asn
                245                 250                 255

Leu Gln Lys Gly Met Ser Gly Asn Tyr Asn Phe Gly Tyr Ile Asp Ala
            260                 265                 270

Ser Glu His Thr Gly Asp Ile Ala Tyr Thr Pro Ile Asn Thr Asn Ser
        275                 280                 285

Ser Phe Trp Glu Val Glu Leu Ser Gly Tyr Gln Phe Gly Gln Asp Ala
    290                 295                 300

Phe Lys Asn Glu Arg Val Val Gly Ile Val Asp Thr Gly Thr Thr Leu
305                 310                 315                 320

Leu Leu Phe Pro Gln His Val Val Asp Glu Tyr Tyr Gly Lys Leu Pro
                325                 330                 335

Gly Ser Phe Phe Asp Lys Gln Ser Ala Thr Met Val Phe Pro Cys Asp
            340                 345                 350

Leu Thr Pro Pro Asp Phe Phe Phe Gly Val Gly Asn Asp Tyr Arg Gly
        355                 360                 365

Arg Ile Pro Gly His Tyr Met Asn Tyr Ala His Gln Ser Ala Lys Tyr
```

370 375 380

Cys Tyr Gly Gly Leu Gln Ser Ala Lys Gly Ile Pro Phe Cys Ile Phe
385 390 395 400

Gly Asp Ile Leu Leu Lys Ala Gln Phe Val Val Phe Asp Arg Gly Asn
405 410 415

Leu Ser Val Gly Phe Ala Asn Lys Lys Thr Val Pro Ala Pro Gln Ser
420 425 430

<210> 64
<211> 480
<212> PRT
<213> Gibberella zeae

<400> 64

Met Arg Phe Ser Thr Val Ser Phe Leu Leu Leu Ala Gly Cys Ser Thr
1 5 10 15

Gly Ile Pro His Glu Ile Arg Gly Gly His Glu Val Asn Gly Ala Ser
20 25 30

Val Asp His Pro Glu Lys Pro Leu Gly Arg Ala Glu Arg Arg Ser Thr
35 40 45

Asp Leu Gln Val Asp Gly Ser Arg Ala Leu Thr Val Arg Ser Asp Ala
50 55 60

Tyr Glu Asp Pro Ile Asp Gly Thr Glu Glu Glu Asp Ile Asp Leu Glu
65 70 75 80

Glu Leu Glu Glu Ile Glu Met Gly Lys Gly Leu Lys Gly Arg Ala Ile
85 90 95

Asp Pro Glu Thr Asp Pro Asp Ser Ala His Leu Lys Pro His Ala Glu
100 105 110

Ile Ala Leu Ile His Ala Tyr Asn Lys Tyr Arg Lys Pro Leu Pro Asn
115 120 125

Gln Glu Leu Lys Lys Ile Ala Ala Gln Glu Glu Ala Phe Val Lys Asn
130 135 140

Lys Leu Gly Met Lys Gly Thr Ala Ala Ala Thr Pro Pro Gln Tyr Tyr
145 150 155 160

Asp Ser Gln Tyr Val Val Pro Val Gln Ile Gly Ser Pro Gln Gln Thr
165 170 175

Thr Tyr Leu Asn Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser
180 185 190

```
Thr Asp Thr Tyr Gln Pro Asp Gln Ala Gly His Ile Leu Tyr Lys Pro
        195                 200                 205

Asp Lys Ser Thr Lys Cys Lys Arg Leu Asn Gly Gln Thr Trp Ser Ile
    210                 215                 220

Lys Tyr Gly Asp Gly Thr Gly Ala Ser Gly Ile Val Tyr Leu Asp Thr
225                 230                 235                 240

Val Arg Val Gly Lys Thr Tyr Val Asn Gln Met Ala Val Gln Ser Ala
                245                 250                 255

Thr Glu Val Ser Asp Gly Ile Ala Ser Asp Thr Phe Ala His Gly Ile
            260                 265                 270

Leu Gly Leu Ala Met Ser Ser Leu Asn Thr Val Arg Pro Thr Ala Gln
        275                 280                 285

Lys Thr Tyr Phe Glu Arg Val Gln Gly Ala Leu Glu Val Pro Ile Phe
    290                 295                 300

Thr Ala Asn Leu Lys Lys Gly Ser Ala Gly Asn Tyr Asn Phe Gly Tyr
305                 310                 315                 320

Leu Asp Gln Ser Glu Tyr Tyr Gly Ser Val Gly Phe Ala Ala Val Lys
                325                 330                 335

Lys Asp Ser Pro Trp Trp Gln Ile Thr Val Glu Gly Phe Arg Val Ala
            340                 345                 350

Gln Gly Ala Pro Trp His Lys Tyr Lys Tyr Ser Ala Ile Val Asp Thr
        355                 360                 365

Gly Thr Thr Leu Leu Leu Leu Pro Asp Tyr Leu Val Lys Phe Tyr Tyr
    370                 375                 380

Lys Lys Val Lys Gly Ala Tyr Ile Asp Asn Asp Tyr Gly Val Trp Val
385                 390                 395                 400

Phe Pro Cys Thr Ala Lys Leu Pro Ser Phe Tyr Phe Gly Phe Gly Asn
                405                 410                 415

Tyr Arg Gly Lys Val Pro Gly His Tyr Ile Asn Tyr Gly Arg Leu Thr
            420                 425                 430

Ser Thr Val Cys Tyr Gly Gly Ile Gln Thr Ser Glu Gly Ile Gly Phe
        435                 440                 445

Ala Ile Leu Gly Asp Ile Leu Leu Lys Ala Gln Phe Val Ile Phe Asp
    450                 455                 460
```

```
Leu Lys Gly Asn Arg Val Gly Phe Ala Asn Lys Asn Thr Val Lys Ala
465                 470                 475                 480


<210>  65
<211>  432
<212>  PRT
<213>  Verticillium dahliae

<400>  65

Met His Tyr Leu Thr Tyr Leu Asn Cys Leu Ala Ala Val Ala Ala Ala
1               5                   10                  15


Ser Pro Leu Ala Val Ala Glu Pro Ala Asn Ile Asp Gly Ser Thr Phe
            20                  25                  30


Thr Leu Arg Gln Val Glu Asn Lys Asp Phe Ala Gly Gln Thr Gly Leu
        35                  40                  45


Asp Glu Leu Val Trp Ala Tyr Ile Lys Tyr Asn Ala Glu Leu Pro Ala
    50                  55                  60


Lys Val Arg Glu Ala Ile Val Ile Gly Lys His Val Asn Ala Arg Phe
65                  70                  75                  80


Lys Gly Leu Val Gln Arg Gly Thr Thr Asp Asp Lys Ser Ala Ser Phe
                85                  90                  95


Gly Thr Val Gln Ala Phe Pro Pro Arg Asn Val Asp Ile Gln Tyr Val
            100                 105                 110


Val Pro Val Gln Ile Gly Ser Pro Pro Gln Thr Val Phe Leu Asn Leu
        115                 120                 125


Asp Thr Gly Ser Gly Asp Leu Trp Thr Phe Ser Ser Glu Thr Pro Glu
    130                 135                 140


Trp Gln Arg Gly Asp His Arg Ile Tyr Ser Pro Glu Leu Ser Asn Thr
145                 150                 155                 160


Ser Val Leu Gln Asp Gly Leu Thr Trp Arg Ile Thr Tyr Gly Asp Gly
                165                 170                 175


Ser Gly Ala Ser Gly Asn Val Tyr Asn Asp Arg Val Ala Leu Gly Lys
            180                 185                 190


Thr Ser Phe Ala Ala Gln Ala Ile Glu Ser Ala Ser Gln Val Ser Pro
        195                 200                 205


Ser Phe Thr Arg Asp Ser Phe Ala Ser Gly Ile Leu Gly Leu Gly Phe
    210                 215                 220
```

```
Gly Arg Gly Asn Thr Val Lys Pro Arg Pro Val Lys Thr Tyr Phe Glu
225                 230                 235                 240

Asn Val Met Pro Ala Leu Ala Ser Pro Val Phe Thr Ser Asn Leu Gln
                245                 250                 255

Ala Gly Arg Pro Gly Asn Tyr Asn Phe Gly Phe Val Ala Arg Asn Glu
            260                 265                 270

Tyr Thr Gly Arg Ile Gly Tyr Thr Pro Val Thr Lys Arg Asn Pro Tyr
        275                 280                 285

Trp Glu Ile Lys Val Asp Gly Thr Gln Ile Gly Gly Gly Glu Tyr Asn
    290                 295                 300

Arg Thr Thr Thr Leu Asp Arg Val Ile Val Asp Thr Gly Thr Thr Leu
305                 310                 315                 320

Leu Met Leu Pro Asp Glu His Val Asp Ala Tyr Tyr Asp Gln Val Glu
                325                 330                 335

Gly Ala Arg Phe Ser Pro Ser Trp Ala Ala Tyr Leu Phe Pro Cys Asp
            340                 345                 350

Ala Thr Leu Pro Asp Trp Thr Phe Gly Leu Gly Asp Tyr Arg Gly Lys
        355                 360                 365

Leu Pro Gly Arg Tyr Val Arg Tyr Asn Gln Val Asn Glu Thr His Cys
    370                 375                 380

Phe Gly Gly Ile Gln Ser Ser Ala Gly Ile Pro Phe Ala Ile Phe Gly
385                 390                 395                 400

Ala Ala Leu Leu Lys Ala Gln Phe Ala Val Phe Asp Tyr Val Glu Ala
                405                 410                 415

Asp Arg Glu Val Gln Pro Arg Val Gly Phe Ala Asn Lys Pro Leu Arg
            420                 425                 430


<210>  66
<211>  259
<212>  PRT
<213>  Trichoderma reesei

<400>  66

Met Ala Pro Ala Ser Gln Val Val Ser Ala Leu Met Leu Pro Ala Leu
1               5                   10                  15

Ala Leu Gly Ala Ala Ile Gln Pro Arg Gly Ala Asp Ile Val Gly Gly
            20                  25                  30
```

```
Thr Ala Ala Ser Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Gln Asn
        35                  40                  45

Pro Asn Gln Gly Gly His Phe Cys Gly Gly Val Leu Val Asn Ala Asn
    50                  55                  60

Thr Val Val Thr Ala Ala His Cys Ser Val Val Tyr Pro Ala Ser Gln
65                  70                  75                  80

Ile Arg Val Arg Ala Gly Thr Leu Thr Trp Asn Ser Gly Gly Thr Leu
                85                  90                  95

Val Gly Val Ser Gln Ile Ile Val Asn Pro Ser Tyr Asn Asp Arg Thr
            100                 105                 110

Thr Asp Phe Asp Val Ala Val Trp His Leu Ser Ser Pro Ile Arg Glu
        115                 120                 125

Ser Ser Thr Ile Gly Tyr Ala Thr Leu Pro Ala Gln Gly Ser Asp Pro
    130                 135                 140

Val Ala Gly Ser Thr Val Thr Thr Ala Gly Trp Gly Thr Thr Ser Glu
145                 150                 155                 160

Asn Ser Asn Ser Ile Pro Ser Arg Leu Asn Lys Val Ser Val Pro Val
                165                 170                 175

Val Ala Arg Ser Thr Cys Gln Ala Asp Tyr Arg Ser Gln Gly Leu Ser
            180                 185                 190

Val Thr Asn Asn Met Phe Cys Ala Gly Leu Thr Gln Gly Gly Lys Asp
        195                 200                 205

Ser Cys Ser Gly Asp Ser Gly Gly Pro Ile Val Asp Ala Asn Gly Val
    210                 215                 220

Leu Gln Gly Val Val Ser Trp Gly Ile Gly Cys Ala Glu Ala Gly Phe
225                 230                 235                 240

Pro Gly Val Tyr Thr Arg Ile Gly Asn Phe Val Asn Tyr Ile Asn Gln
                245                 250                 255

Asn Leu Ala
```

<210> 67
<211> 255
<212> PRT
<213> Trichoderma atroviride

<400> 67

```
Met Ala Pro Ala Ser Ala Val Val Ser Ala Leu Met Leu Pro Ala Leu
```

1 5 10 15

Ala Leu Gly Ala Ala Ile Glu Pro Arg Gly Ala Glu Ile Val Gly Gly
20 25 30

Thr Thr Ala Ala Ala Gly Glu Phe Pro Tyr Ile Val Ser Leu Ser Ser
35 40 45

Gly Gly Ser His Phe Cys Gly Gly Val Leu Ala Asn Ala Asn Thr Val
50 55 60

Ile Thr Ala Gly His Cys Ser Val Asp Phe Ser Ala Ser Gln Val Lys
65 70 75 80

Val Arg Ala Gly Ser Leu Thr Trp Ala Ser Gly Gly Thr Gln Val Gly
85 90 95

Val Ser Ser Ile Thr Val Asn Pro Ser Tyr Thr Thr Lys Asn Gly Val
100 105 110

Pro Asp Phe Asp Val Ala Val Trp Lys Leu Ser Thr Pro Ile Gln Thr
115 120 125

Ser Ser Thr Ile Gly Tyr Val Thr Leu Pro Ala Ser Gly Ser Asp Pro
130 135 140

Ala Ala Gly Thr Thr Leu Thr Thr Ala Gly Trp Gly Thr Thr Ser Glu
145 150 155 160

Asn Ser Asn Ser Leu Pro Ser Arg Leu Asn Lys Val Ser Val Pro Val
165 170 175

Ile Ser Arg Ala Ser Cys Asn Ser Glu Tyr Gly Asn Ile Ile Ser Asn
180 185 190

Asn Met Phe Cys Ala Gly Leu Ser Gln Gly Gly Lys Asp Ser Cys Ser
195 200 205

Gly Asp Ser Gly Gly Pro Ile Val Asp Ser Asn Gly Val Leu Gln Gly
210 215 220

Leu Val Ser Trp Gly Gln Gly Cys Ala Glu Ala Gly Phe Ala Gly Val
225 230 235 240

Tyr Val Arg Leu Gly Asn Leu Leu Ser Phe Val Asn Ser His Leu
245 250 255

<210> 68
<211> 254
<212> PRT
<213> TriviGv29_8_2

<400> 68

Met Ala Pro Val Ser Gln Val Val Ser Ala Leu Met Leu Pro Ala Leu
1 5 10 15

Ala Leu Gly Ala Ala Ile Glu Pro Arg Gly Ala Asp Ile Val Gly Gly
20 25 30

Thr Ala Ala Ala Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Ser Thr
35 40 45

Gln Gly Ser His Phe Cys Gly Gly Val Leu Val Asn Ala Asn Thr Val
50 55 60

Val Thr Ala Ala His Cys Ser Val Asp Phe Thr Ala Ser Gln Val Lys
65 70 75 80

Val Arg Ala Gly Thr Leu Thr Trp Ala Ser Gly Gly Thr Gln Val Gly
85 90 95

Val Ser Lys Ile Ile Val Asn Pro Ser Tyr Asn Ser Arg Thr Thr Asp
100 105 110

Phe Asp Val Ala Val Trp Lys Leu Ala Ser Ser Ile Pro Gln Ser Ser
115 120 125

Thr Ile Gly Tyr Ala Thr Leu Pro Ala Ala Gly Ser Asp Pro Ala Ala
130 135 140

Gly Ser Ile Val Thr Thr Ala Gly Trp Gly Thr Thr Ser Glu Gly Ser
145 150 155 160

Ser Ser Leu Pro Ala Arg Leu Asn Lys Val Ser Ile Pro Val Val Ser
165 170 175

Arg Ala Thr Cys Gln Ser Glu Tyr Gly Arg Ser Ala Ile Thr Thr Asn
180 185 190

Met Phe Cys Ala Ala Gln Ala Gln Gly Gly Lys Asp Ser Cys Gln Gly
195 200 205

Asp Ser Gly Gly Pro Ile Val Asp Ala Asn Gly Val Leu Gln Gly Leu
210 215 220

Val Ser Trp Gly Asn Gly Cys Ala Glu Ala Gly Phe Ala Gly Val Tyr
225 230 235 240

Ser Arg Leu Gly Ala Leu Leu Ser Phe Val Gln Ala Asn Leu
245 250

<210> 69
<211> 254

<212> PRT
<213> Hypocrea lixii

<400> 69

```
Met Ala Pro Val Ser Gln Ile Val Ser Ala Leu Met Leu Pro Ala Leu
1               5                  10                  15

Ala Leu Gly Ala Ala Ile Glu Pro Arg Gly Ala Asp Ile Val Gly Gly
            20                  25                  30

Thr Ala Ala Ala Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Ser Thr
        35                  40                  45

Gln Gly Ser His Phe Cys Gly Gly Val Leu Val Asn Ala Asn Thr Val
    50                  55                  60

Ile Thr Ala Ala His Cys Ser Val Asp Phe Ser Ala Ser Gln Val Lys
65                  70                  75                  80

Val Arg Ala Gly Thr Leu Thr Trp Ala Ser Gly Gly Thr Gln Val Gly
                85                  90                  95

Val Ser Arg Ile Ile Val Asn Pro Ser Tyr Asn Ser Arg Thr Thr Asp
            100                 105                 110

Phe Asp Val Ala Val Trp Lys Leu Ala Ser Ser Ile Pro Glu Ser Ser
        115                 120                 125

Thr Ile Gly Tyr Ala Thr Leu Pro Ala Ala Gly Ser Asp Pro Ala Ala
    130                 135                 140

Gly Ser Ile Val Thr Thr Ala Gly Trp Gly Thr Thr Ser Glu Gly Ser
145                 150                 155                 160

Ser Ser Leu Pro Ala Arg Leu Asn Lys Val Ser Val Pro Val Val Ser
                165                 170                 175

Arg Ala Thr Cys Gln Ser Glu Tyr Gly Arg Ser Ala Val Thr Thr Asn
            180                 185                 190

Met Phe Cys Ala Ala Gln Ala Gln Gly Gly Lys Asp Ser Cys Gln Gly
        195                 200                 205

Asp Ser Gly Gly Pro Ile Val Asp Ala Asn Gly Val Leu Gln Gly Leu
    210                 215                 220

Val Ser Trp Gly Asn Gly Cys Ala Glu Ala Gly Phe Ala Gly Val Tyr
225                 230                 235                 240

Ser Arg Leu Gly Ser Leu Leu Ser Phe Val Gln Ala Asn Leu
                245                 250
```

<210> 70
<211> 258
<212> PRT
<213> Hypocrea lixii

<400> 70

```
Met Ala Pro Val Leu Ala Ile Ala Ser Val Leu Ala Ala Leu Pro Ala
1               5                   10                  15

Leu Thr Met Gly Ala Ala Ile Thr Pro Arg Gly Ser Asp Ile Val Gly
            20                  25                  30

Gly Thr Thr Ala Ala Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Ser
        35                  40                  45

Thr Gly Gly Ser His Phe Cys Gly Gly Val Leu Ile Asp Ser Arg Thr
    50                  55                  60

Val Val Thr Ala Gly His Cys Thr Ile Asp Gln Arg Ala Ser Ser Val
65                  70                  75                  80

Lys Val Arg Ala Gly Thr Leu Thr Trp Ala Ser Gly Gly Thr Gln Val
                85                  90                  95

Gly Val Ser Ser Leu Thr Leu His Pro Ser Tyr Thr Val Asp Ser Gln
            100                 105                 110

Gly Val Pro Asp Asn Asp Val Gly Val Trp His Leu Ala Thr Ala Ile
        115                 120                 125

Pro Thr Ser Ser Thr Ile Gly Tyr Ala Thr Leu Pro Ala Ser Gly Ser
    130                 135                 140

Asp Pro Ala Ala Gly Thr Thr Leu Thr Val Ala Gly Trp Gly Thr Thr
145                 150                 155                 160

Ser Glu Asn Ser Asn Ser Leu Pro Ser Thr Leu Arg Lys Val Ser Val
                165                 170                 175

Pro Val Val Ala Arg Ala Thr Cys Asp Ser Asp Tyr Asp Gly Glu Ile
            180                 185                 190

Ser Asn Asn Met Phe Cys Ala Ala Val Ala Ala Gly Gly Lys Asp Ser
        195                 200                 205

Cys Ser Gly Asp Ser Gly Gly Pro Ile Ile Asp Pro Ser Gly Thr Leu
    210                 215                 220

Val Gly Val Val Ser Trp Gly Gln Gly Cys Ala Glu Arg Gly Phe Pro
225                 230                 235                 240
```

Gly Val Tyr Thr Arg Leu Gly Asn Tyr Val Ser Phe Ile Asn Ser Asn
245 250 255

Arg Gly

<210> 71
<211> 271
<212> PRT
<213> Sclerotinia sclerotiorum

<400> 71

Met Ala Pro Ile Leu Asn Phe Ala Leu Ala Leu Ala Met Pro Ile Leu
1 5 10 15

Ser Met Ala Ala Ala Leu Pro Ser Gly Thr Glu Leu Glu Asn Arg Gly
20 25 30

Thr Thr Leu Thr Gly Thr Val Gly Ile Val Gly Gly Thr Thr Ala Ala
35 40 45

Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Thr Tyr Ala Gly Ser His
50 55 60

Phe Cys Gly Gly Val Leu Leu Asn Ala Tyr Thr Val Leu Thr Ala Ala
65 70 75 80

His Cys Ser Val Ser Tyr Ser Ala Ser Ser Val Lys Val Arg Ala Gly
85 90 95

Thr Leu Thr Trp Ala Ser Gly Gly Thr Gln Val Gly Val Ser Lys Val
100 105 110

Val Val His Pro Ser Tyr Asn Ser Arg Thr Ile Asp Asn Asp Ile Ala
115 120 125

Leu Trp His Leu Ser Thr Ala Ile Pro Ser Ser Ser Thr Ile Gly Tyr
130 135 140

Ala Lys Leu Pro Val Gln Gly Ser Asp Pro Val Val Gly Ser Thr Ala
145 150 155 160

Thr Val Ala Gly Trp Gly Leu Leu Thr Glu Asn Ser Ser Ser Leu Pro
165 170 175

Ala Thr Leu Arg Lys Val Ser Val Pro Val Ile Ser Arg Ser Thr Cys
180 185 190

Gln Ala Glu Tyr Gly Thr Ser Ser Val Thr Thr Asn Met Trp Cys Ala
195 200 205

Gly Val Thr Gly Gly Gly Lys Asp Ser Cys Ser Gly Asp Ser Gly Gly

210 215 220

Pro Ile Ile Asp Ala Ala Thr Gly Val Leu Glu Gly Thr Val Ser Trp
225 230 235 240

Gly Gln Gly Cys Ala Glu Ala Gly Tyr Ala Gly Val Tyr Ser Arg Val
245 250 255

Gly Asn Tyr Val Thr Tyr Ile Gln Ser Ser Leu Trp Thr Ser Leu
260 265 270

<210> 72
<211> 271
<212> PRT
<213> Botryotinia fuckeliana

<400> 72

Met Ala Pro Ile Leu Asn Phe Ala Leu Ala Leu Ala Met Pro Ile Leu
1 5 10 15

Ser Leu Ala Ala Ala Leu Pro Thr Gly Ala Glu Leu Glu Asn Arg Ala
20 25 30

Thr Thr Leu Gly Gly Thr Pro Asp Ile Val Gly Gly Thr Thr Ala Ala
35 40 45

Leu Gly Glu Phe Pro Tyr Ile Val Ser Leu Ser Tyr Ser Gly Ser His
50 55 60

Phe Cys Gly Gly Val Leu Leu Asn Ala Tyr Thr Val Leu Thr Ala Ala
65 70 75 80

His Cys Ser Val Ser Tyr Ser Ala Ser Ser Val Lys Val Arg Ala Gly
85 90 95

Thr Leu Thr Trp Ala Ser Gly Gly Thr Gln Val Gly Val Ser Lys Val
100 105 110

Val Val His Pro Ser Tyr Ser Ser Ser Thr Thr Asn Asn Asp Ile Ala
115 120 125

Leu Trp His Leu Ser Thr Ala Leu Pro Ala Ser Ser Thr Ile Gly Tyr
130 135 140

Ala Lys Leu Pro Val Gln Gly Ser Asp Pro Val Val Gly Ser Thr Thr
145 150 155 160

Thr Val Ala Gly Trp Gly Leu Leu Thr Glu Asn Gly Ser Thr Leu Pro
165 170 175

Ser Thr Leu Arg Lys Val Ser Val Pro Val Ile Ser Arg Ala Ser Cys
180 185 190

```
Gln Ala Glu Tyr Gly Thr Ser Ala Val Thr Thr Asn Met Trp Cys Ala
        195                 200                 205

Gly Tyr Ala Ala Gly Gly Lys Asp Ser Cys Ser Gly Asp Ser Gly Gly
    210                 215                 220

Pro Ile Ile Asp Thr Ala Thr Gly Val Leu Glu Gly Thr Val Ser Trp
225                 230                 235                 240

Gly Gln Gly Cys Ala Glu Ala Gly Tyr Ala Gly Val Tyr Ala Arg Val
                245                 250                 255

Gly Asn Tyr Val Thr Tyr Ile Asn Ser Asn Leu Trp Thr Ser Leu
            260                 265                 270

<210>  73
<211>  263
<212>  PRT
<213>  Phaeosphaeria nodorum

<400>  73

Met His Ala Gln Ser Ile Leu Ala Ala Leu Ala Val Pro Ala Leu Val
1               5                   10                  15

Tyr Gly Ala Ala Ile Pro Gln Glu Phe Pro Glu Asn Trp Asp Glu Thr
            20                  25                  30

Ser Glu Asp Ile Val Gly Gly Val Thr Ala Ala Gln Gly Asp Val Pro
        35                  40                  45

Phe Ile Val Ser Val Ser Leu Ser Gly Val Gly His Tyr Cys Gly Gly
    50                  55                  60

Ser Leu Ile Asn Ala Asn Thr Val Val Ser Ala Ala His Cys Tyr Gln
65                  70                  75                  80

Gly Glu Thr Ala Thr Asp Phe Ser Val Arg Ala Gly Ser Leu Asn Lys
                85                  90                  95

Asn Ser Gly Gly Thr Thr Ser Ala Val Ala Ser Ile Val Ile His Pro
            100                 105                 110

Ser Tyr Asn Ser Arg Thr Ser Asp Asn Asp Ile Ala Ile Ile Lys Leu
        115                 120                 125

Arg Thr Pro Ile Ala Thr Ser Ser Thr Ile Ser Tyr Ala Ser Leu Ala
    130                 135                 140

Ala Ser Gly Gln Asp Pro Ala Ala Gly Thr Thr Leu Thr Val Ala Gly
145                 150                 155                 160
```

```
Trp Gly Ala Thr Thr Gln Gly Gly Gly Ser Pro Thr Thr Leu Arg Lys
                165                 170                 175

Val Asp Val Pro Val Val Ala Arg Thr Thr Cys Arg Ser Arg Tyr Ser
            180                 185                 190

Thr Ile Gly Leu Ser Val Thr Asp Gln Met Phe Cys Ala Gly Phe Thr
        195                 200                 205

Ala Gly Gly Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Ile Ile
    210                 215                 220

Thr Ser Ser Lys Gln Leu Val Gly Ile Val Ser Trp Gly Glu Gly Cys
225                 230                 235                 240

Ala Gln Pro Asn Phe Pro Gly Val Tyr Ser Arg Val Gly Ser Leu Thr
                245                 250                 255

Ser Phe Ile Ser Ala Asn Leu
            260
```

<210> 74
<211> 265
<212> PRT
<213> Leptosphaeria maculans

<400> 74

```
Met Gln Ile Lys Asp Leu Val Val Ala Leu Ala Val Pro Ala Ile Cys
1               5                   10                  15

Ile Ala Ala Ala Ile Pro Thr Pro Gln Asp Pro Val Glu Thr Glu Phe
            20                  25                  30

Pro Glu Glu Ser Gln Glu Asp Ile Val Gly Gly Thr Ala Ala Ala Ala
        35                  40                  45

Gly Glu Phe Pro Tyr Ile Val Ser Leu Gln Arg Ser Gly Ser His Phe
    50                  55                  60

Cys Gly Gly Ser Leu Leu Asn Gly Asn Thr Val Val Thr Ala Ala His
65                  70                  75                  80

Cys Ala Val Gly Leu Ser Gly Thr Ala Val Thr Val Arg Ala Gly Ser
                85                  90                  95

Asn Ser Arg Thr Ser Gly Gly Val Thr Ala Arg Ser Ser Ser Ile Val
            100                 105                 110

Ile Asn Pro Gly Tyr Ser Ser Ser Thr Phe Asp Gly Asp Val Ala Ile
        115                 120                 125
```

```
Ile Lys Leu Ser Thr Ser Ile Pro Thr Ser Asn Thr Ile Ser Tyr Val
    130                 135                 140

Ser Leu Pro Ala Ala Gly Ser Asp Pro Ala Ala Gly Ser Val Ala Thr
145                 150                 155                 160

Val Ala Gly Trp Gly Thr Leu Thr Ser Gly Ser Gln Ser Leu Pro Val
                165                 170                 175

Asn Leu Gln Lys Val Asp Val Pro Ile Val Ser Arg Thr Thr Cys Arg
            180                 185                 190

Ser Asn Tyr Gly Gln Ser Ala Ile Thr Asn Asn Met Ile Cys Ala Gly
        195                 200                 205

Leu Thr Gln Gly Gly Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro
    210                 215                 220

Ile Val Ser Ser Ser Lys Gln Leu Ile Gly Leu Val Ser Trp Gly Asp
225                 230                 235                 240

Gly Cys Ala Ala Pro Gly Lys Pro Gly Val Tyr Thr Arg Val Ala Ala
                245                 250                 255

Val Leu Ser Phe Ile Asn Ala Asn Ser
            260                 265
```

<210> 75
<211> 256
<212> PRT
<213> Verticillium dahliae

<400> 75

```
Met Val Phe Lys Thr Leu Val Ala Ala Leu Gly Phe Thr Ala Val Ala
1               5                   10                  15

Phe Gly Ser Pro Val Pro Ala Pro Gln Glu Glu Leu Gln Ile Val Gly
            20                  25                  30

Gly Val Ala Ala Ser Ala Gly Asp Phe Pro Phe Ile Val Ser Leu Gln
        35                  40                  45

Arg Ser Gly Ser His Phe Cys Gly Gly Ser Leu Leu Asn Ala Asn Thr
    50                  55                  60

Val Leu Thr Ala Ala His Cys Ser Thr Gly Val Ser Ala Ser Ser Val
65                  70                  75                  80

Thr Val Arg Ala Gly Ser Leu Asn Arg Ser Ser Gly Gly Thr Leu Val
                85                  90                  95

Arg Val Ser Ser Ile Val Val Asn Pro Gly Tyr Val Ala Ser Arg Tyr
```

100 105 110

Asp Asn Asp Phe Ala Ile Trp Lys Leu Ala Thr Pro Ile Pro Thr Ser
115 120 125

Ser Thr Ile Ser Tyr Ala Thr Leu Ala Ala Ala Asn Ser Asp Pro Ala
130 135 140

Ala Asn Thr Leu Thr Thr Thr Ala Gly Trp Gly Thr Thr Ser Ser Gly
145 150 155 160

Gly Ser Thr Leu Pro Thr Ala Leu Arg Lys Val Asp Val Pro Ile Ile
165 170 175

Ser Arg Thr Thr Cys Arg Ser Tyr Tyr Gly Thr Ser Ala Val Thr Thr
180 185 190

Asn Met Ile Cys Ala Gly Phe Ala Ala Gly Gly Lys Asp Ser Cys Gln
195 200 205

Gly Asp Ser Gly Gly Pro Ile Ile Glu Ala Ser Ser Arg Thr Leu Val
210 215 220

Gly Val Val Ser Trp Gly Glu Gly Cys Ala Ala Pro Asn Ala Pro Gly
225 230 235 240

Val Tyr Ala Arg Val Gly Ala Ala Arg Thr Phe Ile Asn Gln Tyr Leu
245 250 255

<210> 76
<211> 261
<212> PRT
<213> Cochliobolus carbonum

<400> 76

Met Arg Phe Gln Ser Met Ile Thr Ala Ala Leu Pro Ala Leu Val Leu
1 5 10 15

Ser Ala Pro Thr Pro Gln Trp Asp Asp Val Pro Glu Asp Ser Ile Val
20 25 30

Gly Gly Thr Thr Ala Ala Ala Gly Glu Tyr Pro Phe Ile Val Ser Ile
35 40 45

Gln Leu Gly Gly Arg His Asn Cys Gly Gly Thr Leu Ile Asn Gly Asn
50 55 60

Thr Val Val Thr Ala Ala His Cys Ser Val Ser Ser Ala Ile Gly Gly
65 70 75 80

Ser Ile Asn Asn Val Ala Val Arg Val Gly Ser Leu Ser Ala Asn Ser
85 90 95

```
Gly Gly Gln Val Ile Lys Val Ser Lys Ile Ile Ile His Pro Ser Tyr
            100                 105                 110

Gln Ala Ser Thr Ser Asn Asn Asp Ile Ala Ile Trp Lys Leu Ser Ser
        115                 120                 125

Thr Val Thr Ala Gly Gly Asn Ile Gly Phe Ala Ser Leu Ala Ala Ser
    130                 135                 140

Gly Ser Asp Pro Ala Ser Gly Ser Thr Thr Ser Val Ala Gly Trp Gly
145                 150                 155                 160

Ala Thr Arg Glu Gly Gly Gly Ala Asn Asn Ala Leu Leu Lys Val Ser
                165                 170                 175

Val Pro Ile Val Ala Arg Ser Thr Cys Val Ser Asn Tyr Asn Ala Val
            180                 185                 190

Gly Leu Thr Val Thr Thr Asn Met Val Cys Ala Gly Val Thr Ala Gly
        195                 200                 205

Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Asp Ala
    210                 215                 220

Asn Lys Thr Leu Ile Gly Val Val Ser Trp Gly Thr Gly Cys Ala Arg
225                 230                 235                 240

Pro Asn Leu Pro Gly Val Tyr Ser Arg Val Gly Thr Leu Arg Ser Phe
                245                 250                 255

Ile Asp Gln Asn Ala
            260


<210>  77
<211>  257
<212>  PRT
<213>  Metarhizium acridum

<400>  77

Met Val Ser Arg Ser Ala Ile Ala Ile Ala Ser Ala Val Phe Ala Val
1               5                   10                  15

Gln Ser Ala Thr Ala Ala Pro Ala Lys Gly Gly Lys Phe Ile Val Gly
            20                  25                  30

Gly Gln Ala Ala Asn Glu Gly Glu Phe Pro Phe Ile Val Thr Val Leu
        35                  40                  45

Leu Asn Gly Thr His Tyr Cys Gly Gly Thr Leu Val Asn Glu Asp Thr
    50                  55                  60
```

```
Val Val Thr Ala Ser His Cys Thr Lys Ser Asp Val Ser Gly Tyr Glu
65                  70                  75                  80

Ile Arg Ala Gly Ser Leu Ala Trp Ala Ser Gly Gly Thr Lys Val Lys
                85                  90                  95

Val Ala Ser Ala Val Arg His Pro Gly Tyr Asn Ser Thr Asn Tyr Asp
            100                 105                 110

Asn Asp Val Ala Val Trp Lys Leu Ala Thr Pro Ile Pro Glu Ser Ser
        115                 120                 125

Thr Ile Gln Tyr Ala Lys Leu Pro Ala Gln Gly Ser Asp Pro Ala Ser
    130                 135                 140

Gly Ser Asn Ala Thr Val Ala Gly Trp Gly Arg Leu Thr Glu Gly Gly
145                 150                 155                 160

Thr Val Pro Ala Arg Leu Gln Lys Val Thr Val Pro Val Val Asp Arg
                165                 170                 175

Gly Thr Cys Lys Val Ala Tyr Ser Thr Pro Thr Pro Ser Glu Val Thr
            180                 185                 190

Glu Asn Met Phe Cys Ala Gly Leu Glu Gln Gly Gly Gln Asp Ala Cys
        195                 200                 205

Gln Gly Asp Ser Gly Gly Pro Ile Val Asp Thr Ala Thr Gly Ala Leu
    210                 215                 220

Ile Gly Val Val Ser Trp Gly Val Gly Cys Ala Arg Pro Asp Lys Tyr
225                 230                 235                 240

Gly Val Tyr Thr Arg Leu Gly Asn Tyr Val Asp Phe Val Glu Lys Tyr
                245                 250                 255

Leu
```

<210> 78
<211> 255
<212> PRT
<213> Metarhizium anisopliae

<400> 78

```
Met Ala Ser Lys Ala Ala Leu Ala Ile Ala Ser Ala Ile Phe Ala Val
1               5                   10                  15

Gln Ser Ala Thr Ala Ala Pro Ala Lys Asn Gly Lys Phe Ile Val Gly
            20                  25                  30
```

```
Gly Glu Ala Ala Ala Gln Gly Glu Phe Pro Tyr Ile Val Ala Leu Leu
        35                  40                  45

Ser Gly Asn Phe Gln Phe Cys Gly Gly Thr Leu Val Asn Glu Asp Thr
    50                  55                  60

Val Val Thr Ala Gly His Cys Thr Ser Ser Asp Val Ser Gly Ile Glu
65                  70                  75                  80

Val Arg Ala Gly Ser Leu Ala Trp Ala Ser Gly Gly Thr Lys Val Lys
                85                  90                  95

Val Arg Ser Ala Thr Arg His Pro Asp Tyr Asn Gly Asn Asn Tyr Asp
            100                 105                 110

Asn Asp Val Ala Val Trp Lys Leu Ala Thr Ala Ile Pro Gln Ser Ala
        115                 120                 125

Thr Ile Lys Tyr Ala Lys Leu Pro Ala Pro Asp Ser Asp Pro Ala Pro
    130                 135                 140

Gly Ala Asn Val Thr Val Ala Gly Trp Gly Arg Leu Gln Glu Gly Gly
145                 150                 155                 160

Ala Thr Pro Ser Gln Leu Gln Lys Val Thr Val Pro Val Val Asp Arg
                165                 170                 175

Ala Thr Cys Lys Glu Ala Tyr Ser Thr Pro Thr Pro Leu Glu Ile Thr
            180                 185                 190

Asp Asn Met Phe Cys Ala Gly Leu Pro Gln Gly Gly Gln Asp Ala Cys
        195                 200                 205

Gln Gly Asp Ser Gly Gly Pro Ile Val Gln Gly Asp Val Leu Leu Gly
    210                 215                 220

Val Val Ser Trp Gly Val Gly Cys Ala Arg Pro Asn Lys Tyr Gly Val
225                 230                 235                 240

Tyr Thr Arg Leu Gly Asn Tyr Val Ser Phe Ile Glu Gln Tyr Leu
                245                 250                 255
```

<210> 79
<211> 248
<212> PRT
<213> Fusarium oxysporum

<400> 79

```
Met Val Lys Phe Ala Ser Val Val Ala Leu Val Ala Pro Leu Ala Ala
1               5                   10                  15

Ala Ala Pro Gln Glu Ile Pro Asn Ile Val Gly Gly Thr Ser Ala Ser
```

20 25 30

Ala Gly Asp Phe Pro Phe Ile Val Ser Ile Ser Arg Asn Gly Gly Pro
35 40 45

Trp Cys Gly Gly Ser Leu Leu Asn Ala Asn Thr Val Leu Thr Ala Ala
50 55 60

His Cys Val Ser Gly Tyr Ala Gln Ser Gly Phe Gln Ile Arg Ala Gly
65 70 75 80

Ser Leu Ser Arg Thr Ser Gly Gly Ile Thr Ser Ser Leu Ser Ser Val
85 90 95

Arg Val His Pro Ser Tyr Ser Gly Asn Asn Asn Asp Leu Ala Ile Leu
100 105 110

Lys Leu Ser Thr Ser Ile Pro Ser Gly Gly Asn Ile Gly Tyr Ala Arg
115 120 125

Leu Ala Ala Ser Gly Ser Asp Pro Val Ala Gly Ser Ser Ala Thr Val
130 135 140

Ala Gly Trp Gly Ala Thr Ser Glu Gly Gly Ser Ser Thr Pro Val Asn
145 150 155 160

Leu Leu Lys Val Thr Val Pro Ile Val Ser Arg Ala Thr Cys Arg Ala
165 170 175

Gln Tyr Gly Thr Ser Ala Ile Thr Asn Gln Met Phe Cys Ala Gly Val
180 185 190

Ser Ser Gly Gly Lys Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Ile
195 200 205

Val Asp Ser Ser Asn Thr Leu Ile Gly Ala Val Ser Trp Gly Asn Gly
210 215 220

Cys Ala Arg Pro Asn Tyr Ser Gly Val Tyr Ala Ser Val Gly Ala Leu
225 230 235 240

Arg Ser Phe Ile Asp Thr Tyr Ala
245

<210> 80
<211> 252
<212> PRT
<213> Gibberella zeae

<400> 80

Met Val Lys Ile Thr Ser Leu Val Ala Leu Ala Ala Pro Leu Val Ala
1 5 10 15

```
Ala Ala Pro Asn Pro Gln Asn Ser Pro Gln Ile Val Gly Gly Thr Ser
            20                  25                  30

Ala Ser Ala Gly Glu Phe Pro Phe Ile Val Ser Ile Thr Asn Asn Gly
        35                  40                  45

Gly Pro Trp Cys Gly Gly Thr Leu Leu Asn Ala Asn Thr Val Met Thr
    50                  55                  60

Ala Ser His Cys Val Gln Gly Arg Ser Ala Ser Ala Phe Ala Ile Arg
65                  70                  75                  80

Val Gly Ser Asn Ser Arg Thr Ser Gly Gly Val Thr Ser Arg Val Ser
                85                  90                  95

Ser Ile Arg Met His Pro Ser Phe Ser Gly Ser Thr Leu Asn Asn Asp
            100                 105                 110

Val Ala Leu Leu Lys Leu Ser Thr Ser Ile Pro Ala Gly Gly Ser Ile
        115                 120                 125

Ala Tyr Gly Arg Leu Ala Thr Ser Gly Ser Asp Pro Ala Ala Gly Ser
    130                 135                 140

Ser Leu Thr Val Ala Gly Trp Gly Asp Thr Ser Glu Gly Gly Gly Val
145                 150                 155                 160

Ser Pro Val Asn Leu Leu Lys Val Thr Val Pro Val Val Ser Arg Ala
                165                 170                 175

Thr Cys Arg Ser Gln Tyr Gly Thr Ser Ala Ile Thr Asp Asn Met Phe
            180                 185                 190

Cys Ala Gly Val Thr Gly Gly Gly Lys Asp Ala Cys Gln Gly Asp Ser
        195                 200                 205

Gly Gly Pro Ile Val Asp Ser Ser Lys Thr Val Val Gly Ile Val Ser
    210                 215                 220

Trp Gly Asp Gly Cys Ala Arg Pro Asn Ala Ala Gly Val Tyr Ala Arg
225                 230                 235                 240

Val Gly Thr Leu Arg Ser Trp Ile Asp Ser Asn Ala
                245                 250
```

<210> 81
<211> 256
<212> PRT
<213> Metarhizium anisopliae

<400> 81

```
Met Glu Leu Lys Ser Leu Leu Ala Val Tyr Leu Pro Leu Cys Ala Ala
1               5                  10                  15

Pro Leu Ala Ala Ala Arg Pro Ala Ser Asn Ala Val Phe Ile Val Gly
            20                  25                  30

Gly Ser Pro Ala Ala Ala Gly Glu Phe Pro Phe Ile Val Ser Thr Leu
        35                  40                  45

Leu Asn Gly Arg His Trp Cys Gly Gly Val Leu Leu Asn Ala Asn Thr
    50                  55                  60

Val Leu Thr Ala Ala His Cys Val Glu Ser Thr Pro Ala Ile Ser Gln
65                  70                  75                  80

Val Arg Ala Gly Ser Leu Ala His Ala Ser Gly Gly Val Val Ala Asn
                85                  90                  95

Ile Ser Ser Ile Thr Pro His Pro Lys Tyr Glu Gly Leu Gly Tyr Asp
            100                 105                 110

Met Ala Ile Leu Lys Leu Ser Thr Pro Ile Glu Ala Asn Gly Thr Ile
        115                 120                 125

Gly Tyr Ala Thr Leu Pro Glu Ala Gly Ser Asp Pro Val Ala Gly Ala
    130                 135                 140

Asp Ala Thr Val Ala Gly Trp Gly Asp Leu Glu Tyr Ala Gly Gln Ala
145                 150                 155                 160

Pro Glu Glu Leu Gln Lys Val Thr Val Pro Val Val Asp Arg Ala Thr
                165                 170                 175

Cys Ser Ala Ala Tyr Gln Ala Ile Pro Asn Met Pro Asn Ile Thr Asp
            180                 185                 190

Ala Met Phe Cys Ala Gly Leu Lys Glu Gly Gly Gln Asp Ala Cys Asn
        195                 200                 205

Gly Asp Ser Gly Gly Pro Ile Ile Asp Thr Glu Thr Arg Val Leu Ile
    210                 215                 220

Gly Val Val Ser Trp Gly Tyr Lys Cys Ala Ala Pro Asn Ala Tyr Gly
225                 230                 235                 240

Val Tyr Thr Arg Leu Gly Ala Asp Ile Glu Phe Ile Lys Ser His Leu
                245                 250                 255
```

<210> 82
<211> 882
<212> PRT

<213> Trichoderma reesei

<400> 82

```
Met Val Arg Ser Ala Leu Phe Val Ser Leu Leu Ala Thr Phe Ser Gly
1               5                  10                  15

Val Ile Ala Arg Val Ser Gly His Gly Ser Lys Ile Val Pro Gly Ala
            20                  25                  30

Tyr Ile Phe Glu Phe Glu Asp Ser Gln Asp Thr Ala Asp Phe Tyr Lys
        35                  40                  45

Lys Leu Asn Gly Glu Gly Ser Thr Arg Leu Lys Phe Asp Tyr Lys Leu
    50                  55                  60

Phe Lys Gly Val Ser Val Gln Leu Lys Asp Leu Asp Asn His Glu Ala
65                  70                  75                  80

Lys Ala Gln Gln Met Ala Gln Leu Pro Ala Val Lys Asn Val Trp Pro
                85                  90                  95

Val Thr Leu Ile Asp Ala Pro Asn Pro Lys Val Glu Trp Val Ala Gly
            100                 105                 110

Ser Thr Ala Pro Thr Leu Glu Ser Arg Ala Ile Lys Lys Pro Pro Ile
        115                 120                 125

Pro Asn Asp Ser Ser Asp Phe Pro Thr His Gln Met Thr Gln Ile Asp
    130                 135                 140

Lys Leu Arg Ala Lys Gly Tyr Thr Gly Lys Gly Val Arg Val Ala Val
145                 150                 155                 160

Ile Asp Thr Gly Ile Asp Tyr Thr His Pro Ala Leu Gly Gly Cys Phe
                165                 170                 175

Gly Arg Gly Cys Leu Val Ser Phe Gly Thr Asp Leu Val Gly Asp Asp
            180                 185                 190

Tyr Thr Gly Phe Asn Thr Pro Val Pro Asp Asp Asp Pro Val Asp Cys
        195                 200                 205

Ala Gly His Gly Ser His Val Ala Gly Ile Ile Ala Ala Gln Glu Asn
    210                 215                 220

Pro Tyr Gly Phe Thr Gly Gly Ala Pro Asp Val Thr Leu Gly Ala Tyr
225                 230                 235                 240

Arg Val Phe Gly Cys Asp Gly Gln Ala Gly Asn Asp Val Leu Ile Ser
                245                 250                 255
```

```
Ala Tyr Asn Gln Ala Phe Glu Asp Gly Ala Gln Ile Ile Thr Ala Ser
            260                 265                 270

Ile Gly Gly Pro Ser Gly Trp Ala Glu Glu Pro Trp Ala Val Ala Val
        275                 280                 285

Thr Arg Ile Val Glu Ala Gly Val Pro Cys Thr Val Ser Ala Gly Asn
    290                 295                 300

Glu Gly Asp Ser Gly Leu Phe Phe Ala Ser Thr Ala Ala Asn Gly Lys
305                 310                 315                 320

Lys Val Ile Ala Val Ala Ser Val Asp Asn Glu Asn Ile Pro Ser Val
                325                 330                 335

Leu Ser Val Ala Ser Tyr Lys Ile Asp Ser Gly Ala Ala Gln Asp Phe
            340                 345                 350

Gly Tyr Val Ser Ser Ser Lys Ala Trp Asp Gly Val Ser Lys Pro Leu
        355                 360                 365

Tyr Ala Val Ser Phe Asp Thr Thr Ile Pro Asp Asp Gly Cys Ser Pro
    370                 375                 380

Leu Pro Asp Ser Thr Pro Asp Leu Ser Asp Tyr Ile Val Leu Val Arg
385                 390                 395                 400

Arg Gly Thr Cys Thr Phe Val Gln Lys Ala Gln Asn Val Ala Ala Lys
                405                 410                 415

Gly Ala Lys Tyr Leu Leu Tyr Tyr Asn Asn Ile Pro Gly Ala Leu Ala
            420                 425                 430

Val Asp Val Ser Ala Val Pro Glu Ile Glu Ala Val Gly Met Val Asp
        435                 440                 445

Asp Lys Thr Gly Ala Thr Trp Ile Ala Ala Leu Lys Asp Gly Lys Thr
    450                 455                 460

Val Thr Leu Thr Leu Thr Asp Pro Ile Glu Ser Glu Lys Gln Ile Gln
465                 470                 475                 480

Phe Ser Asp Asn Pro Thr Thr Gly Gly Ala Leu Ser Gly Tyr Thr Thr
                485                 490                 495

Trp Gly Pro Thr Trp Glu Leu Asp Val Lys Pro Gln Ile Ser Ser Pro
            500                 505                 510

Gly Gly Asn Ile Leu Ser Thr Tyr Pro Val Ala Leu Gly Gly Tyr Ala
        515                 520                 525
```

```
Thr Leu Ser Gly Thr Ser Met Ala Cys Pro Leu Thr Ala Ala Ala Val
    530                 535                 540

Ala Leu Ile Gly Gln Ala Arg Gly Thr Phe Asp Pro Ala Leu Ile Asp
545                 550                 555                 560

Asn Leu Leu Ala Thr Thr Ala Asn Pro Gln Leu Phe Asn Asp Gly Glu
                565                 570                 575

Lys Phe Tyr Asp Phe Leu Ala Pro Val Pro Gln Gln Gly Gly Gly Leu
            580                 585                 590

Ile Gln Ala Tyr Asp Ala Ala Phe Ala Thr Thr Leu Leu Ser Pro Ser
        595                 600                 605

Ser Leu Ser Phe Asn Asp Thr Asp His Phe Ile Lys Lys Lys Gln Ile
    610                 615                 620

Thr Leu Lys Asn Thr Ser Lys Gln Arg Val Thr Tyr Lys Leu Asn His
625                 630                 635                 640

Val Pro Thr Asn Thr Phe Tyr Thr Leu Ala Pro Gly Asn Gly Tyr Pro
                645                 650                 655

Ala Pro Phe Pro Asn Asp Ala Val Ala Ala His Ala Asn Leu Lys Phe
            660                 665                 670

Asn Leu Gln Gln Val Thr Leu Pro Ala Gly Arg Ser Ile Thr Val Asp
        675                 680                 685

Val Phe Pro Thr Pro Pro Arg Asp Val Asp Ala Lys Arg Leu Ala Leu
    690                 695                 700

Trp Ser Gly Tyr Ile Thr Val Asn Gly Thr Asp Gly Thr Ser Leu Ser
705                 710                 715                 720

Val Pro Tyr Gln Gly Leu Thr Gly Ser Leu His Lys Gln Lys Val Leu
                725                 730                 735

Tyr Pro Glu Asp Ser Trp Ile Ala Asp Ser Thr Asp Glu Ser Leu Ala
            740                 745                 750

Pro Val Glu Asn Gly Thr Val Phe Thr Ile Pro Ala Pro Gly Asn Ala
        755                 760                 765

Gly Pro Asp Asp Lys Leu Pro Ser Leu Val Val Ser Pro Ala Leu Gly
    770                 775                 780

Ser Arg Tyr Val Arg Val Asp Leu Val Leu Leu Ser Ala Pro Pro His
785                 790                 795                 800
```

```
Gly Thr Lys Leu Lys Thr Val Lys Phe Leu Asp Thr Thr Ser Ile Gly
                805                 810                 815

Gln Pro Ala Gly Ser Pro Leu Leu Trp Ile Ser Arg Gly Ala Asn Pro
            820                 825                 830

Ile Ala Trp Thr Gly Glu Leu Ser Asp Asn Lys Phe Ala Pro Pro Gly
        835                 840                 845

Thr Tyr Lys Ala Val Phe His Ala Leu Arg Ile Phe Gly Asn Glu Lys
    850                 855                 860

Lys Lys Glu Asp Trp Asp Val Ser Glu Ser Pro Ala Phe Thr Ile Lys
865                 870                 875                 880

Tyr Ala
```

<210> 83
<211> 884
<212> PRT
<213> Trichoderma atroviride

<400> 83

```
Met Val Arg Ser Ala Leu Phe Val Ser Leu Leu Ala Thr Ile Thr Gly
1               5                   10                  15

Ala Ile Ala Arg Gly Ser Gly His Ala Ser Lys Ile Val Pro Gly Ala
            20                  25                  30

Tyr Ile Phe Glu Phe Glu Asn Asp His Asp Thr Ala Glu Phe Tyr Lys
        35                  40                  45

Gln Leu Asn Gly Glu Gly Ser Thr Arg Met Lys Phe Asp Tyr Lys Leu
    50                  55                  60

Phe Lys Gly Val Ser Val Gln Leu Lys Asp Leu Ser Asn His Glu Asp
65                  70                  75                  80

Lys Ala Gln Lys Met Ala Gln Leu Pro Ala Val Lys Asn Met Trp Pro
                85                  90                  95

Val Thr Leu Ile Gln Ala Pro Asn Pro Lys Val Glu Trp Val Ala Gly
            100                 105                 110

Thr Asn Ser Leu Pro Ser Ile Gln Ser Arg Asp Val Tyr Pro Pro Pro
        115                 120                 125

Thr Asp Asp Gly Asn Phe Pro Pro His Lys Met Val Gln Ile Asp Lys
    130                 135                 140

Leu Arg Ala Lys Gly Tyr Thr Gly Lys Gly Val Lys Val Ala Val Ile
```

```
145                 150                 155                 160

Asp Thr Gly Ile Asp Tyr Thr His Pro Ala Leu Gly Gly Cys Tyr Gly
                165                 170                 175

Ala Gly Cys Leu Val Ser Phe Gly Thr Asp Leu Val Gly Asp Asn Tyr
            180                 185                 190

Ser Gly Phe Asn Thr Pro Val Pro Asp Asn Asp Pro Lys Asp Cys Ala
        195                 200                 205

Gly His Gly Thr His Val Ala Gly Ile Ile Ala Ala Gln Lys Asn Gln
    210                 215                 220

Tyr Gly Phe Thr Gly Gly Ala Pro Asp Val Thr Leu Gly Ala Tyr Arg
225                 230                 235                 240

Val Phe Gly Cys Glu Gly Gln Ala Gly Asn Asp Val Leu Ile Ala Ala
                245                 250                 255

Tyr Asn Lys Ala Phe Glu Asp Gly Ala Gln Ile Ile Thr Ala Ser Ile
            260                 265                 270

Gly Gly Pro Ser Gly Trp Ala Glu Glu Pro Trp Ala Val Ala Val Thr
        275                 280                 285

Arg Ile Val Asn Ala Gly Val Pro Cys Thr Val Ser Ala Gly Asn Asp
    290                 295                 300

Gly Asp His Gly Leu Phe Tyr Ala Ser Thr Ala Ala Asn Gly Lys Lys
305                 310                 315                 320

Val Leu Ala Val Ala Ser Val Asp Asn Gln Asn Ile Pro Thr Val Phe
                325                 330                 335

Ser Leu Ser Ser Tyr Lys Ile Asp Ser Gly Ala Asp Thr Lys Phe Gly
            340                 345                 350

Tyr Val Pro Ser Ser Lys Gly Ala Glu Gly Trp Lys Gly Val Thr Lys
        355                 360                 365

Pro Val Tyr Ala Leu Thr Leu Asp Thr Thr Ile Ala Asp Asp Gly Cys
    370                 375                 380

Ser Pro Leu Pro Asp Asn Thr Pro Asp Leu Ser Asp His Ile Val Leu
385                 390                 395                 400

Val Arg Arg Gly Ser Cys Thr Phe Val Gln Lys Ala Gln Asn Val Ala
                405                 410                 415

Ala Lys Gly Gly Lys Tyr Leu Leu Tyr Tyr Asn Thr Ile Ala Gly Ala
```

420 425 430

Leu Ser Val Glu Val Ser Ser Val Pro Gln Ile Ile Gly Ala Gly Met
435 440 445

Val Glu Asp Ser Thr Gly Ala Thr Trp Ile Ala Ala Ile Lys Ala Gly
450 455 460

Lys Thr Val Thr Leu Ser Met Val Ala Leu Asn Glu Ala Thr Lys Gln
465 470 475 480

Val Gln Phe Ala Asp Asn Lys Ala Thr Gly Gly Ala Leu Ser Thr Tyr
485 490 495

Thr Ser Trp Gly Pro Thr Trp Glu Met Asp Val Lys Pro Gln Ile Ser
500 505 510

Ser Pro Gly Gly Asn Ile Leu Ser Thr Tyr Pro Val Ala Leu Gly Gly
515 520 525

Tyr Ala Thr Leu Ser Gly Thr Ser Met Ala Cys Pro Leu Thr Ala Ala
530 535 540

Ala Val Ala Leu Val Ala Gln Ala Arg Ser Ser Phe Asp Pro Val Leu
545 550 555 560

Leu Glu Asn Leu Leu Ala Thr Thr Ala Asn Pro Gln Leu Phe Asn Asp
565 570 575

Gly Thr Gln Phe Tyr Asp Phe Leu Ala Pro Val Ala Gln Gln Gly Gly
580 585 590

Gly Leu Ile Gln Ala Tyr Asp Ala Ala Phe Ala Thr Thr Leu Leu Ser
595 600 605

Pro Ser Ser Leu Ser Phe Asn Asp Thr Asp His Phe Ile Ser Lys Arg
610 615 620

Gln Ile Thr Leu Lys Asn Thr Ser Lys Asn Arg Val Thr Tyr Lys Ile
625 630 635 640

Gly His Val Pro Thr Asp Thr Phe Tyr Thr Leu Ala Asn Ser Ser Gly
645 650 655

Tyr Ala Ala Pro Phe Pro Asn Asp Ala Val Ala Ser His Ala Ser Val
660 665 670

Arg Leu Ser Gln Gln Gln Val Thr Val Pro Ala Gly Arg Ser Ile Thr
675 680 685

Val Asp Val Phe Pro Thr Pro Pro Arg Gly Val Asp Ala Lys Arg Leu

690 695 700

Gly Leu Trp Ser Gly Tyr Ile Thr Val Asn Gly Thr Asp Gly Ser His
705 710 715 720

Leu Ser Val Pro Tyr Gln Gly Leu Thr Gly Ser Leu Gln Lys Gln Gln
725 730 735

Val Leu Phe Pro Glu Asp Ser Trp Ile Ser Asn Ser Thr Asp Thr Asn
740 745 750

Leu Asn Pro Val Ala Asn Gly Thr Val Phe Thr Ile Pro Gly Pro Gly
755 760 765

Asn Ala Gly Pro Ser Asp Val Leu Pro Ala Leu Val Val Ser Pro Ala
770 775 780

Leu Gly Thr Arg Leu Val Arg Ala Asp Leu Val Leu Leu Ser Ala Pro
785 790 795 800

Pro His Gly Ser Lys Ile Thr Thr Lys Lys Phe Phe Asp Thr Thr Ser
805 810 815

Ile Gly Gln Pro Ser Gly Ser Pro Leu Leu Trp Gln Ser Arg Gly Pro
820 825 830

Thr Pro Ile Ser Trp Ser Gly Glu Leu Thr Asp Asn Lys Phe Ala Pro
835 840 845

Pro Gly Thr Tyr Lys Val Val Phe His Ala Leu Arg Ile Phe Gly Asn
850 855 860

Glu Lys Lys Lys Glu Asp Trp Tyr Val Ser Glu Ser Pro Ala Phe Thr
865 870 875 880

Ile Lys Tyr Ala

<210> 84
<211> 827
<212> PRT
<213> Trichoderma atroviride

<400> 84

Met Lys Phe Asp Tyr Lys Leu Phe Lys Gly Val Ser Val Gln Leu Lys
1 5 10 15

Asp Leu Ser Asn His Glu Asp Lys Ala Gln Lys Met Ala Gln Leu Pro
20 25 30

Ala Val Lys Asn Met Trp Pro Val Thr Leu Ile Gln Ala Pro Asn Pro
35 40 45

```
Lys Val Glu Trp Val Ala Gly Thr Asn Ser Leu Pro Ser Ile Gln Ser
    50                  55                  60

Arg Asp Val Tyr Pro Pro Pro Thr Asp Asp Gly Asn Phe Pro Pro His
65                  70                  75                  80

Lys Met Val Gln Ile Asp Lys Leu Arg Ala Lys Gly Tyr Thr Gly Lys
                85                  90                  95

Gly Val Lys Val Ala Val Ile Asp Thr Gly Ile Asp Tyr Thr His Pro
            100                 105                 110

Ala Leu Gly Gly Cys Tyr Gly Ala Gly Cys Leu Val Ser Phe Gly Thr
        115                 120                 125

Asp Leu Val Gly Asp Asn Tyr Ser Gly Phe Asn Thr Pro Val Pro Asp
    130                 135                 140

Asn Asp Pro Lys Asp Cys Ala Gly His Gly Thr His Val Ala Gly Ile
145                 150                 155                 160

Ile Ala Ala Gln Lys Asn Gln Tyr Gly Phe Thr Gly Gly Ala Pro Asp
                165                 170                 175

Val Thr Leu Gly Ala Tyr Arg Val Phe Gly Cys Glu Gly Gln Ala Gly
            180                 185                 190

Asn Asp Val Leu Ile Ala Ala Tyr Asn Lys Ala Phe Glu Asp Gly Ala
        195                 200                 205

Gln Ile Ile Thr Ala Ser Ile Gly Gly Pro Ser Gly Trp Ala Glu Glu
    210                 215                 220

Pro Trp Ala Val Ala Val Thr Arg Ile Val Asn Ala Gly Val Pro Cys
225                 230                 235                 240

Thr Val Ser Ala Gly Asn Asp Gly Asp His Gly Leu Phe Tyr Ala Ser
                245                 250                 255

Thr Ala Ala Asn Gly Lys Lys Val Leu Ala Val Ala Ser Val Asp Asn
            260                 265                 270

Gln Asn Ile Pro Thr Val Phe Ser Leu Ser Ser Tyr Lys Ile Asp Ser
        275                 280                 285

Gly Ala Asp Thr Lys Phe Gly Tyr Val Pro Ser Ser Lys Gly Ala Glu
    290                 295                 300

Gly Trp Lys Gly Val Thr Lys Pro Val Tyr Ala Leu Thr Leu Asp Thr
305                 310                 315                 320
```

```
Thr Ile Ala Asp Asp Gly Cys Ser Pro Leu Pro Asp Asn Thr Pro Asp
                325                 330                 335

Leu Ser Asp His Ile Val Leu Val Arg Arg Gly Ser Cys Thr Phe Val
            340                 345                 350

Gln Lys Ala Gln Asn Val Ala Ala Lys Gly Gly Lys Tyr Leu Leu Tyr
        355                 360                 365

Tyr Asn Thr Ile Ala Gly Ala Leu Ser Val Glu Val Ser Ser Val Pro
    370                 375                 380

Gln Ile Ile Gly Ala Gly Met Val Glu Asp Ser Thr Gly Ala Thr Trp
385                 390                 395                 400

Ile Ala Ala Ile Lys Ala Gly Lys Thr Val Thr Leu Ser Met Val Ala
                405                 410                 415

Leu Asn Glu Ala Thr Lys Gln Val Gln Phe Ala Asp Asn Lys Ala Thr
            420                 425                 430

Gly Gly Ala Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr Trp Glu Met
        435                 440                 445

Asp Val Lys Pro Gln Ile Ser Ser Pro Gly Gly Asn Ile Leu Ser Thr
    450                 455                 460

Tyr Pro Val Ala Leu Gly Gly Tyr Ala Thr Leu Ser Gly Thr Ser Met
465                 470                 475                 480

Ala Cys Pro Leu Thr Ala Ala Ala Val Ala Leu Val Ala Gln Ala Arg
                485                 490                 495

Ser Ser Phe Asp Pro Val Leu Leu Glu Asn Leu Leu Ala Thr Thr Ala
            500                 505                 510

Asn Pro Gln Leu Phe Asn Asp Gly Thr Gln Phe Tyr Asp Phe Leu Ala
        515                 520                 525

Pro Val Ala Gln Gln Gly Gly Gly Leu Ile Gln Ala Tyr Asp Ala Ala
    530                 535                 540

Phe Ala Thr Thr Leu Leu Ser Pro Ser Ser Leu Ser Phe Asn Asp Thr
545                 550                 555                 560

Asp His Phe Ile Ser Lys Arg Gln Ile Thr Leu Lys Asn Thr Ser Lys
                565                 570                 575

Asn Arg Val Thr Tyr Lys Ile Gly His Val Pro Thr Asp Thr Phe Tyr
            580                 585                 590
```

```
Thr Leu Ala Asn Ser Ser Gly Tyr Ala Ala Pro Phe Pro Asn Asp Ala
        595                 600                 605

Val Ala Ser His Ala Ser Val Arg Leu Ser Gln Gln Gln Val Thr Val
    610                 615                 620

Pro Ala Gly Arg Ser Ile Thr Val Asp Val Phe Pro Thr Pro Pro Arg
625                 630                 635                 640

Gly Val Asp Ala Lys Arg Leu Gly Leu Trp Ser Gly Tyr Ile Thr Val
                645                 650                 655

Asn Gly Thr Asp Gly Ser His Leu Ser Val Pro Tyr Gln Gly Leu Thr
            660                 665                 670

Gly Ser Leu Gln Lys Gln Gln Val Leu Phe Pro Glu Asp Ser Trp Ile
        675                 680                 685

Ser Asn Ser Thr Asp Thr Asn Leu Asn Pro Val Ala Asn Gly Thr Val
    690                 695                 700

Phe Thr Ile Pro Gly Pro Gly Asn Ala Gly Pro Ser Asp Val Leu Pro
705                 710                 715                 720

Ala Leu Val Val Ser Pro Ala Leu Gly Thr Arg Leu Val Arg Ala Asp
                725                 730                 735

Leu Val Leu Leu Ser Ala Pro Pro His Gly Ser Lys Ile Thr Thr Lys
            740                 745                 750

Lys Phe Phe Asp Thr Thr Ser Ile Gly Gln Pro Ser Gly Ser Pro Leu
        755                 760                 765

Leu Trp Gln Ser Arg Gly Pro Thr Pro Ile Ser Trp Ser Gly Glu Leu
    770                 775                 780

Thr Asp Asn Lys Phe Ala Pro Pro Gly Thr Tyr Lys Val Val Phe His
785                 790                 795                 800

Ala Leu Arg Ile Phe Gly Asn Glu Lys Lys Lys Glu Asp Trp Tyr Val
                805                 810                 815

Ser Glu Ser Pro Ala Phe Thr Ile Lys Tyr Ala
            820                 825
```

<210> 85
<211> 878
<212> PRT
<213> Trichoderma virens

<400> 85

```
Met Val Arg Ser Ala Leu Phe Val Ser Leu Leu Ala Thr Ile Ser Gly
1               5                  10                  15

Val Ile Ala Arg Gly Ser Gly His Pro Ser Lys Val Val Pro Gly Ala
            20                  25                  30

Tyr Ile Phe Glu Phe Glu Asn Asp Gln Asp Thr Ala Asp Phe Tyr Lys
        35                  40                  45

Gln Leu Asn Gly Glu Gly Ser Thr Arg Met Lys Phe Asn Tyr Lys Leu
    50                  55                  60

Phe Lys Gly Val Ser Val Gln Leu Lys Asp Leu Ser Asn His Glu Asp
65                  70                  75                  80

Lys Ala Gln Lys Met Ala Gln Leu Pro Ala Val Lys Asn Met Trp Pro
                85                  90                  95

Val Thr Leu Ile Gln Ala Pro Asn Pro Lys Val Glu Trp Val Ala Ser
            100                 105                 110

Ser Ser Ser Pro Ala Leu Gln Ala Arg Asp Val Ser Pro Thr Asp Pro
        115                 120                 125

Ser Asn Phe Pro Pro Gln Gln Met Thr Gln Ile Asp Lys Leu Arg Ala
    130                 135                 140

Lys Gly Phe Thr Gly Lys Gly Val Lys Leu Ala Val Ile Asp Thr Gly
145                 150                 155                 160

Ile Asp Tyr Thr His Pro Ala Leu Gly Gly Cys Phe Gly Ala Gly Cys
                165                 170                 175

Leu Val Ser Phe Gly Thr Asp Leu Val Gly Asp Asn Tyr Ser Gly Phe
            180                 185                 190

Asn Thr Pro Val Pro Asp Asn Asp Pro Met Asp Cys Ala Gly His Gly
        195                 200                 205

Ser His Val Ala Gly Ile Ile Ala Ala Gln Lys Asn Pro Tyr Gly Phe
    210                 215                 220

Thr Gly Gly Ala Pro Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly
225                 230                 235                 240

Cys Ala Gly Gln Ala Gly Asn Asp Val Leu Ile Ala Ala Tyr Asn Lys
                245                 250                 255

Ala Phe Glu Asp Gly Ala Gln Ile Ile Thr Ala Ser Ile Gly Gly Pro
            260                 265                 270
```

```
Ser Gly Trp Ala Glu Glu Pro Trp Ala Val Ala Val Ser Arg Ile Val
        275                 280                 285

Asp Ala Gly Val Pro Cys Thr Val Ser Ala Gly Asn Asp Gly Asp His
    290                 295                 300

Gly Leu Phe Tyr Ala Ser Thr Ala Ala Asn Gly Lys Lys Val Leu Ala
305                 310                 315                 320

Val Ala Ser Val Asp Asn Ala Asn Ile Pro Thr Val Phe Ser Leu Ser
                325                 330                 335

Ser Tyr Lys Val Asp Asn Gly Asp Ala Gln Gln Phe Gly Tyr Val Ser
            340                 345                 350

Ser Ala Lys Ala Trp Lys Gly Val Asn Lys Pro Ile Tyr Ala Val Thr
        355                 360                 365

Leu Asp Thr Thr Ile Pro Asn Asp Ala Cys Asp Pro Leu Pro Asp Ser
    370                 375                 380

Thr Pro Asp Leu Ser Asn Tyr Ile Val Leu Val Arg Arg Gly Thr Cys
385                 390                 395                 400

Thr Phe Val Gln Lys Ala Gln Asn Val Ala Ala Lys Gly Ala Lys Tyr
                405                 410                 415

Leu Leu Tyr Tyr Asn Thr Ala Ala Gly Ala Leu Ala Val Asp Val Ser
            420                 425                 430

Thr Val Thr Gln Ile Thr Ala Ala Gly Met Val Gln Asp Ser Thr Gly
        435                 440                 445

Ala Ala Trp Ile Ala Ala Leu Lys Asp Gly Lys Thr Val Thr Leu Ser
    450                 455                 460

Met Val Asn Ser Asp Glu Ala Thr Lys Gln Ile Gln Phe Ala Asp Asn
465                 470                 475                 480

Lys Val Thr Gly Gly Ala Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr
                485                 490                 495

Trp Glu Val Asp Val Lys Pro Gln Ile Ser Ser Pro Gly Gly Asn Ile
            500                 505                 510

Leu Ser Thr Tyr Pro Val Ala Lys Gly Gly Tyr Ala Thr Leu Ser Gly
        515                 520                 525

Thr Ser Met Ala Cys Pro Leu Thr Ala Ala Ala Val Ala Leu Val Gly
    530                 535                 540
```

```
Gln Ala Arg Lys Thr Phe Asp Pro Val Leu Leu Glu Asn Leu Leu Ala
545                 550                 555                 560

Thr Thr Ala Asn Pro Gln Leu Phe Asn Asp Gly Ala Gln Phe Tyr Asn
                565                 570                 575

Phe Leu Ala Pro Val Ala Gln Gln Gly Gly Gly Leu Ile Gln Ala Tyr
            580                 585                 590

Asp Ala Ala Phe Ala Thr Thr Leu Leu Ser Pro Ser Ser Leu Ser Phe
        595                 600                 605

Asn Asp Thr Asp His Phe Val Arg Lys Arg Gln Ile Thr Leu Lys Asn
    610                 615                 620

Thr Ser Lys Gln Arg Val Thr Tyr Lys Leu Asn His Val Pro Thr Asn
625                 630                 635                 640

Thr Phe Tyr Thr Leu Thr Gly Asp Ser Pro Tyr Pro Ala Pro Phe Pro
                645                 650                 655

Asn Asp Ala Ile Ala Ala His Ala Thr Val Arg Leu Gly Leu Glu Gln
            660                 665                 670

Val Thr Leu Pro Ala Gly Arg Ser Ile Thr Ile Asp Val Leu Pro Thr
        675                 680                 685

Pro Pro Arg Gly Val Asp Ala Lys Arg Leu Gly Leu Trp Ser Gly Tyr
    690                 695                 700

Ile Thr Val Asn Gly Thr Asp Gly Ser Ala Leu Ser Val Pro Tyr Gln
705                 710                 715                 720

Gly Leu Thr Gly Ser Leu His Lys Gln Lys Val Leu Tyr Pro Ala Asp
                725                 730                 735

Ser Trp Ile Ser Lys Ser Thr Asp Glu Asn Leu Asn Pro Val Asp Asn
            740                 745                 750

Gly Thr Val Phe Thr Ile Pro Ala Pro Gly Asn Ala Gln Ser Thr Asp
        755                 760                 765

Val Leu Pro Ser Leu Val Val Ser Pro Ala Phe Gly Ser Arg Leu Val
    770                 775                 780

Arg Val Asp Leu Val Leu Leu Ser Ala Pro Pro Lys Asn Thr Lys Val
785                 790                 795                 800

Lys Thr Thr Lys Phe Leu Asp Thr Thr Ser Ile Gly Gln Pro Ala Gly
                805                 810                 815
```

```
Ser Pro Leu Leu Trp Ala Ser Arg Gly Ala Thr Pro Leu Ser Trp Ser
            820                 825                 830

Gly Glu Leu Thr Asp Asn Lys Phe Ala Pro Pro Gly Thr Tyr Lys Ala
        835                 840                 845

Val Phe His Ala Leu Arg Ile Phe Gly Asn Glu Lys Lys Lys Glu Asp
    850                 855                 860

Trp Asp Val Ser Glu Ser Pro Ala Phe Thr Ile Lys Tyr Ala
865                 870                 875
```

<210> 86
<211> 878
<212> PRT
<213> Hypocrea lixii

<400> 86

```
Met Val Arg Ser Ala Val Phe Leu Ser Leu Leu Ala Thr Ile Ser Gly
1               5                   10                  15

Val Ile Ala Arg Gly Ser Gly Gln Thr Ser Lys Val Val Pro Gly Ala
            20                  25                  30

Tyr Ile Phe Glu Phe Glu Asn Asp Gln Asp Thr Ala Ala Phe Tyr Lys
        35                  40                  45

Gln Leu Asn Gly Glu Gly Ser Thr Arg Met Lys Phe Asn Tyr Lys Leu
    50                  55                  60

Phe Lys Gly Val Ser Val Gln Leu Lys Asp Leu Ser Asn His Glu Ser
65                  70                  75                  80

Lys Ala Gln Lys Met Ala Gln Leu Pro Ala Val Lys Asn Met Trp Pro
                85                  90                  95

Val Thr Leu Ile Gln Ala Pro Asn Pro Lys Val Glu Trp Val Ala Ser
            100                 105                 110

Ser Thr Ser Pro Ala Leu Gln Ala Arg Asp Val Ser Pro Thr Asp Pro
        115                 120                 125

Ser Asn Phe Pro Pro His Gln Met Val Gln Ile Asp Lys Leu Arg Ala
    130                 135                 140

Lys Gly Tyr Thr Gly Lys Gly Val Lys Val Ala Val Ile Asp Thr Gly
145                 150                 155                 160

Ile Asp Tyr Thr His Pro Ala Leu Gly Gly Cys Phe Gly Ala Gly Cys
                165                 170                 175
```

```
Leu Val Ser Phe Gly Thr Asp Leu Val Gly Asp Asn Tyr Ser Gly Phe
            180                 185                 190

Asn Thr Pro Val Pro Asp Asn Asp Pro Lys Asp Cys Ala Gly His Gly
        195                 200                 205

Ser His Val Ala Gly Ile Ile Ala Ala Gln Glu Asn Pro Tyr Gly Phe
    210                 215                 220

Thr Gly Gly Ala Pro Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly
225                 230                 235                 240

Cys Glu Gly Gln Ala Gly Asn Asp Val Leu Ile Ala Ala Tyr Asn Lys
                245                 250                 255

Ala Phe Glu Asp Gly Ala Gln Ile Ile Thr Ala Ser Ile Gly Gly Pro
            260                 265                 270

Ser Gly Trp Ala Glu Glu Pro Trp Ala Val Ala Val Ser Arg Ile Val
        275                 280                 285

Asp Ala Gly Val Pro Cys Thr Val Ser Ala Gly Asn Asp Gly Asp His
    290                 295                 300

Gly Leu Phe Phe Ala Ser Thr Ala Ala Asn Gly Lys Lys Val Leu Ala
305                 310                 315                 320

Val Ala Ser Val Asp Asn Lys Asn Ile Pro Thr Val Phe Ser Leu Ser
                325                 330                 335

Ser Tyr Lys Val Asp Asn Gly Asp Ser Gln Gln Phe Gly Tyr Val Ser
            340                 345                 350

Ser Ser Lys Ala Trp Lys Gly Val Thr Lys Pro Val Tyr Ala Val Thr
        355                 360                 365

Leu Asp Thr Thr Ile Pro Asp Asp Ala Cys Ser Pro Leu Pro Asp Ser
    370                 375                 380

Thr Pro Asp Leu Ser Asn Tyr Ile Val Leu Val Arg Arg Gly Thr Cys
385                 390                 395                 400

Thr Phe Val Gln Lys Ala Gln Asn Val Ala Ala Lys Gly Ala Lys Tyr
                405                 410                 415

Leu Leu Tyr Tyr Asn Asn Ile Ala Gly Ala Leu Ser Val Asp Val Ser
            420                 425                 430

Thr Val Thr Gln Ile Thr Ala Ala Gly Met Val Gln Asp Ser Thr Gly
        435                 440                 445
```

```
Ala Ala Phe Ile Ala Ala Ile Lys Ala Gly Lys Thr Val Thr Leu Ser
    450                 455                 460

Met Val Asp Pro Asp Ser Ala Thr Lys Gln Ile Gln Phe Ala Asp Asn
465                 470                 475                 480

Lys Ala Thr Gly Gly Ala Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr
                485                 490                 495

Trp Glu Val Asp Val Lys Pro Gln Ile Ser Ser Pro Gly Gly Asn Ile
            500                 505                 510

Leu Ser Thr Tyr Pro Val Ala Leu Gly Gly Tyr Ala Thr Leu Ser Gly
        515                 520                 525

Thr Ser Met Ala Cys Pro Leu Thr Ala Ala Ala Val Ala Leu Val Ala
    530                 535                 540

Gln Ala Arg Gly Thr Phe Asp Pro Ala Leu Ile Glu Asn Leu Leu Ala
545                 550                 555                 560

Thr Thr Ala Asn Pro Gln Val Phe Asn Asp Gly Ala Gln Phe Tyr Asp
                565                 570                 575

Phe Leu Ala Pro Val Ala Gln Gln Gly Gly Gly Leu Ile Gln Ala Tyr
            580                 585                 590

Asp Ala Ala Phe Ala Thr Thr Leu Leu Ser Pro Ser Ser Leu Thr Phe
        595                 600                 605

Asn Asp Thr Asp His Phe Val Arg Lys Arg Gln Ile Thr Leu Lys Asn
    610                 615                 620

Thr Ser Lys Gln Arg Val Thr Tyr Lys Leu Asn His Val Pro Thr Asn
625                 630                 635                 640

Thr Phe Tyr Thr Leu Ser Gly Asp Ser Pro Tyr Pro Ala Ala Phe Pro
                645                 650                 655

Asn Glu Ala Ile Ala Ala His Ala Ser Val Lys Leu Ala Leu Gln Thr
            660                 665                 670

Val Thr Leu Pro Ala Gly Lys Ser Ile Thr Ile Asp Val Leu Pro Thr
        675                 680                 685

Pro Pro Lys Gly Val Asp Ala Lys Arg Leu Gly Leu Trp Ser Gly Tyr
    690                 695                 700

Ile Thr Val Asn Gly Thr Asp Gly Ser Ala Leu Ser Val Pro Tyr Gln
705                 710                 715                 720
```

```
Gly Leu Thr Gly Ser Leu His Lys Gln Gln Val Leu Leu Pro Glu Asp
                725                 730                 735

Ser Trp Ile Ala Lys Ser Thr Asp Glu Asn Leu Asn Pro Val Glu Asn
            740                 745                 750

Gly Thr Val Phe Thr Ile Pro Ala Pro Gly Asn Ala Gln Ser Thr Asp
        755                 760                 765

Val Leu Pro Ser Leu Val Val Ser Pro Ala Phe Gly Ser Arg Gln Ile
    770                 775                 780

Arg Val Asp Leu Val Leu Leu Ser Ala Pro Pro Lys Asn Thr Lys Ile
785                 790                 795                 800

Lys Thr Thr Lys Phe Leu Asp Thr Thr Ser Ile Gly Gln Pro Ala Gly
                805                 810                 815

Ala Pro Val Leu Trp Ala Ser Arg Gly Pro Thr Pro Leu Ser Trp Ser
            820                 825                 830

Gly Glu Leu Thr Asp Asn Lys Phe Ala Pro Pro Gly Thr Tyr Lys Ala
        835                 840                 845

Val Phe His Ala Leu Arg Ile Phe Gly Asn Glu Lys Lys Lys Glu Asp
    850                 855                 860

Trp Asp Val Ser Glu Ser Pro Ala Phe Thr Ile Lys Tyr Ala
865                 870                 875

<210>  87
<211>  885
<212>  PRT
<213>  Metarhizium acridum

<400>  87

Met Val Gly Leu Ser Leu Val Val Ser Leu Val Ala Ala Ala Ala Ser
1               5                   10                  15

Ala Leu Ala Ala Asp Ala Gln Asp Lys Arg Leu Val Lys Thr Phe Val
            20                  25                  30

Pro Gly Ala Tyr Ile Phe Glu Leu Glu Asp Gly His Asp Pro Ala Thr
        35                  40                  45

Phe Glu Gln Thr Val Gly Lys Asp Gly Thr Thr Arg Met Lys Leu Asp
    50                  55                  60

Tyr Glu Leu Phe Lys Gly Val Ser Val Gln Leu His Asp Val Asp Lys
65                  70                  75                  80

Ala His Glu Lys Ala Ala Lys Leu Ala Asp Thr Pro Ala Val Lys Ala
```

85 90 95

Val Tyr Pro Val Gln Leu Phe Asn Met Pro Lys Pro Lys Val Glu Trp
100 105 110

Ile Ala Lys Asp Gly Thr Lys Ala Pro Gly Gly Leu Leu Ser Ser Arg
115 120 125

Ala Asp Asp Gly Ala Asp Ile Phe Ser Pro His Val Met Thr Gln Val
130 135 140

Asp Lys Leu Arg Ala Lys Gly Val Thr Gly Lys Gly Val Lys Ile Ala
145 150 155 160

Val Val Asp Thr Gly Ile Asp Tyr Lys His Pro Ala Leu Gly Gly Cys
165 170 175

Phe Gly His Gly Cys Leu Val Ala Phe Gly Thr Asp Leu Val Gly Asp
180 185 190

Ala Tyr Asp Gly Ser Asn Thr Pro His Pro Asp Pro Asp Pro Met Asp
195 200 205

Cys Gly Gly His Gly Ser His Val Ala Gly Ile Val Ala Ala Gln Pro
210 215 220

Asn Thr Phe Gly Phe Thr Gly Ala Ala Pro Gly Ala Thr Leu Gly Ala
225 230 235 240

Tyr Arg Val Phe Gly Cys Lys Gly Gln Ala Gly Asn Asp Val Leu Ile
245 250 255

Ala Ala Phe Asn Gln Ala Tyr Gln Asp Gly Ala Asn Ile Ile Thr Ala
260 265 270

Ser Ile Gly Gly Pro Ser Gly Trp Ser Glu Asp Pro Trp Ala Glu Ala
275 280 285

Val Ser Arg Ile Val Asp Lys Gly Val Pro Cys Thr Val Ser Ala Gly
290 295 300

Asn Glu Gly Ala Glu Gly Ile Phe Tyr Ala Ser Thr Ala Ala Asn Gly
305 310 315 320

Arg Arg Val Ser Ala Ile Ala Ser Tyr Asp Asn Val Gln Thr Pro Ser
325 330 335

Leu Ile Tyr Asn Ala Lys Tyr Gln Ile Asp Asn Gly Ala Asp Thr Lys
340 345 350

Phe Gly Tyr Val Pro Ser Glu Pro Ala Ser Trp Asp Gly Val Thr Leu

```
        355                 360                 365

Pro Ala Trp Ser Asn Ser Leu Asp Pro Thr Ile Pro Asp Asp Gly Cys
    370                 375                 380

Asp Pro Phe Pro Ala Asn Thr Pro Asp Leu Ser Asn Tyr Ile Val Leu
385                 390                 395                 400

Ile Arg Arg Gly Ser Cys Pro Phe Thr Gln Lys Val Asn Asn Ala Val
                405                 410                 415

Ala Lys Gly Ala Lys Tyr Val Ile Val Tyr Asn Asn Asn Ala Val Gly
            420                 425                 430

Ala Ile Pro Met Asp Leu Thr Glu Val Pro Ala Gly Ser Ile Lys Ala
        435                 440                 445

Ala Ser Met Ile Asp Gly Thr Thr Gly Ala Thr Phe Ile Asn Ala Leu
    450                 455                 460

Lys Asp Gly Lys Lys Leu Thr Leu Lys Met Val Ser Pro Gln Lys Thr
465                 470                 475                 480

Asp Ser Glu Val Asn Thr Ser Asn Asn Thr Ile Thr Gly Gly Ala Leu
                485                 490                 495

Ser Thr Phe Thr Ser Trp Gly Pro Thr Trp Glu Met Asp Thr Lys Pro
            500                 505                 510

Gln Phe Gly Ala Val Gly Gly Asn Val Leu Ser Thr Tyr Pro Arg Ala
        515                 520                 525

Leu Gly Ser Tyr Ala Val Leu Ser Gly Thr Ser Met Ser Cys Pro Gln
    530                 535                 540

Thr Ala Gly Ile Ile Ala Leu Ile His Glu Val Arg Gly Thr Tyr Asp
545                 550                 555                 560

Pro Glu Leu Ile Gln Asn Leu Leu Ser Ala Asn Ala Asn Pro Gln Leu
                565                 570                 575

Phe Asn Asp Gly Thr Lys Phe Tyr Asp Phe Leu Ala Pro Val Pro Gln
            580                 585                 590

Gln Gly Gly Gly Leu Ile Gln Ala Tyr Asp Ala Ala Tyr Ala Thr Thr
        595                 600                 605

Leu Leu Ser Pro Ser Ser Leu Ser Phe Asn Asp Thr Asp His Phe Val
    610                 615                 620

Glu Thr Leu Lys Phe Lys Leu Gln Asn Thr Glu Ser Lys Lys Ile Thr
```

625 630 635 640

Tyr Lys Ile Thr His Thr Pro Ala Ile Thr Met Tyr Ala Leu Gly Asp
645 650 655

Gly Ser Pro Ser Val Gln Pro Phe Pro Asn Glu Ala Val Lys Ala Val
660 665 670

Ala Thr Ile Lys Leu Ser Glu Thr Ser Val Thr Leu Asn Gly Gly Gln
675 680 685

Ser Lys Ser Ile Ser Val Ser Pro Thr Pro Pro Gln Gly Leu Asp Ala
690 695 700

Lys Arg Leu Ala Leu Trp Ser Gly Tyr Ile Val Ile Asn Gly Thr Asp
705 710 715 720

Gly Thr Ser Leu Ser Leu Pro Tyr Gln Gly Leu Thr Gly Ser Leu His
725 730 735

Lys Ser Ala Val Leu Gly Ala Asn Asn Thr Trp Ile Ser Lys Ser Thr
740 745 750

Asp Lys Gln Ser Asn Pro Val Pro Pro Asn Ser Thr Phe Leu Ile Pro
755 760 765

Ala Pro Gly Asn Ala Arg Ser Asn Asp Thr Leu Pro Gln Leu Thr Ala
770 775 780

Ala Leu Tyr Leu Gly Ser Arg Lys Val Arg Ala Asp Ile Val Pro Leu
785 790 795 800

Thr Thr Cys Pro Pro Lys Asn Leu Thr Thr Glu Phe Gln Gly Ile Lys
805 810 815

Thr Ile Gly Gln Pro Tyr Asn Phe Pro Ala Leu Trp Gly Thr Arg Gly
820 825 830

Leu Asn Asn Phe Pro Trp Asp Gly Arg Leu Asp Ser Gly Asn Tyr Ala
835 840 845

Pro Pro Gly Lys Tyr Arg Phe Val Val Arg Ala Leu Arg Ile Phe Gly
850 855 860

Asp Glu Lys Lys Lys Glu Asp Trp Asp Val Ser Thr Ser Pro Ala Leu
865 870 875 880

His Ile Lys Tyr Gln
885

<210> 88

<211> 882
<212> PRT
<213> Fusarium oxysporum

<400> 88

```
Met Val Arg Leu Ser Ile Val Ala Ala Leu Tyr Ala Ala Val Val Ser
1               5                  10                  15

Ala Val Asp Phe Asp Lys Ile Ala Val Gly Lys Gly His Ser Arg Leu
            20                  25                  30

Pro Gly Ala Tyr Ile Phe Glu Phe Glu Glu Asn His Asp Cys Ala Asp
        35                  40                  45

Phe Phe Ala Lys Ala Ser Ser Arg Gly Lys Thr Arg Met Gln Tyr Asn
    50                  55                  60

Tyr Lys Leu Phe Lys Gly Ala Ser Ile Gln Phe Thr Asp Ile Asp Asn
65                  70                  75                  80

Ala Glu Asp Leu Ala Ser Glu Met Ala Leu Leu Pro Gly Ile Lys Gln
                85                  90                  95

Lys Trp Pro Val Gln Thr Phe Ser Ile Pro Lys Pro Glu Val His Trp
            100                 105                 110

Thr Gly Thr Pro Gly Met Glu Tyr Lys Ser Ile Gln Lys Arg Gly Phe
        115                 120                 125

Glu Glu Arg Asp Ala Ala Asn Asp Thr Phe Ser Pro His Val Met Thr
    130                 135                 140

Gln Ile Asp Lys Leu Arg Ala Glu Gly Val Thr Gly Lys Gly Leu Lys
145                 150                 155                 160

Val Ala Leu Val Asp Ser Gly Ile Asp Tyr Lys His Pro Ala Leu Gly
                165                 170                 175

Gly Cys Phe Gly Lys Asn Cys Leu Val Ser Phe Gly Thr Asp Leu Val
            180                 185                 190

Gly Asp Ala Tyr Asp Gly Ser Asn His Ala Lys Pro Asp Asn Asp Pro
        195                 200                 205

Met Asp Cys Ala Gly His Gly Thr His Val Ala Gly Ile Leu Ala Ala
    210                 215                 220

Gln Lys Asn Thr Met Gly Phe Thr Gly Ala Ala Pro Gly Val Gln Ile
225                 230                 235                 240

Gly Ala Tyr Arg Ala Phe Gly Cys Asn Gly Glu Ala Gly Asn Asp Val
                245                 250                 255
```

```
Leu Ile Ala Ala Phe Asn Gln Ala Phe Glu Asp Gly Ala Asp Ile Ile
            260                 265                 270

Ser Ala Ser Ile Gly Gly Pro Ser Gly Trp Ser Glu Glu Pro Trp Ala
        275                 280                 285

Val Ala Val Ser Arg Ile Val Glu Gln Gly Val Pro Cys Val Leu Ala
    290                 295                 300

Ala Gly Asn Ala Gly Ala Thr Gly Met Phe Tyr Ala Ser Thr Ala Ala
305                 310                 315                 320

Asn Gly Lys Lys Val Thr Ala Val Gly Ser Phe Asp Asn Thr Lys Ser
                325                 330                 335

Leu Ala Leu Leu Asn Ala Ser Lys Tyr Ser Ile Asp Gly Gly Pro Glu
            340                 345                 350

His Glu Phe Gly His Leu Ser Gly Lys Pro Ser Ala Trp Lys Gly Val
        355                 360                 365

Lys Leu Pro Leu Trp Ala Leu Asn Tyr Asp Thr Ser Val Ala Asp Asp
    370                 375                 380

Gly Cys Asp Glu Trp Pro Lys Asn Thr Pro Asp Leu Gly Asn Tyr Ile
385                 390                 395                 400

Val Leu Leu Arg Arg Gly Ser Cys Thr Phe Asp Ala Lys Ala Ala Asn
                405                 410                 415

Ala Val Lys Ala Gly Ala Arg Tyr Ile Met Phe Tyr Ser Asn Lys Glu
            420                 425                 430

Asp Leu Ala Pro Phe Asp Val Ser Ser Val Gly Gly Ile Lys Ala Ala
        435                 440                 445

Ser Ile Val Ser Pro Glu Gln Gly Ala Glu Trp Ile Ala Ser Leu Lys
    450                 455                 460

Ala Lys Lys Lys Ile Thr Leu Ser Met Ser Asp Gly Ser Asp Gly Asn
465                 470                 475                 480

Val Ile Leu Glu Gln Lys His Asn Asn Ile Thr Ala Gly Ala Ala Ser
                485                 490                 495

Thr Phe Ser Ser Trp Gly Pro Thr Trp Glu Met Asp Val Lys Pro Gln
            500                 505                 510

Phe Gly Ala Pro Gly Gly Lys Ile Leu Ser Thr Tyr Pro Arg Ser Met
        515                 520                 525
```

```
Gly Ser Tyr Ala Val Leu Ser Gly Thr Ser Met Ala Ser Pro Leu Val
    530                 535                 540

Ala Gly Ile Val Ala Leu Ile Ala Glu Ala Arg Gly Thr Arg Asp Pro
545                 550                 555                 560

Ala Leu Ile Glu Asn Leu Leu Ser Ala Ser Ala Lys Pro Gln Leu Phe
                565                 570                 575

Asn Asp Gly Lys Thr Phe Tyr Asp Phe Leu Ala Pro Val Pro Gln Gln
            580                 585                 590

Gly Gly Gly Ile Val Gln Ala His Asp Ala Ala His Ala Lys Val Leu
        595                 600                 605

Leu Ser Arg Ser Ser Leu Ser Phe Asn Asp Thr Asp His Phe Val Glu
    610                 615                 620

Ser Leu Asn Phe Thr Val Lys Asn Thr Gly Lys Lys Gln Ile Asp Leu
625                 630                 635                 640

Gln Ile Ser His Val Pro Ala Val Thr Met Phe Thr Leu Val Glu Asn
                645                 650                 655

Tyr Ile Tyr Pro Asp Glu Phe Pro Asn Asp Phe Ala Lys Glu His Ala
            660                 665                 670

Ser Leu Lys Phe Ser Glu Ser Lys Val Thr Ile Asp Ala Gly Glu Ser
        675                 680                 685

Ile Val Ile Glu Val Leu Ala Thr Pro Pro Lys Gly Leu Asn Ala Thr
    690                 695                 700

Arg Leu Pro Val Trp Ser Gly Tyr Val Thr Ile Asn Gly Thr Asp Gly
705                 710                 715                 720

Thr Ser Leu Ser Leu Pro Tyr Gln Gly Leu Thr Gly Ser Leu His Asp
                725                 730                 735

Ser Met Val Leu Gly Pro Gln Asp Thr Trp Ile Ala Asn Ser Thr Asp
            740                 745                 750

Glu Asn Arg Phe Pro Leu Pro Asp Asn Thr Thr Trp Thr Leu Pro Lys
        755                 760                 765

Pro Gly Thr Ala Asn Asn Leu Thr Asp Thr Leu Pro Gly Leu Thr Trp
    770                 775                 780

Phe Leu Ala Leu Gly Ser Ala Lys Leu His Ala Glu Ile Met Pro Val
785                 790                 795                 800
```

```
Thr Thr Glu Lys Pro Thr Ser Ser Lys Lys Pro Arg Val Ile Gly Glu
                805                 810                 815

Pro Ile Asp Phe Pro Leu Leu Trp Asn Ala Met Gly Ala Asn Ser Gln
            820                 825                 830

Ala Phe Thr Gly Glu Leu Ala Asp Gly Thr Phe Ala Pro Ala Gly Gln
        835                 840                 845

Tyr Val Val Arg Tyr Arg Ala Leu Arg Ile Phe Gly Asn Glu Lys Lys
    850                 855                 860

Lys Glu Asp Trp Asp Glu Ala Tyr Ser Pro Val Phe Thr Ile Arg Tyr
865                 870                 875                 880

Glu Lys
```

<210> 89
<211> 875
<212> PRT
<213> Gibberella zeae

<400> 89

```
Met Val Arg Phe Gly Leu Ser Ala Leu Leu Phe Ala Gly Leu Ser Leu
1               5                   10                  15

Ala Gln Asp Glu Leu Ser Gln Pro Pro Gln Pro Glu Gln Gly Thr Val
            20                  25                  30

Ala His Leu Pro Gly Ala Tyr Ile Phe Glu Phe Glu Glu Ser Gln Asp
        35                  40                  45

Thr Ser Val Phe Tyr Asp Lys Thr Glu Ser Gln Ser Thr Thr Arg Val
    50                  55                  60

Lys Phe Asp Tyr Asp Leu Phe Lys Gly Val Ser Val Gln Phe Asp Asp
65                  70                  75                  80

Val Ala Ser Ala Glu Glu Leu Ala Ala Lys Met Ala Ala Leu Pro Val
                85                  90                  95

Val Lys Asn Val Trp Pro Val Lys Val Tyr Gly Ile Pro Ala Pro Arg
            100                 105                 110

Val Glu Trp Val Ala Glu Pro Gly Met Lys Ala Pro Leu Ser Lys Arg
        115                 120                 125

Ala Val Asn Asp Thr Ala Asp Thr Phe Ser Pro His Val Met Thr Gln
    130                 135                 140
```

```
Val Asp Lys Leu Arg Lys Lys Gly Ile Thr Gly His Gly Ile Lys Val
145                 150                 155                 160

Ala Val Ile Asp Thr Gly Ile Asp Tyr Lys His Pro Ala Leu Gly Gly
                165                 170                 175

Cys Phe Gly Pro Asp Cys Leu Val Ser Phe Gly Thr Asp Leu Val Gly
            180                 185                 190

Asp Asp Tyr Asp Gly Phe Asn Ala Val His Pro Asp Asp Asp Pro Met
        195                 200                 205

Asp Cys Ala Gly His Gly Thr His Val Ala Gly Ile Val Ala Ala Gln
    210                 215                 220

Thr Asn Pro Phe Gly Phe Thr Gly Thr Ala Pro Gly Val Thr Leu Gly
225                 230                 235                 240

Ala Tyr Arg Val Phe Gly Cys Ser Gly Glu Ala Gly Asn Asp Val Leu
                245                 250                 255

Ile Ala Ala Tyr Asn Gln Ala Tyr Gln Asp Gly Ala Asp Ile Ile Thr
            260                 265                 270

Ala Ser Ile Gly Gly Pro Ser Gly Trp Ser Glu Glu Pro Trp Ala Val
        275                 280                 285

Ala Val Ser Arg Ile Val Glu Lys Gly Val Pro Cys Pro Val Ser Ala
    290                 295                 300

Gly Asn Ser Gly Asp Val Gly Met Phe Tyr Ala Ser Thr Ala Ala Asn
305                 310                 315                 320

Gly Asn Lys Val Met Ala Ile Ala Ser Tyr Asp Asn Ser Asp Tyr Ile
                325                 330                 335

Ser Leu Leu Lys Gln His His Tyr Thr Val Asp Gly Ser Asp Thr Lys
            340                 345                 350

Ile Ala Phe Gly Met Thr Ala Gly Thr Pro Ala Ala Trp Asp Asp Val
        355                 360                 365

Lys Leu Pro Ile Trp Ala Pro Ser Leu Asp Thr Thr Val Ala Asn Gly
    370                 375                 380

Gly Cys Asp Pro Tyr Pro Ala Asp Thr Pro Asp Leu Ser Lys Phe Ile
385                 390                 395                 400

Val Leu Val Arg Arg Gly Thr Cys Thr Phe Ala Gln Lys Ala Gln Asn
                405                 410                 415
```

```
Ala Ala Asn Ala Gly Ala Lys Tyr Phe Ile Val Tyr Asn Asn Ala Gly
            420                 425                 430

Gly Ala Asn Glu Ile Asp Val Ser Ala Val Lys Ser Ile Leu Ala Ala
        435                 440                 445

Gly Met Val Thr Ser Lys Val Gly Ala Lys Trp Ile Gly Leu Leu Lys
    450                 455                 460

Glu Gly Ser Lys Val Thr Leu Glu Met Ser Ala Gly Ser Asp Gly Glu
465                 470                 475                 480

Val Ile Met Glu Glu Ser Lys Asn Asp Lys Thr Gly Gly Ala Val Ser
                485                 490                 495

Thr Tyr Ser Ser Trp Gly Pro Thr Trp Glu Met Asp Val Lys Pro Gln
            500                 505                 510

Phe Gly Ser Pro Gly Gly Asn Ile Leu Ser Thr Tyr Pro Leu Ala Lys
        515                 520                 525

Gly Gly Tyr Ala Val Leu Ser Gly Thr Ser Met Ala Cys Pro Leu Val
    530                 535                 540

Ala Ala Thr Ile Ala Leu Ile Ala Glu Val Arg Gly Thr Leu Asp Pro
545                 550                 555                 560

Glu Thr Ile Glu Asn Leu Leu Ala Ser Thr Ser Asn Pro Gln Leu Phe
                565                 570                 575

Asn Asp Gly Thr Gly Phe Ser Asp Tyr Leu Ala Pro Val Pro Gln Gln
            580                 585                 590

Gly Gly Gly Met Ile Gln Ala Tyr Asp Ala Ala Tyr Ser Thr Val Leu
        595                 600                 605

Met Asp Val Ser Ser Leu Ser Phe Asn Asp Thr Asp Asn Phe Ile Lys
    610                 615                 620

Val Arg Asn Phe Thr Ile His Asn Thr Gly Lys Lys Glu Ile Asp Leu
625                 630                 635                 640

Ser Val Ser His Ile Pro Thr Lys Ser Val Tyr Thr Leu Asp Lys Asp
                645                 650                 655

Ser Ile Tyr Ala Ser Thr Phe Pro Asn Asp Val Ala Asp Ala His Ala
            660                 665                 670

Glu Leu Lys Phe Ser Glu Ala Lys Leu Ser Val Gly Ala Gly Glu Lys
        675                 680                 685
```

```
Val Thr Ile Glu Val Val Pro Ser Ala Pro Glu Gly Leu Asp Ala Lys
    690                 695                 700

Arg Leu Ala Leu Trp Ser Gly Tyr Ile Ala Ile Asn Gly Thr Gly Val
705                 710                 715                 720

Ser Leu Ser Leu Pro Tyr Gln Gly Met Thr Gly Ser Leu His Asp Ser
                725                 730                 735

Val Val Leu Gly Ser Asp Asp Thr Trp Ile Ala Arg Ser Asn Asp Lys
            740                 745                 750

Asp Lys Leu Thr Pro Val Pro Ala Asn Thr Thr Phe Ile Leu Pro Val
        755                 760                 765

Lys Gly Gln Asn Ala Thr Asp Ala Gln Pro Ala Pro Ala Leu Ala Trp
    770                 775                 780

Lys Leu Ala Leu Gly Ser Ala Lys Leu Glu Ala Glu Leu Ile Pro Val
785                 790                 795                 800

Gly Gly Asn Ser Thr Lys Ser Leu Gly Ala Pro Ala Gly Phe Pro Val
                805                 810                 815

Gln Trp Asn Pro Met Gly Asp Gly Asn Ile Val Trp Asn Gly Lys Leu
            820                 825                 830

Ala Asp Gly Gly Tyr Ala Pro Ala Gly Lys Tyr Lys Val Lys Tyr Gln
        835                 840                 845

Ala Leu Arg Ile Phe Gly Asp Glu Lys Val Lys Ser Asp Trp Asp His
    850                 855                 860

Ser Glu Ser Pro Val Phe Ser Val Lys Tyr Pro
865                 870                 875


<210>  90
<211>  906
<212>  PRT
<213>  Epichloe festucae

<400>  90

Met Val Arg Leu Arg Thr Ser Phe Val Ala Ser Leu Leu Ala Ala Ala
1               5                   10                  15

Ala Ser Thr Leu Ala Ala Asp Pro Asn Glu Lys Val Ala Asn Thr Val
            20                  25                  30

Val Pro Gly Ala Tyr Ile Phe Glu Leu Ala Asp Gly Gln Asp Ala Ala
        35                  40                  45
```

```
Ala Leu Glu Lys Ala Val Gly Lys Asp Gly Lys Thr Arg Met Arg Leu
    50                  55                  60

Asp Phe Asp Leu Phe Lys Ala Val Ser Val Gln Leu His Asp Val Asp
65                  70                  75                  80

Lys Ala Lys Glu Lys Ala Thr Lys Leu Ala Ala Leu Pro Gln Val Lys
                85                  90                  95

Ser Val Tyr Pro Val Thr Leu Tyr Lys Arg Pro Asn Pro Lys Ile Glu
            100                 105                 110

Trp Ile Ala Gln Lys Gly Ser Thr Met Gln Lys Ala Ala Leu Thr Ser
        115                 120                 125

Arg Ala Asp Gly Pro Glu Gly Pro Asp Gly Pro Glu Gly Ala His Ala
    130                 135                 140

Asp Thr Asp Thr Tyr Ser Pro His Val Met Thr Gln Val Asp Lys Leu
145                 150                 155                 160

Arg Ala Lys Gly Ile Thr Gly Lys Arg Val Lys Ile Ala Leu Val Asp
                165                 170                 175

Thr Gly Ile Asp Phe Gly His Pro Ala Leu Gly Gly Cys Phe Gly Asp
            180                 185                 190

Gly Cys Leu Val Ser Phe Gly Thr Asp Leu Val Gly Asp Asp Phe Asn
        195                 200                 205

Gly Phe Asn Thr Pro His Pro Asp Asn Ile Pro Lys Asp Cys Ser Gly
    210                 215                 220

His Gly Thr His Val Ala Gly Ile Ile Ala Ala Gln Asn Asn Thr Tyr
225                 230                 235                 240

Gly Phe Thr Gly Thr Ala Pro Asp Ala Thr Leu Gly Ile Tyr Arg Val
                245                 250                 255

Phe Gly Cys Thr Gly Glu Ser Thr Asn Glu Ile Leu Ile Ala Ala Phe
            260                 265                 270

Asn Met Ala Tyr Gln Gly Gly Ala Asn Ile Ile Thr Ala Ser Val Gly
        275                 280                 285

Ser Ala Ser Gly Trp Ser Glu Asp Pro Trp Ala Glu Ala Val Ser Arg
    290                 295                 300

Ile Val Gln Lys Gly Val Pro Cys Val Leu Ser Ala Gly Asn Asp Gly
305                 310                 315                 320
```

```
Asp Gln Gly Ile Phe Tyr Ala Ser Ala Ala Ala Asp Gly His Arg Val
                325                 330                 335

Ala Ala Ile Ala Ala Phe Asp Asn Val Gln Thr Pro Thr Val Tyr Ser
            340                 345                 350

Asn Ser Lys Tyr Glu Ile Asp Asp Gly Pro Asp Lys Val Phe Gly Tyr
        355                 360                 365

Leu Ala Ser Lys Pro Ala Asn Trp Asp Gly Val Thr Leu Pro Ala Trp
    370                 375                 380

Ala Asn Ser Leu Asp Pro Thr Val Val Asn Asp Gly Cys Gln Pro Phe
385                 390                 395                 400

Pro Ala Asn Thr Pro Asp Leu Ser Lys Tyr Ile Val Leu Ile Arg Arg
                405                 410                 415

Gly Gly Cys Asn Phe Asp Lys Lys Val Gly Asn Ala Ile Ala Lys Gly
            420                 425                 430

Ala Lys Asn Val Ile Val Tyr Asn Asn Ala Ala Ala Gly Ala Ala Val
        435                 440                 445

Met Asp Leu Asn Ser Leu Arg Pro Gly Ser Leu Asn Ala Ala Ser Met
    450                 455                 460

Ile Asp Ala Asp Thr Gly Ala Thr Phe Ile Lys Ala Leu Lys Glu Gly
465                 470                 475                 480

Lys Lys Leu Thr Leu Lys Met Ser Ser Pro Gly Lys Thr Gly Ser Thr
                485                 490                 495

Leu Arg Thr Phe Lys Asn Thr Ala Thr Gly Gly Ala Leu Ser Ser Thr
            500                 505                 510

Thr Ser Trp Gly Pro Thr Trp Glu Met Asp Leu Lys Pro Gln Phe Gly
        515                 520                 525

Ala Val Gly Gly Asn Ile Leu Ser Thr Phe Pro Val Ala Leu Gly Ser
    530                 535                 540

Tyr Ala Ala Leu Ser Gly Thr Ser Met Ala Cys Pro Gln Val Ala Gly
545                 550                 555                 560

Ile Met Ala Leu Ile His Gln Val Arg Gly Thr Tyr Asp Ala Glu Leu
                565                 570                 575

Ile Gln Asn Leu Leu Ser Gly Asn Ser Asn Pro Gln Leu Phe Asn Asp
            580                 585                 590
```

```
Gly Thr Lys Phe Tyr Asp Phe Leu Ala Pro Val Pro Gln Gln Gly Ala
        595                 600                 605

Gly Leu Ile Gln Ala Tyr Asp Ala Ala Tyr Ala Thr Thr Val Leu Ser
    610                 615                 620

Pro Ser Gly Leu Ser Phe Asn Asp Thr Asp His Phe Ala Lys Arg Leu
625                 630                 635                 640

Glu Phe Lys Leu Lys Asn Thr Asp Lys Lys Arg Ala Thr Tyr Arg Val
                645                 650                 655

Thr His Val Pro Thr Ile Thr Met Tyr Thr Leu Ala Lys Asp Ser Ile
            660                 665                 670

Tyr Ala Gln Lys Phe Pro Asn Asp His Val Asp Ala Ala Ala Thr Leu
        675                 680                 685

Lys Phe Ser Lys Thr Ser Ile Thr Leu Arg Gly Gly Glu Ala Glu Thr
    690                 695                 700

Val Thr Val Ser Ala Thr Pro Pro Glu Gly Leu Asp Thr Lys Arg Leu
705                 710                 715                 720

Ala Leu Trp Ser Gly Tyr Ile Val Ile Asn Gly Thr Asp Gly Ala Ser
                725                 730                 735

Leu Ser Leu Pro Tyr Gln Gly Leu Thr Gly Ser Leu Arg Asp Ser Thr
            740                 745                 750

Val Leu Gly Pro Ser Asp Thr Trp Ile Ser Lys Ser Ile Asp Glu Lys
        755                 760                 765

Ala Arg Lys Val Pro Pro Asn Ser Val Phe Val Ile Pro Gly Pro Gly
    770                 775                 780

Asn Ala Gly Val Asn Asp Thr Leu Pro Val Leu Ser Ala Asn Leu Ala
785                 790                 795                 800

Leu Gly Ser Ile Lys Val Arg Ala Asp Ile Val Pro Leu Thr Pro Cys
                805                 810                 815

Arg Pro Asn Asp Met Ile Pro Cys Pro Pro Lys Asp Met Met Thr Glu
            820                 825                 830

Phe Trp Gly Val Lys Thr Ile Gly Gln Pro Tyr Arg Phe Pro Ala Gln
        835                 840                 845

Trp Ser Ser Arg Gly Val Asn Asn Trp Ala Trp Asp Gly Arg Leu Asp
    850                 855                 860
```

```
Ser Gly Asn Tyr Ala Pro Pro Gly Lys Tyr Gln Phe Val Val Arg Ala
865                 870                 875                 880

Leu Arg Ile Phe Gly Asp Glu Arg Lys Lys Glu Asp Trp Asp Val Ser
                885                 890                 895

Thr Ser Pro Ala Leu Ile Ile Glu Tyr Gln
            900                 905
```

<210> 91
<211> 881
<212> PRT
<213> Nectria haematococca

<400> 91

```
Met Arg Leu Tyr Ser Leu Val Trp Leu Phe Ala Ala Ala Ala Ser Ala
1               5                   10                  15

Val Asp Ile Lys His Ile Gly Ile Lys Lys Thr Ser Ser Arg Leu Pro
            20                  25                  30

Gly Ala Tyr Ile Phe Glu Phe Glu Asp Asp Asn Asp Cys Ser Asp Phe
        35                  40                  45

Tyr Ala Lys Ala Ser Glu His Gly Thr Thr Arg Met Gln Tyr Asp Tyr
    50                  55                  60

Lys Leu Phe Lys Gly Ala Ser Ile Gln Phe Asn Asp Val Asp His Ala
65                  70                  75                  80

Glu Asp Leu Ala Val Met Met Thr Lys Met Pro Ala Val Lys Arg Ser
                85                  90                  95

Trp Pro Val Lys Met Ile Ser Leu Pro Thr Pro Glu Val His Trp Gln
            100                 105                 110

Gly Thr Pro Gly Lys Asp Tyr Ser Ala Ile Arg Arg Arg Asp Leu Tyr
        115                 120                 125

Gly Arg Asp Thr Thr Asn Asp Thr Phe Ser Pro His Ile Met Thr Gln
    130                 135                 140

Val Asp Lys Leu Arg Ala Glu Gly Ala Thr Gly Lys Gly Ile Lys Val
145                 150                 155                 160

Ala Leu Val Asp Ser Gly Val Asp Tyr Thr His Pro Ala Leu Gly Gly
                165                 170                 175

Cys Phe Gly Pro Gly Cys Leu Val Ser Phe Gly Thr Asp Leu Val Gly
            180                 185                 190

Asp Thr Tyr Asn Gly Lys Asn Ala Ala Thr Pro Asp Asp Asp Pro Gln
```

195 200 205

Asp Cys Gln Gly His Gly Thr His Thr Ala Gly Thr Leu Ala Ala Gln
210 215 220

Ala Asn Ser Met Gly Phe Thr Gly Ala Ala Pro Gly Val Thr Ile Gly
225 230 235 240

Ala Tyr Arg Ala Phe Gly Cys Lys Gly Glu Ser Gly Asn Asp Ile Leu
245 250 255

Ile Ala Ala Phe Asn Arg Ala Phe Glu Asp Gly Ala Asp Ile Ile Ser
260 265 270

Ala Ser Ile Gly Gly Pro Ala Gly Trp Ser Glu Asp Pro Trp Ala Val
275 280 285

Ala Val Ser Arg Ile Val Asp Gln Gly Val Pro Cys Ile Leu Ser Ala
290 295 300

Gly Asn Ala Gly Glu Ala Gly Leu Phe Tyr Ala Asn Thr Ala Gly Asn
305 310 315 320

Gly Lys His Val Thr Ala Val Ala Ser Phe Asp Asn Thr Lys Ser Leu
325 330 335

Ala Leu Phe Asn Val Ser His Tyr Thr Val Asn Asp Gly Pro Lys Asn
340 345 350

Glu Phe Gly Ser Leu Ala Gly Ala Pro Asp Ala Trp Lys Gly Val Lys
355 360 365

Leu Pro Leu Trp Ala Leu Asn Tyr Asn Thr Thr Val Ala Asp Asp Ala
370 375 380

Cys Ser Pro Leu Pro Ala Asn Thr Pro Asp Leu Ser Lys Tyr Ile Val
385 390 395 400

Leu Ile Arg Arg Gly Thr Cys Thr Phe Glu Val Lys Ala Thr Asn Leu
405 410 415

Ala Lys Phe Gly Ala Gln Tyr Met Met Ile Tyr Ser Asp Leu Glu Asn
420 425 430

Leu Met Pro Tyr Asp Val Ser Met Val Ala Gly Ile Lys Ala Ala Ala
435 440 445

Ile Val Ser Pro Ser Gln Gly Leu Glu Trp Met Lys His Leu Ser Lys
450 455 460

Gly Glu Lys Val Val Leu Glu Met Ser Asp Gly Ser Asp Gly Asn Val

465 470 475 480

Met Leu Gln Glu Thr Val Asn Asn Ile Thr Ala Gly Ala Val Ser Ala
485 490 495

Phe Thr Ser Trp Gly Pro Thr Trp Glu Met Asp Val Lys Pro Gln Phe
500 505 510

Gly Ala Pro Gly Gly Glu Ile Leu Ser Thr Tyr Pro Arg Asp Gln Gly
515 520 525

Ser Phe Ala Val Leu Ser Gly Thr Ser Met Ala Thr Pro Leu Leu Ala
530 535 540

Gly Ile Val Ala Leu Ile Ala Glu Val Arg Gly Thr Leu Asp Pro Ile
545 550 555 560

Phe Leu Glu Asn Leu Leu Ser Ser Thr Ser Lys Pro Gln Leu Phe Asn
565 570 575

Asp Gly Lys Ala Phe Tyr Arg Phe Leu Ala Pro Val Pro Gln Gln Gly
580 585 590

Ser Gly Ile Val Gln Ala His Asp Ala Ala His Ser Lys Ile Ile Leu
595 600 605

Ser Pro Ser Ser Leu Ser Phe Asn Asp Thr Asp His Phe Val Glu Ser
610 615 620

Leu Asn Phe Thr Leu Lys Asn Thr Gly Ser Glu Glu Val Glu Phe Gln
625 630 635 640

Ile Ser His Val Pro Ala Val Thr Met Tyr Thr Leu Ala Lys Gly Tyr
645 650 655

Met Tyr Pro Asp Gly Phe Pro Asn Asp Phe Ala Asn Glu Gln Ala Ser
660 665 670

Val Arg Phe Ser Glu Ser Lys Val Ser Ile Ser Pro Gly Asp Ser Ile
675 680 685

Val Ile Glu Val Leu Pro Thr Pro Pro Gln Gly Val Asp Ala Lys Arg
690 695 700

Leu Pro Val Trp Ser Gly Tyr Val Ala Ile Asn Gly Thr Asp Gly Ser
705 710 715 720

Ala Leu Ser Leu Pro Tyr Gln Gly Leu Thr Gly Ser Leu His Asp Ser
725 730 735

Pro Val Leu Gly Pro Asn Asp Thr Trp Ile Thr Ser Ser Thr Asp Glu

740 745 750

Asn Phe Phe Pro Ala Lys Ala Asn Lys Thr Trp Ile Leu Pro Lys Ala
755 760 765

Gly Thr Ala Asn Asn Gln Thr Asp Glu Leu Pro Ala Val Val Trp Phe
770 775 780

Leu Ala Leu Gly Thr Ala Lys Leu His Gly Asp Ile Ile Pro Val Thr
785 790 795 800

Thr Asp Lys Ser Ser Ser Ser Gly Lys Ala Arg Val Ile Gly Glu Pro
805 810 815

Val Asn Phe Pro Leu Leu Trp Asn Pro Met Gly Arg Asn Ser Gln Pro
820 825 830

Phe Thr Gly Glu Leu Ala Gly Gly Gly Phe Ala Pro Ala Gly Met Tyr
835 840 845

Val Val Arg Tyr Arg Ala Leu Arg Ile Phe Gly Asn Glu Asn Asp Glu
850 855 860

Lys Asp Trp Asp Glu Ser Tyr Ser Pro Pro Phe Ala Ile Gln Tyr Ala
865 870 875 880

Gln

<210> 92
<211> 874
<212> PRT
<213> Sordaria macrospora

<400> 92

Met Val Arg Leu Gly Leu Ala Thr Thr Leu Leu Ala Ala Ala Ser Phe
1 5 10 15

Ala Gln Ala Ala His His Lys Ala Pro Lys Val Val Pro Gly Ala Tyr
20 25 30

Ile Val Glu Tyr Glu Asp Ser His Ala Ala Ser Ile Leu Asn Ser Ile
35 40 45

Lys Gly Asp Ala Thr Ile Arg Lys Asp Ile Arg His Glu Leu Phe Lys
50 55 60

Gly Ala Ser Phe Gln Phe Lys Asp Leu Asp Lys Ala Glu Asp Leu Ala
65 70 75 80

Gly Lys Ile Ala Ala Met Ser Gly Val Lys Ala Met Tyr Pro Val Arg
85 90 95

```
Arg Tyr Ser Val Pro Glu His Thr Val His Tyr Thr Gly Ser Ser Val
            100                 105                 110

Gln Glu Val Val Ala Lys Arg Asp Thr Ala Lys Asp Thr Phe Thr Pro
        115                 120                 125

His Leu Met Thr Gln Val Asn Lys Phe Arg Asp Ser Gly Ile Thr Gly
    130                 135                 140

Lys Gly Ile Lys Val Ala Val Ile Asp Thr Gly Ile Asp Tyr Leu His
145                 150                 155                 160

Pro Ala Leu Gly Gly Cys Phe Gly Ala Gly Cys Leu Val Ser Tyr Gly
                165                 170                 175

Ala Asp Leu Val Gly Asp Asp Phe Asn Gly Ser Asn Thr Pro Val Pro
            180                 185                 190

Asp Pro Asp Pro Met Asp Cys Gln Gly His Gly Thr His Val Ser Gly
        195                 200                 205

Ile Val Ala Ser Lys Thr Asn Asn Pro Tyr Gly Ile Ile Gly Ala Ala
    210                 215                 220

Ser Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly Cys Asp Gly Asp
225                 230                 235                 240

Val Gly Asn Asp Ile Leu Ile Glu Ala Tyr Leu Lys Ala Tyr Asp Asp
                245                 250                 255

Gly Ser Asp Ile Ile Thr Ala Ser Ile Gly Gly Ala Ser Gly Trp Pro
            260                 265                 270

Glu Asp Ser Trp Ala Ala Val Val Ser Arg Ile Val Glu Lys Gly Val
        275                 280                 285

Pro Cys Leu Val Ser Ala Gly Asn Ser Gly Asp Glu Gly Ile Phe Tyr
    290                 295                 300

Ala Ser Thr Ala Ala Asn Gly Lys Arg Val Thr Ala Val Gly Ser Val
305                 310                 315                 320

Asp Asn Ile Ile Ala Pro Ala Leu Leu Ser Glu Gly Thr Tyr Ser Val
                325                 330                 335

Ala Gly Ser Ser Ala Ser Ala Phe Gly Phe Thr Ala Gly Thr Pro Ser
            340                 345                 350

Ala Trp Ala Asn Val Ser Leu Pro Val Trp Ser Val Asn Phe Asp Thr
        355                 360                 365
```

```
Thr Asp Ala Ala Asn Gly Cys Glu Ala Phe Pro Asp Asn Thr Pro Asp
    370                 375                 380

Leu Ser Lys Tyr Ile Thr Leu Ile Arg Arg Gly Ser Cys Thr Phe Val
385                 390                 395                 400

Gln Lys Ala Gln Asn Ala Ala Ala Lys Gly Ala Lys Tyr Ile Ile Phe
                405                 410                 415

Tyr Asn Asn Ala Ala Gly Ser Thr Lys Val Asp Ile Ser Ala Val Ala
            420                 425                 430

Gly Ile Gln Gly Ser Ala Met Val Thr Ser Glu Thr Gly Ala Ala Trp
        435                 440                 445

Ile Lys Ala Leu Gln Ala Gly Ser Glu Val Ile Val Asn Met Ala Asp
    450                 455                 460

Pro Glu Thr Ala Pro Lys Asn Leu Ser Asn Phe Pro Asn Pro Asn Thr
465                 470                 475                 480

Ala Gly Phe Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr Tyr Glu Ile
                485                 490                 495

Asp Val Lys Pro Gln Ile Ser Ala Pro Gly Gly Met Ile Leu Ser Thr
            500                 505                 510

Tyr Pro Arg Ala Leu Gly Ser Tyr Ala Val Leu Ser Gly Thr Ser Met
        515                 520                 525

Ala Cys Pro Leu Ala Ala Ala Thr Trp Ala Leu Val Met Gln Lys Arg
    530                 535                 540

Gly Thr Lys Asp Pro Arg Val Leu Glu Asn Leu Phe Ser Ala Thr Ala
545                 550                 555                 560

His Pro Asn Leu Phe Asn Asp Gly Thr Thr Thr Tyr Pro Met Leu Ala
                565                 570                 575

Pro Val Ala Gln Gln Gly Ala Gly Leu Ile Gln Ala Trp Asp Ala Ala
            580                 585                 590

Asn Ala Asn Ala Leu Leu Ser Ile Ser Ser Ile Ser Phe Asn Asp Thr
        595                 600                 605

Ala Asn Ile Lys Pro Leu Gln Ser Phe Glu Val Thr Asn Thr Gly Lys
    610                 615                 620

Lys Ala Val Thr Tyr Gln Leu Gly His Thr Ser Ala Ala Thr Ala Tyr
625                 630                 635                 640
```

```
Thr Phe Ala Asp Ala Asn Thr Ile Asp Pro Ala Asp Phe Pro Asn Glu
                645                 650                 655

Leu Val Ala Asn Lys Ala Thr Leu Val Ile Thr Pro Ala Lys Leu Thr
            660                 665                 670

Leu Asn Pro Gly Gln Lys Lys Thr Val Thr Val Leu Ala Ile Pro Pro
        675                 680                 685

Lys Gly Leu Asp Ala Lys Arg Leu Pro Val Tyr Ser Gly Tyr Ile Thr
    690                 695                 700

Leu Asn Gly Thr Asp Ser Thr Gly Tyr Ser Leu Pro Tyr Gln Gly Val
705                 710                 715                 720

Val Gly Ser Met Lys Ala Val Thr Val Leu Asp Lys Gln Tyr Ser Tyr
                725                 730                 735

Leu Ser Gln Ser Ser Asp Ala Ala Leu Ala Pro Val Ala Ala Gly Thr
            740                 745                 750

Val Phe Thr Leu Pro Pro Ala Gly Lys Ala Asn Glu Thr Gln Tyr Ala
        755                 760                 765

Asn Thr Val Tyr Pro Thr Val Val Leu Thr Leu Ala Met Gly Ser Ala
    770                 775                 780

Glu Val Arg Ala Asp Val Val Asn Ala Lys Gly Lys Thr Ile Gly Gln
785                 790                 795                 800

Val Leu Thr Phe Pro Ala Tyr Trp Asn Pro Arg Gly Thr Phe Glu Trp
                805                 810                 815

Asn Trp Asp Gly Ala Leu Ser Asp Gly Ser Tyr Ala Pro Ala Gly Thr
            820                 825                 830

Tyr Lys Ile Thr Leu Arg Ala Leu Lys Ile Tyr Gly Asn Ser Arg Lys
        835                 840                 845

Pro Gln Asp Trp Glu Thr Gln Thr Thr Glu Ser Phe Ser Ile Lys Tyr
    850                 855                 860

Ala Lys Lys Asn Lys Arg Glu Phe Thr Ala
865                 870
```

<210> 93
<211> 886
<212> PRT
<213> Glomerella graminicola

<400> 93

```
Met Val Arg Ser Ser Leu Leu Leu Pro Leu Val Ala Ala Ala Ser Ala
1               5                  10                  15

Val Gln Ala Tyr Val Gln Ser Pro Lys Thr Val Ala Gly Ala Phe Ile
            20                  25                  30

Val Glu Leu Glu Asp Gly Gln Asp Ala Ser Glu Phe Leu Ala Lys Thr
        35                  40                  45

Lys Ala Asp Ala Val Thr Arg Met Asn Leu Asn Phe Thr Leu Phe Lys
    50                  55                  60

Gly Ala Ser Ile Gln Phe Asn Asp Leu Asp Thr Ala Asp Ala Lys Ala
65                  70                  75                  80

Ala Gln Leu Ala Gln Leu Pro Ser Val Lys Asn Met Trp Pro Val Arg
                85                  90                  95

Thr Tyr Gly Ile Pro Asp Ser Glu Val Val Trp Thr Gly Thr Gln Gly
            100                 105                 110

Arg Asp Tyr Val Asp Val Lys Lys Arg Gln Leu Gly Asn Asp Thr Phe
        115                 120                 125

Ser Thr His Val Gln Thr Gln Val Asp Lys Leu His Arg Asn Gly Val
    130                 135                 140

Thr Gly Lys Gly Ile Lys Val Ala Val Ile Asp Thr Gly Ile Asp Tyr
145                 150                 155                 160

Leu His Pro Ala Leu Gly Gly Cys Phe Gly Pro Gly Cys Leu Val Ser
                165                 170                 175

Tyr Gly Thr Asp Leu Val Gly Asn Asn Tyr Asp Gly Phe Asn Glu Gln
            180                 185                 190

Val Pro Asp Pro Asp Pro Met Asp Cys Gly Gly His Gly Thr His Val
        195                 200                 205

Ala Gly Ile Ile Ala Ala Gln Ser Asn Pro Phe Gly Phe Leu Gly Thr
    210                 215                 220

Ala Pro Gly Val Thr Leu Gly Ala Tyr Lys Val Phe Gly Cys Glu Gly
225                 230                 235                 240

Gln Val Gly Asn Asp Val Leu Ile Ala Ala Tyr Asn Arg Ala Phe Glu
                245                 250                 255

Glu Gly Ser Asn Ile Ile Thr Ala Ser Ile Gly Gly Pro Ser Gly Trp
            260                 265                 270
```

```
Thr Asp Glu Pro Trp Ala Ala Thr Val Ser Arg Ile Val Asp Ala Gly
        275                 280                 285

Val Pro Cys Thr Val Ser Ala Gly Asn Ser Gly Asp Gln Gly Ile Phe
    290                 295                 300

Phe Ala Ser Thr Ala Ala Ser Gly Arg His Val Thr Ala Ile Ala Ser
305                 310                 315                 320

Phe Asp Asn Ala Val Thr Pro Ala Leu Leu Ile Glu Asn Thr Phe Thr
                325                 330                 335

Val Ala Gly Gly Ala Pro Ser Thr Phe Ala Tyr Thr Pro Gly Glu Pro
            340                 345                 350

Ser Glu Trp Ala Gly Val Glu Leu Pro Leu Trp Ala Ile Thr Thr Asp
        355                 360                 365

Ser Ser Ser Asp Ala Ala Leu Gly Cys Asp Pro Tyr Pro Ala Gly Thr
    370                 375                 380

Pro Asp Leu Ser Gly Lys Ile Val Leu Val Lys Arg Gly Val Cys Thr
385                 390                 395                 400

Phe Val Val Lys Ala Gln Lys Ala Ala Ala Ala Gly Ala Lys Tyr Ile
                405                 410                 415

Met Val Tyr Asn Asn Val Pro Gly Ala Gly Ser Val Ser Val Thr Ala
            420                 425                 430

Val Pro Glu Ile Leu Ala Ile Gly Met Thr Thr Pro Asp Gln Gly Ala
        435                 440                 445

Ala Trp Leu Lys Ser Ile Ala Ala Gly Ser Glu Val Val Leu Lys Met
    450                 455                 460

Thr Asp Pro Glu Lys Ala Glu Gln Ile Leu Thr Gln Ser Val Asn Thr
465                 470                 475                 480

Ala Thr Gly Gly Tyr Val Ser Ser Tyr Ser Ser Trp Gly Pro Asn Trp
                485                 490                 495

Asp Gly Gln Gln Lys Pro Gln Phe Gly Ala Val Gly Gly Asn Val Leu
            500                 505                 510

Ser Thr Tyr Pro Arg Ala Leu Gly Ser Tyr Ala Val Leu Ser Gly Thr
        515                 520                 525

Ser Met Ser Cys Pro Gln Thr Ala Gly Ile Val Ala Leu Ile Ala Glu
    530                 535                 540
```

```
Val Arg Lys Thr Leu Asp Pro Ala Thr Ile Glu Asn Leu Leu Ser Ala
545                 550                 555                 560

His Ala Asn Pro Val Asn Phe Asn Ser Gly Ser Gly Pro Glu Gly Leu
                565                 570                 575

Leu Ala Pro Val Ser Gln Gln Gly Ala Gly Leu Val Gln Ala Tyr Asp
            580                 585                 590

Ala Ala Tyr Ser Thr Ile Leu Leu Ser His Ser Ser Leu Ser Phe Asn
        595                 600                 605

Asp Thr Asp Asn Phe Ile Pro Glu Leu Asn Phe Thr Ile Lys Asn Thr
    610                 615                 620

Gly Ser Ala Asp Val Ser Phe Asp Leu Ser Asn Val Gly Ala Ala Thr
625                 630                 635                 640

Ala Tyr Thr Phe Glu Thr Ala Gly Asp Leu Thr Pro Ala Leu Phe Pro
                645                 650                 655

Asn Asn Leu Thr Ala Glu His Ala Thr Val Ala Phe Ser Glu Ser Lys
            660                 665                 670

Val Ser Val Pro Ala Gly Gly Glu Ala Thr Ile Leu Val Thr Pro Thr
        675                 680                 685

Pro Pro Thr Leu Asp Ala Ala Arg Leu Pro Val Trp Ser Gly Tyr Ile
    690                 695                 700

Ala Ile Asn Gly Ser Asp Gly Ser Ser Met Ser Leu Pro Tyr Met Gly
705                 710                 715                 720

Ile Gly Gly Ser Leu His Ser His Val Thr Met Asp Glu Ala Leu Met
                725                 730                 735

Thr Thr Ser Thr Ser Ala Thr Ala Ala Glu Tyr Ala Pro Val Ala Ser
            740                 745                 750

Asn Tyr Thr Tyr Val Leu Pro Pro Pro Gly Thr Ala Asn Lys Thr Asp
        755                 760                 765

Ala Val Val Pro Ala Leu Ala Ile Asp Met Val Phe Gly Ser Ala Leu
    770                 775                 780

Val Arg Ala Asp Leu Val Pro Leu Thr Thr Tyr Pro Pro Asn Ile Thr
785                 790                 795                 800

His Lys Val Phe Gly Thr Lys Thr Leu Gly Gln Pro Arg Ser Phe Pro
                805                 810                 815
```

```
Tyr Thr Tyr Thr Ser Arg Gly Val Phe Ala Val Asn Trp Asp Gly Gln
            820                 825                 830

Met Asp Asp Gly Ser Tyr Ala Pro Ala Gly Lys Tyr Lys Phe Ser Val
        835                 840                 845

Lys Ser Leu Arg Val Phe Gly Asp Ala Ser Lys Leu Glu Glu Tyr Asp
    850                 855                 860

Val Ala Glu Thr Gln Pro Phe Arg Ile Ile Tyr Gly Ala Ala Asn Ala
865                 870                 875                 880

Thr Ala Pro Ala Arg His
                885
```

<210> 94
<211> 876
<212> PRT
<213> Neurospora tetrasperma

<400> 94

```
Met Val Arg Leu Gly Leu Ala Thr Thr Leu Leu Ala Ala Ala Ser Phe
1               5                   10                  15

Ala Gln Ala Ala Gln Gln Lys Ala Pro Ala Val Val Pro Gly Ala Tyr
            20                  25                  30

Ile Val Glu Tyr Glu Asp Ser His Asp Pro Thr Ser Ile Leu Ala Ser
        35                  40                  45

Ile Lys Gly Asp Ala Thr Ile Arg Lys Asp Ile Arg His Glu Leu Phe
    50                  55                  60

Lys Gly Ala Ser Phe Gln Phe Lys Asp Leu Asn Lys Ala Asp Asp Leu
65                  70                  75                  80

Ala Ser Lys Ile Ala Ala Met Ser Gly Val Lys Ala Leu Tyr Pro Val
                85                  90                  95

Arg Arg Tyr Ser Ile Pro Glu His Thr Val His Ser Thr Gly Ser Ala
            100                 105                 110

Val Gln Glu Val Val Ala Lys Arg Asp Thr Gly Asn Asp Thr Phe Ser
        115                 120                 125

Pro His Leu Met Thr Gln Val Asn Lys Phe Arg Asp Ser Gly Ile Thr
    130                 135                 140

Gly Lys Gly Ile Lys Ile Ala Val Ile Asp Thr Gly Ile Asp Tyr Leu
145                 150                 155                 160
```

```
His Pro Ala Leu Gly Gly Cys Phe Gly Pro Gly Cys Leu Val Ser Tyr
                165                 170                 175

Gly Thr Asp Leu Val Gly Asp Asp Phe Asn Gly Ser Asn Thr Pro Val
            180                 185                 190

Pro Asp Ser Asp Pro Met Asp Thr Cys Asn Gly His Gly Ser His Val
        195                 200                 205

Ser Gly Val Ile Ser Gly Asn Thr Asn Asn Pro Tyr Gly Ile Ile Gly
    210                 215                 220

Ala Ala Thr Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly Cys Ser
225                 230                 235                 240

Gly Asp Val Gly Asn Asp Ile Leu Ile Glu Ala Tyr Leu Lys Ala Tyr
                245                 250                 255

Asp Asp Gly Ser Asp Ile Ile Thr Ala Ser Ile Gly Gly Ala Ser Gly
            260                 265                 270

Trp Pro Glu Asp Ser Trp Ala Ala Val Val Ser Arg Ile Val Glu Lys
        275                 280                 285

Gly Val Pro Cys Leu Val Ser Ala Gly Asn Asp Gly Ala Thr Gly Ile
    290                 295                 300

Phe Tyr Ala Ser Thr Ala Ala Asn Gly Lys Arg Val Thr Ala Val Ala
305                 310                 315                 320

Ser Val Asp Asn Ile Leu Ala Pro Ala Leu Leu Ser Glu Ala Ser Tyr
                325                 330                 335

Ser Val Ala Asn Gly Ser Leu Ser Thr Phe Gly Phe Thr Ala Gly Ser
            340                 345                 350

Pro Ser Ala Trp Ala Asn Val Ser Leu Pro Val Trp Ser Val Asn Phe
        355                 360                 365

Asn Thr Ala Asp Thr Ala Asn Gly Cys Glu Ala Phe Pro Asp Asp Thr
    370                 375                 380

Pro Asp Leu Ser Lys Tyr Ile Val Leu Ile Arg Arg Gly Thr Cys Thr
385                 390                 395                 400

Phe Val Gln Lys Ala Gln Asn Ala Ala Ala Lys Gly Ala Lys Tyr Ile
                405                 410                 415

Ile Tyr Tyr Asn Asn Val Ser Gly Ser Thr Lys Val Asp Val Ser Ala
            420                 425                 430
```

```
Val Ala Gly Val Lys Ala Ala Ala Met Val Thr Ser Glu Thr Gly Val
        435                 440                 445

Ala Trp Ile Lys Ala Leu Gln Ala Gly Thr Gln Val Thr Val Asn Met
    450                 455                 460

Ala Asp Pro Glu Thr Ala Pro Lys Asn Leu Asn Asn Phe Pro Asn Thr
465                 470                 475                 480

Ala Thr Pro Gly Phe Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr Tyr
                485                 490                 495

Glu Val Asp Val Lys Pro Gln Ile Ser Ser Pro Gly Gly Met Ile Leu
            500                 505                 510

Ser Thr Tyr Pro Arg Ala Leu Gly Ser Tyr Ala Val Leu Ser Gly Thr
        515                 520                 525

Ser Met Ala Cys Pro Leu Ala Ala Ala Thr Trp Ala Leu Val Met Gln
    530                 535                 540

Lys Arg Gly Thr Lys Asp Pro Lys Val Leu Glu Asn Leu Phe Ser Ala
545                 550                 555                 560

Thr Ala His Pro Asn Leu Phe Asn Asp Gly Thr Lys Thr Tyr Pro Met
                565                 570                 575

Leu Ala Pro Val Ala Gln Gln Gly Ala Gly Leu Ile Gln Ala Trp Asp
            580                 585                 590

Ala Ala Asn Ala Asn Ala Leu Leu Ser Val Ser Ser Ile Ser Phe Asn
        595                 600                 605

Asp Thr Glu His Phe Lys Pro Leu Gln Ser Phe Glu Val Thr Asn Thr
    610                 615                 620

Gly Lys Lys Ala Val Thr Tyr Gln Leu Gly His Thr Ser Ala Ala Thr
625                 630                 635                 640

Ala Tyr Thr Phe Ala Asn Asp Asn Ser Ile Gly Pro Ala Ala Phe Pro
                645                 650                 655

Asn Glu Leu Val Asp Ala Lys Ala Thr Leu Val Leu Thr Pro Ala Lys
            660                 665                 670

Leu Thr Leu Asn Pro Gly Gln Lys Lys Thr Val Thr Val Leu Ala Ile
        675                 680                 685

Pro Pro Leu Gly Leu Asp Ala Lys Arg Leu Pro Val Tyr Ser Gly Tyr
    690                 695                 700
```

```
Ile Thr Leu Asn Gly Thr Asp Ser Thr Gly Tyr Ser Leu Pro Tyr Gln
705                 710                 715                 720

Gly Val Val Gly Ser Met Arg Ser Val Thr Val Leu Asp Lys Gln Asn
                725                 730                 735

Ser Tyr Leu Ser Gln Ser Ser Asp Ala Thr Tyr Ala Pro Val Ala Ala
            740                 745                 750

Gly Thr Thr Phe Thr Leu Pro Pro Ala Gly Lys Ala Asn Asp Thr Leu
        755                 760                 765

Tyr Ala Asn Thr Val Tyr Pro Thr Ile Val Leu Thr Leu Ser Met Gly
    770                 775                 780

Ser Ala Glu Val His Ala Asp Val Val Asn Ser Lys Gly Lys Thr Ile
785                 790                 795                 800

Gly Gln Val Leu Thr Phe Pro Ala Arg Trp Asn Pro Arg Gly Thr Phe
                805                 810                 815

Glu Trp Asn Trp Asp Gly Ala Leu Ser Asp Gly Thr Tyr Ala Pro Ala
            820                 825                 830

Asp Thr Tyr Lys Ile Thr Leu Lys Ala Leu Lys Ile Tyr Gly Asn Ser
        835                 840                 845

Lys Trp Pro Leu Asp Trp Glu Thr Gln Thr Thr Glu Pro Phe Thr Ile
    850                 855                 860

Lys Tyr Ala Ala Lys Ser Lys Arg Ala Phe Thr Ala
865                 870                 875
```

<210> 95
<211> 876
<212> PRT
<213> Neurospora crassa

<400> 95

```
Met Val Arg Leu Gly Leu Ala Thr Thr Leu Leu Ala Ala Ala Ser Phe
1               5                   10                  15

Ala Gln Ala Ala His Gln Lys Ala Pro Ala Val Val Pro Gly Ala Tyr
            20                  25                  30

Ile Val Glu Tyr Glu Asp Ser His Asp Pro Thr Ser Ile Leu Ala Ser
        35                  40                  45

Ile Lys Gly Asp Ala Thr Ile Arg Lys Asp Ile Arg His Glu Leu Phe
    50                  55                  60

Lys Gly Ala Ser Phe Gln Phe Lys Asp Leu Asn Lys Ala Asp Asp Leu
```

```
65                  70                  75                  80

Ala Ser Lys Val Ala Ala Met Ser Gly Val Lys Ala Leu Tyr Pro Val
                85                  90                  95

Arg Arg Tyr Ser Ile Pro Glu His Thr Val His Ser Thr Gly Ser Ala
            100                 105                 110

Val Gln Glu Val Val Ala Lys Arg Asp Thr Gly Asn Asp Thr Phe Ser
        115                 120                 125

Pro His Leu Met Thr Gln Val Asn Lys Phe Arg Asp Ser Gly Ile Thr
    130                 135                 140

Gly Lys Gly Ile Lys Ile Ala Val Ile Asp Thr Gly Val Asp Tyr Leu
145                 150                 155                 160

His Pro Ala Leu Gly Gly Cys Phe Gly Pro Gly Cys Leu Val Ser Tyr
                165                 170                 175

Gly Thr Asp Leu Val Gly Asp Asp Phe Asn Gly Ser Asn Thr Pro Val
            180                 185                 190

Pro Asp Ser Asp Pro Met Asp Thr Cys Asn Gly His Gly Ser His Val
        195                 200                 205

Leu Gly Leu Leu Ser Ala Asn Thr Asn Asn Pro Tyr Gly Ile Ile Gly
    210                 215                 220

Ala Ala Pro Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly Cys Ser
225                 230                 235                 240

Gly Asp Val Gly Asn Asp Ile Leu Ile Glu Ala Tyr Leu Lys Ala Tyr
                245                 250                 255

Asp Asp Gly Ser Asp Ile Ile Thr Ala Ser Ile Gly Gly Ala Ser Gly
            260                 265                 270

Trp Pro Glu Asp Ser Trp Ala Ala Val Val Ser Arg Ile Val Glu Lys
        275                 280                 285

Gly Val Pro Cys Leu Val Ser Ala Gly Asn Asp Gly Ala Thr Gly Ile
    290                 295                 300

Phe Tyr Ala Ser Thr Ala Ala Asn Gly Lys Arg Val Thr Ala Val Ala
305                 310                 315                 320

Ser Val Asp Asn Ile Leu Ala Pro Ala Leu Leu Ser Glu Ala Ser Tyr
                325                 330                 335

Ser Val Ala Asn Gly Ser Leu Ser Thr Phe Gly Phe Thr Ala Gly Ser
```

```
            340                 345                 350

Pro Ser Ala Trp Ala Asn Val Ser Leu Pro Val Trp Ser Val Asn Phe
        355                 360                 365

Asn Thr Ala Asp Ala Ala Asn Gly Cys Glu Ala Phe Pro Asp Asp Thr
    370                 375                 380

Pro Asp Leu Ser Lys Tyr Ile Val Leu Ile Arg Arg Gly Thr Cys Thr
385                 390                 395                 400

Phe Val Gln Lys Ala Gln Asn Ala Ala Ala Lys Gly Ala Lys Tyr Ile
                405                 410                 415

Ile Tyr Tyr Asn Asn Ala Ser Gly Ser Thr Lys Val Asp Val Ser Ala
            420                 425                 430

Val Ala Asp Val Lys Ala Ala Ala Met Val Thr Ser Glu Thr Gly Ala
        435                 440                 445

Ala Trp Ile Lys Ala Leu Gln Ala Gly Thr Gln Val Thr Val Asn Met
    450                 455                 460

Ala Asp Pro Glu Thr Ala Pro Lys Asn Leu Asn Asn Phe Pro Asn Thr
465                 470                 475                 480

Ala Thr Pro Gly Phe Leu Ser Thr Tyr Thr Ser Trp Gly Pro Thr Tyr
                485                 490                 495

Glu Val Asp Val Lys Pro Gln Ile Ser Ser Pro Gly Gly Met Ile Leu
            500                 505                 510

Ser Thr Tyr Pro Arg Ala Leu Gly Ser Tyr Ala Val Leu Ser Gly Thr
        515                 520                 525

Ser Met Ala Cys Pro Leu Ala Ala Ala Thr Trp Ala Leu Val Met Gln
    530                 535                 540

Lys Arg Gly Thr Lys Asp Pro Lys Val Leu Glu Asn Leu Phe Ser Ala
545                 550                 555                 560

Thr Ala His Pro Asn Leu Phe Asn Asp Gly Thr Lys Thr Tyr Pro Met
                565                 570                 575

Leu Ala Pro Val Ala Gln Gln Gly Ala Gly Leu Ile Gln Ala Trp Asp
            580                 585                 590

Ala Ala Asn Ala Asn Ala Leu Leu Ser Val Ser Ser Ile Ser Phe Asn
        595                 600                 605

Asp Thr Glu His Phe Lys Pro Leu Gln Ser Phe Glu Val Thr Asn Thr
```

610 615 620

Gly Lys Lys Ala Val Thr Tyr Gln Leu Gly His Thr Ser Ala Ala Thr
625 630 635 640

Ala Tyr Thr Phe Ala Asn Asp Thr Ser Ile Gly Pro Ala Ala Phe Pro
645 650 655

Asn Glu Leu Val Asp Ala Lys Ala Thr Leu Val Leu Thr Pro Ala Lys
660 665 670

Leu Thr Leu Asn Pro Gly Gln Lys Lys Thr Val Thr Val Leu Ala Ile
675 680 685

Pro Pro Leu Gly Leu Asp Ala Lys Arg Leu Pro Val Tyr Ser Gly Tyr
690 695 700

Ile Thr Leu Asn Gly Thr Asp Ser Thr Gly Tyr Ser Leu Pro Tyr Gln
705 710 715 720

Gly Val Val Gly Ser Met Arg Ser Val Thr Val Leu Asp Lys Gln Asn
725 730 735

Ser Tyr Leu Ser Gln Ser Ser Asp Ala Thr Tyr Ala Pro Val Ala Ala
740 745 750

Gly Thr Thr Phe Thr Leu Pro Pro Ala Gly Lys Ala Asn Asp Thr Leu
755 760 765

Tyr Ala Thr Thr Val Tyr Pro Thr Ile Val Leu Thr Leu Ser Met Gly
770 775 780

Ser Ala Glu Val His Ala Asp Val Val Asn Ser Lys Gly Lys Thr Ile
785 790 795 800

Gly Gln Val Leu Thr Phe Pro Ala Arg Trp Asn Pro Arg Gly Thr Phe
805 810 815

Glu Trp Asn Trp Asp Gly Ala Leu Ser Asp Gly Thr Tyr Ala Pro Ala
820 825 830

Asp Thr Tyr Lys Ile Thr Leu Lys Ala Leu Lys Ile Tyr Gly Asn Ser
835 840 845

Lys Trp Pro Leu Asp Trp Glu Thr Gln Thr Thr Glu Pro Phe Thr Ile
850 855 860

Lys Tyr Ala Ala Lys Ser Lys Arg Ala Phe Thr Ala
865 870 875

<210> 96

<211> 902
<212> PRT
<213> Magnaporthe oryzae

<400> 96

```
Met Val Gly Lys Ala Ile Val Leu Ser Leu Phe Ala Ala Thr Cys Leu
1               5                  10                  15

Ala Ser Gln Ala Thr Lys Pro Val Glu Glu Lys Ala Pro Ile Ile Pro
            20                  25                  30

Gly Leu Tyr Ile Val Glu Tyr Glu Glu Gly Gln Met Asp Thr Ala Thr
        35                  40                  45

Leu Ser Asn Glu Ile Ala Ser Asp Ala His Val Lys Met Asn Leu Asp
    50                  55                  60

Phe Glu Leu Phe Lys Gly Ala Ser Ile Gln Phe His Asp Ser Ala His
65                  70                  75                  80

Val Glu Glu Thr Ala Ala Lys Ile Ala Glu Met Pro Ala Ile Lys Arg
                85                  90                  95

Met Trp Pro Gln Arg Leu Tyr Arg Ile Pro Asp Tyr Gln Val Ser Trp
            100                 105                 110

Ala Gly Asp Met Pro Asp Ala Gln Ala Lys Ala Val Met Arg Arg Gln
        115                 120                 125

Ser Asp Gly Asn Asp Thr Phe Thr Pro His Leu Met Thr Gln Val Asn
    130                 135                 140

Gln Leu Arg Asn Lys Gly Val Val Gly Lys Gly Ile Lys Val Ala Val
145                 150                 155                 160

Ile Asp Ser Gly Val Asp Trp Lys His Pro Ala Leu Gly Gly Cys Phe
                165                 170                 175

Gly Arg Pro Glu Cys Leu Val Ser Phe Gly Tyr Asp Leu Val Gly Asp
            180                 185                 190

Ala Tyr Asn Gly Thr Asn Thr Ala Val Pro Asp Asn Asp Pro Met Asp
        195                 200                 205

Cys Gly Gly His Gly Thr His Val Ser Gly Ile Ile Ala Ala Gln Thr
    210                 215                 220

Asn Asn Pro Phe Gly Ile Ile Gly Ala Ala Thr Gly Val Thr Met Gly
225                 230                 235                 240

His Tyr Arg Val Phe Gly Cys Glu Gly Ser Ala Ser Asp Asp Val Leu
                245                 250                 255
```

```
Ile Gln Ala Tyr Asn Met Ala Tyr Gln Asp Gly Ala Asp Leu Ile Thr
            260                 265                 270

Ala Ser Ile Ala Gly Ser Ser Gly Trp Pro Glu Gln Ala Trp Ala Val
        275                 280                 285

Ala Val Thr Arg Ile Val Asp Lys Gly Val Pro Cys Val Ile Ser Ala
    290                 295                 300

Gly Asn Asp Gly Ala Thr Gly Met Phe Phe Thr Ser Ser Ala Ala Asp
305                 310                 315                 320

Ala Arg Gly Ala Thr Ala Ile Ala Ser Phe Asp Asn Ser Val Thr Pro
                325                 330                 335

Gln Leu Leu Ser Asn Ala Thr Tyr Arg Val Gly Gly Gly Gln Pro Val
            340                 345                 350

Ser Phe Ser Tyr Ser Ala Gly Ser Pro Ala Lys Trp Gly Asn Val Thr
        355                 360                 365

Lys Gln Leu Trp Ala Val Asn Phe Asn Thr Asn Asp Thr Gln Asn Ala
    370                 375                 380

Cys Asp Pro Leu Pro Ala Asn Thr Pro Asp Leu Ser Asn Phe Ile Val
385                 390                 395                 400

Leu Ile Arg Arg Gly Thr Cys Pro Phe Thr Gln Lys Ala Thr Asn Val
                405                 410                 415

Arg Ala Lys Gly Ala Lys Tyr Val Phe Phe Tyr Asn Asn Val Pro Gly
            420                 425                 430

Thr Leu Ser Ile Ser Val Thr Ala Val Asp Gly Ile Leu Gly Ala Ala
        435                 440                 445

Thr Val Ser Ala Glu Ile Gly Lys Ser Trp Ile Ala Glu Leu Ala Ala
    450                 455                 460

Gly Arg Asn Val Thr Leu Glu Met Thr Asp Pro Leu Thr Ala Pro Lys
465                 470                 475                 480

Phe Leu Leu Ser Ala Pro Asn Ser Ala Thr Gly Gly Ala Pro Ser Thr
                485                 490                 495

Tyr Thr Ser Trp Gly Pro Thr Phe Glu Gly Gln Val Lys Pro Gln Val
            500                 505                 510

Ala Ala Pro Gly Gly Asn Ile Leu Ser Thr Tyr Pro Leu Ala Lys Gly
        515                 520                 525
```

```
Gly Tyr Ala Val Leu Ser Gly Thr Ser Met Ala Cys Pro Leu Thr Ala
    530                 535                 540

Gly Val Tyr Ala Leu Ile Met Ser Val Arg Gly Ile Lys Asp Pro Lys
545                 550                 555                 560

Thr Leu Glu Asn Leu Val Ala Ser Thr Ala Lys Pro Thr Leu Phe Asn
                565                 570                 575

Ser Gly Ser Thr Ser Ala Ser Tyr Leu Ala Pro Val Pro Gln Gln Gly
            580                 585                 590

Ala Gly Leu Ile Gln Ala Tyr Asp Ala Ala Tyr Thr Thr Thr Leu Leu
        595                 600                 605

Ser Val Ser Ser Leu Ala Phe Asn Asp Thr Asp Asn Phe Ala Pro Val
    610                 615                 620

Gln Asn Phe Thr Ile Ser Asn Lys Gly Ser Ser Ser Val Thr Tyr Thr
625                 630                 635                 640

Leu Ser Gln Arg Gly Ala Ala Thr Ala Phe Thr Phe Ser Ser Asn Ala
                645                 650                 655

Ser Asn Ile Thr Pro Glu Val Phe Pro Asn Glu Leu Val Ala Asn Tyr
            660                 665                 670

Ala Asn Leu Lys Phe Ser Glu Glu Lys Leu Glu Val Gly Pro Gly Gly
        675                 680                 685

Asn Ala Gln Ile Ala Val Thr Val Thr Pro Pro Ser Gly Leu Asp Ala
    690                 695                 700

Arg Arg Leu Pro Val Tyr Ser Gly Tyr Val Thr Ile Asn Gly Thr Asp
705                 710                 715                 720

Gly Ser Ser Phe Ser Leu Pro Tyr Met Gly Ile Ala Gly Ser Ile His
                725                 730                 735

Ala Gln Arg Thr Leu Asp Pro Gln Gln Thr Phe Leu Ser Ser Asn Gln
            740                 745                 750

Ile Pro Arg Asn Phe Thr Glu Asp Asn Pro Pro Arg Val Pro Ala Gly
        755                 760                 765

His Gln Phe Asp Leu Pro Pro Gln Gly Gln Ala Asn Asn Thr Gln Tyr
    770                 775                 780

Val Leu Val Ser Glu Met Pro Arg Phe Ser Ile Asn Leu Ala Trp Gly
785                 790                 795                 800
```

```
Thr Pro Leu Leu Arg Ala Asp Val Val Ala Leu Gly Gly Asn Ser Thr
                805                 810                 815

Ala Ala Glu Gln Pro Leu Ala Glu Thr Glu Val Leu Gly Leu Lys Thr
            820                 825                 830

Val Gly Ser Leu Gln Tyr Phe Pro Gln Arg Tyr Gln Ala Arg Thr Arg
        835                 840                 845

Ser Phe Val Arg Trp Asp Gly Ile Leu Asp Ser Gly Lys Tyr Ala Pro
    850                 855                 860

Ser Gly His Tyr Lys Ile Val Phe Arg Ala Leu Arg Val Phe Gly Asn
865                 870                 875                 880

Ser Glu Lys Gln Asp Glu Tyr Asp Val Val Glu Thr Val Pro Phe Lys
                885                 890                 895

Ile Arg Tyr Ile Asn Lys
            900


<210>  97
<211>  1006
<212>  PRT
<213>  Chaetomium globosum

<400>  97

Met Ala Leu Phe Ser Ala Val Glu Ala Trp His Pro Gly Leu Ser Pro
1               5                   10                  15

Gly Ala Thr Pro Ser Val Asp Gly Asp His Pro Arg Gly Gly Ala Val
            20                  25                  30

Arg Gly Ala Leu Ser Gln Glu Gly Asp Ile Ser Leu Gln Glu His Ala
        35                  40                  45

Pro His Glu Ser Cys Tyr Leu Ile Tyr Tyr Val Gln Asn Ala Ser Asp
    50                  55                  60

His Thr Val Pro Pro Gln Ala Ala Pro Arg Glu Glu Ala Arg Pro Met
65                  70                  75                  80

Tyr Gly Gln Val Lys Asp Glu Leu Lys His Ser Lys Leu Ser His Asp
                85                  90                  95

Ile Arg Leu Gln Leu Phe Pro Leu Leu Trp Ala Ser Phe Leu Ser Thr
            100                 105                 110

Ser Lys Gly Ile Leu Leu Gln Arg Glu Leu Arg Asn Gly Thr Cys Gln
        115                 120                 125
```

```
Ala Gln Pro Asn Ser Asp His Pro Ser Ala Gly Gly Ser Ala Arg Pro
    130                 135                 140

Leu Cys Ala Pro Pro Ser Val Asp Ser Asn Ala Phe Val Asn Asn Leu
145                 150                 155                 160

Gly Gly Lys Ala Ser Leu Arg Lys Asp Leu Arg Phe Lys Leu Phe Lys
                165                 170                 175

Gly Ala Ser Ile Gln Phe Lys Asp Thr Lys Asn Ala Asp Gln Met Ile
            180                 185                 190

Ala Lys Val Ala Thr Met Pro Lys Ile Lys Ala Val Tyr Pro Val Arg
        195                 200                 205

Arg Tyr Pro Val Pro Arg His Val Val His Ser Thr Gly Asp Ala Val
    210                 215                 220

Glu Ala Val Leu Ser Lys Arg Gln Glu Gly Ser Asp Thr Phe Ser Thr
225                 230                 235                 240

His Leu Met Thr Gln Val Asn Arg Phe Lys Asp Lys Ala Val Thr Gly
                245                 250                 255

Lys Gly Ile Lys Ile Gly Ile Ile Asp Thr Gly Thr Asp Tyr Leu His
            260                 265                 270

Pro Ala Leu Gly Gly Cys Phe Gly Glu Gly Cys Leu Val Ser Tyr Gly
        275                 280                 285

Thr Asp Leu Val Gly Asp Lys Phe Asn Gly Ala Asn Thr Pro Val Pro
    290                 295                 300

Asp Ala Asp Pro Leu Asp Glu Cys Asn Gly His Gly Thr His Val Ala
305                 310                 315                 320

Gly Ile Ile Ala Ala Gln Ser Asn Asn Pro Tyr Gly Ile Val Gly Ala
                325                 330                 335

Ala Glu Gly Val Thr Leu Gly Ser Tyr Arg Val Phe Gly Cys Thr Gly
            340                 345                 350

Asp Val Gly Asn Asp Ile Leu Ile Ala Ala Tyr Asn Met Ala Tyr Glu
        355                 360                 365

Asp Gly Ser Asp Ile Ile Thr Ala Ser Ile Gly Gly Ala Ser Gly Trp
    370                 375                 380

Ser Glu Asp Pro Trp Ala Ala Val Val Ser Arg Ile Val Asp Asn Gly
385                 390                 395                 400
```

```
Val Pro Cys Val Val Ser Ala Gly Asn Asp Gly Ala Ala Gly Ile Phe
                405                 410                 415

Tyr Ala Ser Thr Ala Ala Asn Gly Lys Arg Val Thr Ala Ile Ala Ser
            420                 425                 430

Val Asp Asn Thr Val Thr Pro Ala Leu Leu Ser Asn Ala Ser Phe Ser
        435                 440                 445

Ile Asn Gly Thr Ser Asp Phe Phe Gly Phe Thr Ala Gly Glu Pro Gly
    450                 455                 460

Thr Trp Asp Asp Val Thr Leu Pro Leu Trp Ser Val Gly Phe Asp Thr
465                 470                 475                 480

Thr Asp Pro Ala Asn Gly Cys Glu Pro Tyr Pro Asp Ser Thr Pro Asp
                485                 490                 495

Leu Ser Gly Tyr Ile Val Leu Val Arg Arg Gly Thr Cys Ala Phe Val
            500                 505                 510

Asp Lys Ala Ala Asn Ala Val Ala Lys Gly Ala Lys Tyr Val Met Phe
        515                 520                 525

Tyr Asn Asn Val Asp Gly Thr Val Ser Val Ser Ala Asn Val Glu Gly
    530                 535                 540

Val Val Gly Val Ala Met Val Thr Pro Glu Gln Gly Glu Ile Trp Val
545                 550                 555                 560

Arg Ala Leu Glu Ala Gly Ser Glu Val Val Val His Met Thr Asp Pro
                565                 570                 575

Leu Lys Ala Gly Thr Phe Leu Ser Ser Ser Lys Asn Thr Leu Ser Gly
            580                 585                 590

Gly Phe Leu Ser Asp Phe Thr Ser Trp Gly Pro Thr Tyr Glu Val Glu
        595                 600                 605

Val Lys Pro Gln Phe Ser Thr Pro Gly Gly Leu Ile Leu Ser Thr Tyr
    610                 615                 620

Pro Arg Ala Leu Gly Ser Tyr Gly Val Leu Ser Gly Thr Ser Met Ala
625                 630                 635                 640

Cys Pro Met Ala Ala Ala Ile Tyr Ala Leu Leu Met Thr Ala Arg Asn
                645                 650                 655

Thr Lys Asp Pro Lys Thr Leu Glu Asn Val Leu Ser Ala Thr Ala Arg
            660                 665                 670
```

```
Pro Asn Val Phe Arg Leu Gln Gly Lys Ser Leu Pro Val Leu Ala Pro
        675                 680                 685

Val Ala Gln Gln Gly Ala Gly Leu Leu Gln Ala Trp Asp Ala Ala Arg
    690                 695                 700

Ala Thr Thr Leu Leu Ser Val Ser Ser Ile Ser Phe Asn Asp Thr Asp
705                 710                 715                 720

Asn Phe Ser Pro Val Gln Asn Phe Ser Ile Ser Asn Thr Gly Ala Thr
                725                 730                 735

Ala Val Thr Tyr Ser Leu Ser Asn Ile Gly Ala Ala Thr Ala Tyr Thr
            740                 745                 750

Phe Asn Asp Glu Lys Thr Ile Ser Pro Ala Ala Phe Pro Asn Glu Leu
        755                 760                 765

Thr Gly Asp Phe Ala Ser Leu Ser Phe Ser Pro Ser Asn Phe Thr Ile
    770                 775                 780

Pro Ala Gly Gln Arg Lys Ile Ile Thr Val Thr Ala Thr Pro Pro Lys
785                 790                 795                 800

Gly Val Asn Val Lys Arg Leu Pro Val Tyr Ser Gly Tyr Ile Ala Ile
                805                 810                 815

Asn Gly Ser Asp Ser Ser Ala Leu Ser Leu Pro Tyr Leu Gly Val Ala
            820                 825                 830

Gly Ser Met Arg Ser Val Val Val Leu Asp Ser Lys Ala Ala Leu Ile
        835                 840                 845

Ser Ser Ala Arg Asp Gln Ser Asn Thr Pro Val Pro Ala Gly Val Thr
    850                 855                 860

Phe Val Leu Pro Pro Pro Gly Phe Ser Asn Asp Ser Ser Tyr Ala Asn
865                 870                 875                 880

Arg Thr Glu Arg Pro Lys Leu Val Val Ser Leu Ala Met Gly Ser Ala
                885                 890                 895

Val Leu Arg Ala Asp Ile Val Pro Val Ser Asn Cys Thr Thr Val Ala
            900                 905                 910

Arg Thr Ala Gly Val Val Phe Gly Thr Lys Thr Ile Gly Gln Pro Glu
        915                 920                 925

Gly Leu Pro Ala Leu Trp Asn Pro Arg Gly Arg Phe Glu Tyr Ser Trp
    930                 935                 940
```

```
Asp Gly Lys Leu Asp Asp Gly Thr Tyr Ala Pro Ala Gly Arg Tyr Lys
945                 950                 955                 960


Phe Ala Val Lys Ala Leu Arg Ile Phe Gly Asp Arg Glu Glu Val Ala
                965                 970                 975


Asp Tyr Asp Ala Ala Glu Thr Thr Asp Phe Arg Ile Arg Tyr Leu Pro
            980                 985                 990


Ala Pro Ser Ala Lys Phe Arg Arg  Gln Glu Gln Gly Cys  Glu
        995                 1000                1005


<210>  98
<211>  541
<212>  PRT
<213>  Trichoderma reesei

<400>  98

Met Arg Ser Val Val Ala Leu Ser Met Ala Ala Val Ala Gln Ala Ser
1               5                   10                  15


Thr Phe Gln Ile Gly Thr Ile His Glu Lys Ser Ala Pro Val Leu Ser
            20                  25                  30


Asn Val Glu Ala Asn Ala Ile Pro Asp Ala Tyr Ile Ile Lys Phe Lys
        35                  40                  45


Asp His Val Gly Glu Asp Asp Ala Ser Lys His His Asp Trp Ile Gln
    50                  55                  60


Ser Ile His Thr Asn Val Glu Gln Glu Arg Leu Glu Leu Arg Lys Arg
65                  70                  75                  80


Ser Asn Val Phe Gly Ala Asp Asp Val Phe Asp Gly Leu Lys His Thr
                85                  90                  95


Phe Lys Ile Gly Asp Gly Phe Lys Gly Tyr Ala Gly His Phe His Glu
            100                 105                 110


Ser Val Ile Glu Gln Val Arg Asn His Pro Asp Val Glu Tyr Ile Glu
        115                 120                 125


Arg Asp Ser Ile Val His Thr Met Leu Pro Leu Glu Ser Lys Asp Ser
    130                 135                 140


Ile Ile Val Glu Asp Ser Cys Asn Gly Glu Thr Glu Lys Gln Ala Pro
145                 150                 155                 160


Trp Gly Leu Ala Arg Ile Ser His Arg Glu Thr Leu Asn Phe Gly Ser
                165                 170                 175
```

```
Phe Asn Lys Tyr Leu Tyr Thr Ala Asp Gly Gly Glu Gly Val Asp Ala
            180                 185                 190

Tyr Val Ile Asp Thr Gly Thr Asn Ile Glu His Val Asp Phe Glu Gly
        195                 200                 205

Arg Ala Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Glu Asp Glu Asp
    210                 215                 220

Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys
225                 230                 235                 240

Tyr Gly Val Ala Lys Lys Ala His Val Tyr Ala Val Lys Val Leu Arg
                245                 250                 255

Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val Glu Tyr
            260                 265                 270

Ala Ala Leu Ser His Ile Glu Gln Val Lys Lys Ala Lys Lys Gly Lys
        275                 280                 285

Arg Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly
    290                 295                 300

Lys Thr Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Arg Ala Gly
305                 310                 315                 320

Val His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn
                325                 330                 335

Tyr Ser Pro Ala Ala Ala Thr Glu Pro Leu Thr Val Gly Ala Ser Ala
            340                 345                 350

Leu Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp
        355                 360                 365

Ile Phe Ala Pro Gly Leu Ser Ile Gln Ser Thr Trp Ile Gly Ser Lys
    370                 375                 380

Tyr Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile
385                 390                 395                 400

Cys Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Gly Asp Ser
                405                 410                 415

Glu Phe Ala Val Ala Pro Ile Thr Pro Lys Lys Leu Lys Glu Ser Val
            420                 425                 430

Ile Ser Val Ala Thr Lys Asn Ala Leu Ser Asp Leu Pro Asp Ser Asp
        435                 440                 445
```

```
Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Phe Ser
    450                 455                 460

Gln Ile Val Glu Ala Gly Ser Tyr Thr Val Lys Pro Lys Gln Asn Lys
465                 470                 475                 480

Gln Ala Lys Leu Pro Ser Thr Ile Glu Glu Leu Glu Glu Ala Ile Glu
                485                 490                 495

Gly Asp Phe Glu Val Val Ser Gly Glu Ile Val Lys Gly Ala Lys Ser
            500                 505                 510

Phe Gly Ser Lys Ala Glu Lys Phe Ala Lys Lys Ile His Asp Leu Val
        515                 520                 525

Glu Glu Glu Ile Glu Glu Phe Ile Ser Glu Leu Ser Glu
    530                 535                 540
```

<210> 99
<211> 537
<212> PRT
<213> Trichoderma atroviride

<400> 99

```
Met Arg Ser Val Ile Ala Leu Ser Val Ala Ala Val Ala Gln Ala Ser
1               5                   10                  15

Ser Phe Gln Val Gly Thr Ile His Glu Ser Ser Ala Pro Val Leu Ser
            20                  25                  30

Asn Ile Glu Ala Asn Ala Ile Pro Asp Asn Tyr Ile Ile Lys Phe Lys
        35                  40                  45

Asp His Val Asp Glu Ala Gly Ala Asp Lys His Gln Asn Trp Ile Gln
    50                  55                  60

Ser Ile His Asp Glu Gly Glu Gln Gln Arg Leu Glu Leu Arg Lys Arg
65                  70                  75                  80

Ser Ser Ile Phe Gly Ala Asp Glu Ala Phe Asp Gly Leu Lys His Thr
                85                  90                  95

Phe Lys Ile Gly Asp Phe Lys Gly Tyr Ala Gly His Phe Thr Glu Asp
            100                 105                 110

Ile Ile Glu Gln Val Arg Asn His Pro Asp Val Glu Tyr Ile Glu Arg
        115                 120                 125

Asp Thr Ile Val His Thr Met Leu Pro Leu Asp Ser Gln Asp Ser Val
    130                 135                 140

Val Val Glu Asp Ser Cys Asn Pro Glu Thr Glu Lys Gln Ala Pro Trp
```

```
145                 150                 155                 160

Gly Leu Ala Arg Ile Ser His Arg Asp Thr Leu Gly Phe Gly Thr Phe
                165                 170                 175

Asn Lys Tyr Leu Tyr Thr Ala Asp Gly Gly Glu Gly Val Asp Ala Tyr
            180                 185                 190

Val Ile Asp Thr Gly Thr Asn Ile Glu His Val Asp Phe Glu Gly Arg
        195                 200                 205

Ala Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Glu Asp Glu Asp Gly
    210                 215                 220

Asn Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys Tyr
225                 230                 235                 240

Gly Val Ala Lys Lys Ala His Val Tyr Ala Val Lys Val Leu Arg Ser
                245                 250                 255

Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val Glu Tyr Ala
            260                 265                 270

Ala Leu Ser His Gln Glu Gln Val Lys Gln Ala Lys Ala Gly Lys Arg
        275                 280                 285

Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys
    290                 295                 300

Thr Ser Ala Leu Asp Ala Ala Val Asn Ala Ala Val Lys Ala Gly Val
305                 310                 315                 320

His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr
                325                 330                 335

Ser Pro Ala Ala Ala Thr Glu Pro Val Thr Val Gly Ala Ser Ala Leu
            340                 345                 350

Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile
        355                 360                 365

Phe Ala Pro Gly Leu Ser Ile Gln Ser Thr Trp Ile Gly Ser Lys Tyr
    370                 375                 380

Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala
385                 390                 395                 400

Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Gly Asp Ser Glu
                405                 410                 415

Phe Ala Val Ala Pro Ile Thr Pro Asn Lys Leu Lys Lys Asp Leu Ile
```

420 425 430

Thr Ile Ala Thr Gln Gly Thr Leu Ser Asp Ile Pro Ala Asp Thr Pro
435 440 445

Asn Leu Leu Ala Trp Asn Gly Ala Gly Cys Ser Asn Tyr Ser Gln Ile
450 455 460

Val Lys Ala Gly Gly Tyr Lys Ala Lys Ala Gln Lys Gln Thr Lys Leu
465 470 475 480

Pro Ala Thr Ile Glu Glu Leu Glu Asp Ala Ile Glu Gly Asp Phe Glu
485 490 495

Val Val Ser Gly Lys Ile Val Lys Gly Ala Lys Ser Phe Gly Ser Lys
500 505 510

Ala Glu Lys Phe Ala Lys Lys Ile His Asp Leu Val Glu Glu Glu Ile
515 520 525

Asp Glu Phe Met Ser Glu Leu Ser Glu
530 535

<210> 100
<211> 1670
<212> PRT
<213> Trichoderma virens

<400> 100

Met Arg Ser Val Val Ala Leu Ser Val Ala Ala Val Ala Gln Ala Ser
1 5 10 15

Ser Phe Ser Ile Gly Thr Ile His Glu Ser Ser Ala Pro Val Leu Ser
20 25 30

Thr Val Glu Ala Asn Ala Ile Pro Asp Ala Tyr Ile Ile Lys Phe Lys
35 40 45

Asp His Val Gly Glu Ala Asp Ala Asp Lys His His Asn Trp Leu Gln
50 55 60

Asn Ile His Ser Ser Gly Glu Gln Glu Arg Leu Glu Leu Arg Lys Arg
65 70 75 80

Ser Asn Ile Phe Gly Ser Asp Asp Ala Phe Ala Gly Leu Lys His Thr
85 90 95

Phe Lys Met Asp Gly Phe Lys Gly Tyr Ala Gly His Phe His Glu Ser
100 105 110

Val Ile Glu Gln Val Arg Asn His Pro Asp Val Glu Tyr Ile Glu Arg
115 120 125

```
Asp Ser Ile Val His Thr Met Leu Pro Leu Glu Ser Lys Asp Thr Ile
    130                 135                 140

Ile Val Glu Asp Ser Cys Asn Gly Glu Thr Glu Lys Gln Ala Pro Trp
145                 150                 155                 160

Gly Leu Ala Arg Ile Ser His Arg Glu Thr Leu Asn Phe Gly Ser Phe
                165                 170                 175

Asn Lys Tyr Leu Tyr Thr Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr
            180                 185                 190

Val Ile Asp Thr Gly Thr Asn Ile Asp His Val Asp Phe Glu Gly Arg
        195                 200                 205

Ala Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Glu Asp Glu Asp Gly
    210                 215                 220

Asn Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys Tyr
225                 230                 235                 240

Gly Val Ala Lys Lys Ala His Val Tyr Ala Val Lys Val Leu Arg Ser
                245                 250                 255

Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val Glu Trp Ala
            260                 265                 270

Ala Leu Ala His Ile Glu Ala Val Lys Gln Ala Lys Ala Gly Lys Arg
        275                 280                 285

Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys
    290                 295                 300

Thr Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Asn Ala Gly Val
305                 310                 315                 320

His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr
                325                 330                 335

Ser Pro Ala Ala Ala Ser Ala Pro Leu Thr Val Gly Ala Ser Ala Leu
            340                 345                 350

Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile
        355                 360                 365

Phe Ala Pro Gly Leu Ser Ile Gln Ser Thr Trp Ile Gly Ser Lys Tyr
    370                 375                 380

Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Cys
385                 390                 395                 400
```

```
Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Gly Asp Ser Glu
                405                 410                 415

Phe Ala Val Ala Pro Ile Thr Pro Lys Lys Leu Lys Glu Asn Ile Val
            420                 425                 430

Ser Ile Ala Thr Lys Gly Ala Leu Ser Asp Leu Pro Asp Ser Asp Thr
        435                 440                 445

Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Phe Ser Gln
    450                 455                 460

Ile Leu Glu Ala Gly Ser Tyr Thr Val Lys Pro Lys Ala Lys His Ala
465                 470                 475                 480

Lys Leu Pro Ala Thr Val Ser Glu Leu Glu Lys Ala Ile Glu Gly Asp
                485                 490                 495

Phe Glu Val Val Ser Gly Lys Ile Val Lys Gly Ala Lys Thr Phe Gly
            500                 505                 510

Ser Lys Ala Glu Lys Phe Ala Lys Lys Ile His Asp Leu Val Glu Glu
        515                 520                 525

Glu Ile Glu Glu Phe Ile Ser Glu Leu Ser Asp Asn Gly His Asn Ala
    530                 535                 540

Pro Met Arg Leu Ser Val Arg Gly Phe Met Asp Arg Tyr Gln Glu Arg
545                 550                 555                 560

Leu Val Leu Phe Leu Gly Ile Arg His Ala Leu Trp Ala Arg Ser His
                565                 570                 575

Gly Phe Ile Phe Ala Phe Ser Tyr Tyr Ser Tyr Leu Ala Ser Pro Ile
            580                 585                 590

Trp Leu Arg Lys Thr Gln Met Ala Ala Ser Cys Gln Lys Pro Gln Ser
        595                 600                 605

Leu Thr Arg Lys Ala Gly Ala Lys Arg Cys Lys Thr Gly Ser Phe Arg
    610                 615                 620

Thr Ile Trp Gln Asn Gly Phe Phe Arg Tyr Gly Arg Arg His Arg Arg
625                 630                 635                 640

Leu Leu Pro Leu Asn Trp Gln Glu His Ala Lys Arg Lys Thr Lys Ile
                645                 650                 655

Ser Pro Ser His Tyr His Ser Thr Arg His Arg His Leu Leu His Ile
            660                 665                 670
```

```
Val Gly Gln Gly Val Thr Ile Arg Ala Thr Ser Leu Arg Ser Leu Tyr
        675                 680                 685

Ser Leu Asn Asn Asp Asn Ala Ser Gln Glu Gln Leu Gln Lys Pro Glu
    690                 695                 700

Ser Ser Pro Pro Glu Gln Glu Gln Pro Tyr Ala Ala Glu Arg Asp Ala
705                 710                 715                 720

Tyr Leu Ala Ala Thr Leu Ser Tyr Asn Arg Ala Gln Pro Gln Ser Asn
                725                 730                 735

Gly Gly Gly Lys Ala Ser Arg Leu His Arg Gln Gln Ser Val Arg Phe
            740                 745                 750

Ala Gly Pro Asn Ala Gln Pro Gln Arg Arg Leu Ala Ala Arg Ala Ser
        755                 760                 765

Met Ala Leu Val Gly Asn Ile Asn Met Pro Arg Arg Pro Val Gly Ser
    770                 775                 780

Gln His Leu Ser Gln Ser Ser Phe Glu Pro Gly Glu Asp Ala Ala Ser
785                 790                 795                 800

Leu Ser Tyr Ala Arg Leu Arg Lys Ser Arg Ser Met Tyr Thr Pro Ser
                805                 810                 815

Ile Pro Asn Thr Pro Thr Tyr Thr Met Asp Ser Gly Asp Ser Val Asp
            820                 825                 830

Val Leu Asn Gly Trp Leu Pro Thr Pro Gln Ile Arg Lys Glu Asn Glu
        835                 840                 845

Pro Leu Arg Ser Phe Gly Gly Pro Ala Leu Arg Ser Pro Lys Ser Met
    850                 855                 860

Gly Phe Leu Ser Asn Asp Cys Glu Ile Ser Thr Ser Arg Ala Ser Ile
865                 870                 875                 880

Ser Ser Gly His Ala Ser Val Gln Gln Thr Arg Asn Gly Phe Tyr Glu
                885                 890                 895

Pro Ser Glu Arg Ser Ser Arg Leu Gln Ser Arg Pro Ser Ser Phe Phe
            900                 905                 910

Arg Ser Ser Tyr Arg His Ala Pro Asn Pro Thr Ser Phe Pro Lys Ser
        915                 920                 925

Leu Arg Gly Ser Ser Asn Asn Thr Ser Phe Leu Ser Ser Glu Ser Ile
    930                 935                 940
```

```
Tyr Gly Ala Lys Phe Pro Pro Gln Ile Pro Ser Glu Gln Pro Gly Leu
945                 950                 955                 960

Arg Lys Lys Ala Arg Lys Ile Ser Lys Ser Leu Lys Ser Arg Ile Lys
                965                 970                 975

Gly Leu Phe Ser Arg Pro Lys Asn Arg Asp Asp Ile Val Asp Gln Thr
            980                 985                 990

Glu Glu His Pro Gln Asp Leu Glu  Ser Asn Asn Gly Ser  Ser Tyr Ser
        995                 1000                1005

Ser Gln  Thr Pro Ala Arg Leu  Ser His Glu Ala Ser  Leu Tyr Arg
    1010                1015                1020

Val Ile  Ser His Met Pro Ser  Phe His Ala Val Pro  Pro Ser Gln
    1025                1030                1035

Gln Leu  Arg Ser Arg Gln Gly  Ser Leu Gly Thr Ile  Glu Val Glu
    1040                1045                1050

Asp Asn  Thr Leu Asp Asp Asp  Lys Ser Arg Val Thr  Ser Trp Thr
    1055                1060                1065

Asn Ser  Thr Ala Asp Thr Ile  Ser Asn Gln Leu Ser  Ala Asn Trp
    1070                1075                1080

Ser Arg  Gln Tyr Pro Ser Leu  Leu Gln Asp Asp Met  Asp Thr Thr
    1085                1090                1095

Leu Ser  Pro His Asn Gln Thr  Ser Met Tyr Arg Lys  Asn Met Ile
    1100                1105                1110

Asn Thr  Gly Pro Ile Val Asn  Ser Gln Arg Val Tyr  Ser Ala Leu
    1115                1120                1125

Met Lys  Arg Leu Gln Glu Lys  Asn Gly His Gln Asn  Gln Ser Leu
    1130                1135                1140

Gly Glu  Asp His Met Thr Pro  Asp Pro Val Glu Thr  Asn Ser Leu
    1145                1150                1155

Arg Ser  Thr Ser Thr Ile Arg  Arg Gln Thr Arg Gln  Ala Met Tyr
    1160                1165                1170

Ala Gly  Ser Thr His Thr Ile  Arg His Val Gln Tyr  Asp Asp Asp
    1175                1180                1185

Val Phe  Gln Asp Ser Val Glu  Gly Ser Thr Thr Ser  Arg Tyr Ser
    1190                1195                1200
```

```
Ser Glu  Ser Thr Lys Ser Val  Ile Arg Arg His Gln  Ser Ser Asp
    1205                 1210                 1215

Ser Leu  Gln Asp Tyr Gly His  Lys Ser Cys Pro Ser  Pro Gly Ser
    1220                 1225                 1230

Gly Asn  Val Ser Gly Phe Pro  Pro Asn Thr Asn Asp  Val Lys Pro
    1235                 1240                 1245

His Pro  Val Thr Glu Asn Gln  Lys Pro Thr Leu Ser  Gly Arg Ser
    1250                 1255                 1260

Ser Ala  Phe Phe Ala Ser Pro  Thr Cys His Leu Phe  Arg Thr Thr
    1265                 1270                 1275

Ser Pro  Tyr Arg Arg Ala Leu  Gln Glu Ser Met Arg  Ala Ala Gln
    1280                 1285                 1290

Ala Ser  Asn Gln Pro Gln Thr  Pro Gly Thr Lys His  Leu Ser Ser
    1295                 1300                 1305

Leu Ser  Ala Leu Ser Leu Pro  Ile Arg Arg Pro Ser  Thr Glu Glu
    1310                 1315                 1320

Ser Asp  Asp Asp Ala Arg Val  Ala Tyr Ala Glu Ser  Val Tyr Ser
    1325                 1330                 1335

Asn Ser  Ser Glu Glu Asn Ala  Pro Gln Val Asp Glu  Pro Ser Pro
    1340                 1345                 1350

Pro Leu  Arg Ser Thr Glu Glu  Glu Pro Arg Pro Gln  Val His Gly
    1355                 1360                 1365

Asp Ala  Thr Ile Phe Leu Asn  Thr Glu Arg Pro Arg  Leu Pro Pro
    1370                 1375                 1380

Pro Ser  His Thr Arg Asp Ser  Ser Ser Ala Ser Ser  Val Glu Trp
    1385                 1390                 1395

Lys Thr  Trp Leu Ser Ala Asn  Val Ser Lys Leu Glu  Thr Pro Pro
    1400                 1405                 1410

Thr Thr  Leu Lys Pro Asp Leu  Ser Gln Glu Pro Ser  Ser Ala Pro
    1415                 1420                 1425

Gln Thr  Phe Ser His Val Arg  Glu Lys Thr Glu Ile  Asp Ser Asp
    1430                 1435                 1440

Val Asp  Asp Tyr Pro Gln Asp  Ala Pro Gly Gly Gly  Leu Ser Pro
    1445                 1450                 1455
```

```
Lys Leu  Gly Leu Ser Lys Asp  Asn His Ser Pro Ser  Val Leu Thr
    1460                 1465                 1470

Pro Ile  Pro Arg Gly Lys Phe  His Leu Val Asn Pro  Trp His Leu
    1475                 1480                 1485

Gln Ser  Thr Ala Ser Asn Glu  Asn Ser Pro Pro Thr  Ser Gly Val
    1490                 1495                 1500

Arg Ser  Lys Ser Ala Cys Ser  Lys Asp Ala Ser Pro  Val Ala Pro
    1505                 1510                 1515

Lys Gly  His Leu Arg Thr Ile  Pro Ser Val Pro Asn  Val Asn Thr
    1520                 1525                 1530

Cys Ala  Thr Asn Ala Glu Ser  Leu Met Gly Glu Pro  Arg Asn Pro
    1535                 1540                 1545

Ser Leu  Asn Thr Cys Ser Lys  Pro Phe Asp Pro Val  Arg Glu Glu
    1550                 1555                 1560

Ala Arg  Leu Lys Arg Arg Ser  Arg Thr Arg Leu Gly  Ala Asn Asp
    1565                 1570                 1575

Ala Ser  Ala Lys Ser Ser Pro  Gly Phe Thr Thr Ala  Leu Lys Arg
    1580                 1585                 1590

Gln Phe  Gly Val Ser Arg Thr  Gly Ser Pro Gly Val  Trp Lys Ala
    1595                 1600                 1605

Glu Glu  Pro Ser Gly Glu Leu  Gly Ser Glu Ala Asp  Pro Gly Val
    1610                 1615                 1620

Asp Glu  Leu Gly Arg Arg Asp  Phe Asp Ala Gln Ala  Met Gly Ser
    1625                 1630                 1635

Arg Arg  Met Val Asp Leu Phe  Leu Ser Ser Arg Arg  Gln Arg Ile
    1640                 1645                 1650

Ala Gly  Ser Gln Thr Arg Gln  Ser Ser Asp Ser Leu  Ser Ala Ala
    1655                 1660                 1665

Phe Ile
    1670
```

<210> 101
<211> 538
<212> PRT
<213> Hypocrea lixii

<400> 101

```
Met Arg Thr Ala Val Ala Leu Ser Val Ala Ala Val Ala Gln Ala Ser
1               5                  10                  15

Thr Phe Gln Ile Gly Thr Ile His Glu Asn Ser Ala Pro Val Leu Ser
            20                  25                  30

Thr Val Glu Ala Asn Ala Ile Pro Asp Ala Tyr Ile Ile Lys Phe Lys
        35                  40                  45

Asp His Val Gly Glu Ala Gln Ala Glu Lys His His Asp Trp Leu Gln
    50                  55                  60

Ser Val His Ser Ser Gly Glu Gln Glu Arg Leu Glu Leu Arg Lys Arg
65                  70                  75                  80

Ser Ser Ile Phe Gly Ser Asp Asp Val Phe Asp Gly Leu Lys His Thr
                85                  90                  95

Phe Lys Met Asp Gly Phe Lys Gly Tyr Ala Gly His Phe His Glu Ser
            100                 105                 110

Thr Ile Glu Gln Val Arg Asn His Pro Asp Val Glu Tyr Ile Glu Arg
        115                 120                 125

Asp Ser Ile Val His Thr Met Leu Pro Leu Glu Ser Lys Asp Asn Ile
    130                 135                 140

Ile Ile Glu Asp Ser Cys Ser Pro Glu Thr Glu Lys Gln Ala Pro Trp
145                 150                 155                 160

Gly Leu Ala Arg Ile Ser His Arg Asp Thr Leu Asn Phe Gly Ser Phe
                165                 170                 175

Asn Lys Tyr Leu Tyr Thr Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr
            180                 185                 190

Ile Ile Asp Thr Gly Thr Asn Ile Glu His Val Asp Phe Glu Gly Arg
        195                 200                 205

Ala Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Glu Asp Glu Asp Gly
    210                 215                 220

Asn Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys Tyr
225                 230                 235                 240

Gly Val Ala Lys Lys Ala His Val Tyr Ala Val Lys Val Leu Arg Ser
                245                 250                 255

Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val Glu Phe Ala
            260                 265                 270
```

```
Ala Ile Ser His Gln Glu Ala Val Lys Gln Ala Lys Asp Gly Lys Arg
        275                 280                 285

Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys
    290                 295                 300

Thr Ser Ala Leu Asp Ala Ala Val Asn Ala Ala Val Lys Ala Gly Ile
305                 310                 315                 320

His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr
                325                 330                 335

Ser Pro Ala Ala Ala Ser Glu Pro Val Thr Val Gly Ala Ser Ala Leu
            340                 345                 350

Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile
        355                 360                 365

Phe Ala Pro Gly Leu Ser Ile Gln Ser Thr Trp Ile Gly Ser Lys Tyr
    370                 375                 380

Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala
385                 390                 395                 400

Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Thr Asp Ser Glu
                405                 410                 415

Phe Ala Val Ala Pro Ile Thr Pro Asn Lys Leu Lys Lys Asp Ile Ile
            420                 425                 430

Ser Val Ala Thr Val Gly Thr Leu Ser Asp Ile Pro Ser Asp Thr Pro
        435                 440                 445

Asn Leu Leu Ala Trp Asn Gly Ala Gly Cys Ser Asn Tyr Ser Gln Ile
    450                 455                 460

Ile Glu Ala Gly Ser Tyr Thr Ala Lys Pro Lys Ala Asn Lys Ala Lys
465                 470                 475                 480

Leu Pro Ala Thr Ile Glu Glu Leu Glu Glu Ala Ile Glu Gly Asp Phe
                485                 490                 495

Glu Val Val Ser Gly Lys Ile Val Lys Gly Ala Lys Thr Phe Gly Ser
            500                 505                 510

Lys Ala Glu Lys Phe Ala Lys Lys Ile His Asp Leu Val Glu Glu Glu
        515                 520                 525

Ile Glu Glu Phe Ile Ser Glu Leu Ser Glu
    530                 535
```

<210> 102
<211> 495
<212> PRT
<213> Aspergillus fumigatus

<400> 102

```
Met Lys Gly Tyr Leu Ser Leu Ser Ile Leu Pro Leu Leu Val Ala Ala
1               5                   10                  15

Ser Pro Val Val Val Asp Ser Ile His Asn Gly Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ser Met Asn Ala Lys Glu Val Pro Asp Ser Tyr Ile Val Val Phe
        35                  40                  45

Lys Lys His Val Asn Ala Glu Ser Ala Ala Ala His His Ser Trp Val
    50                  55                  60

Gln Asp Ile His Ser Ala Gln Asn Glu Arg Val Glu Leu Arg Lys Arg
65                  70                  75                  80

Ser Leu Phe Gly Phe Gly Glu Glu Ala Tyr Leu Gly Leu Lys Asn Thr
                85                  90                  95

Phe Asp Ile Ala Gly Ser Leu Val Gly Tyr Ser Gly His Phe His Glu
            100                 105                 110

Asp Val Ile Glu Gln Val Arg Lys His Pro Asp Val Glu Tyr Ile Glu
        115                 120                 125

Lys Asp Ser Glu Val His Thr Met Glu Asp Pro Thr Val Glu Lys Ser
    130                 135                 140

Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Ser Leu Ser Phe
145                 150                 155                 160

Gly Thr Phe Asn Lys Tyr Leu Tyr Ala Ser Glu Gly Gly Glu Gly Val
                165                 170                 175

Asp Ala Tyr Thr Ile Asp Thr Gly Ile Asn Val Asp His Val Asp Phe
            180                 185                 190

Glu Gly Arg Ala Gln Trp Gly Lys Thr Ile Pro Thr Asp Asp Glu Asp
        195                 200                 205

Ala Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
    210                 215                 220

Arg Lys Tyr Gly Val Ala Lys Lys Ala Asn Leu Tyr Ala Val Lys Val
225                 230                 235                 240
```

```
Leu Arg Ser Ser Gly Ser Gly Thr Met Ser Asp Val Val Ala Gly Val
                245                 250                 255

Glu Trp Ala Val Lys Ser His Leu Lys Lys Val Lys Asp Ala Lys Asp
            260                 265                 270

Gly Lys Ile Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly
        275                 280                 285

Gly Gly Lys Ser Arg Thr Leu Glu Ala Ala Val Asn Ala Gly Val Glu
    290                 295                 300

Ala Gly Leu His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala
305                 310                 315                 320

Cys Asn Tyr Ser Pro Ala Ala Ala Glu Asn Pro Ile Thr Val Gly Ala
                325                 330                 335

Ser Thr Leu Gln Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys
            340                 345                 350

Thr Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly
        355                 360                 365

Ser Lys His Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
    370                 375                 380

His Ile Ala Gly Leu Leu Ala Tyr Phe Val Ser Leu Gln Pro Ser Lys
385                 390                 395                 400

Asp Ser Ala Phe Ala Val Asp Glu Leu Thr Pro Lys Lys Leu Lys Lys
                405                 410                 415

Asp Ile Ile Ala Ile Ala Thr Gln Gly Ala Leu Thr Asp Ile Pro Ser
            420                 425                 430

Asp Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ser Ser Asn Tyr
        435                 440                 445

Thr Asp Ile Ile Ala Ser Gly Gly Tyr Lys Val Asn Ala Ser Val Lys
    450                 455                 460

Asp Arg Phe Glu Gly Leu Val His Lys Ala Glu Lys Leu Leu Thr Glu
465                 470                 475                 480

Glu Leu Gly Ala Ile Tyr Ser Glu Ile His Asp Ala Ala Val Ala
                485                 490                 495
```

<210> 103
<211> 530
<212> PRT
<213> Nectria haematococca

<400> 103

```
Met Arg Thr Ala Leu Thr Leu Ser Leu Ala Ala Val Ala Asn Ala Ala
1               5                  10                  15

Ser Phe Ser Val Gly Thr Ile His Asp Arg Ser Ala Pro Ile Leu Ser
            20                  25                  30

Ser Ile Glu Ala Glu Thr Ile Pro Asp Ser Tyr Ile Ile Lys Phe Lys
        35                  40                  45

Asp His Val Asp Glu Thr Ala Ala Ser Asp His His Thr Trp Ile Gln
    50                  55                  60

Asn Ile His Ser His Gly Glu Gln Glu Arg Leu Glu Leu Arg Lys Arg
65                  70                  75                  80

Ser Thr Pro Phe Thr Asp Lys Thr Phe Ala Gly Leu Lys His Thr Phe
                85                  90                  95

Asn Ile Gly Lys Gly Phe Lys Gly Tyr Ala Gly His Phe Asp Glu Ser
            100                 105                 110

Val Ile Glu Gln Val Arg Asn His Pro Asp Ile Glu Phe Ile Glu Arg
        115                 120                 125

Asp Thr Leu Val His Thr Met Ile Pro Val Gln Asn Gln Asp Ala Val
    130                 135                 140

Ser Glu Tyr Lys Cys Asp Asp Gly Lys Thr Glu Thr Ser Ala Pro Trp
145                 150                 155                 160

Gly Leu Ala Arg Ile Ser His Arg Asp Thr Leu Asn Phe Gly Thr Phe
                165                 170                 175

Asn Lys Tyr Leu Tyr Ser Ala Asp Gly Gly Glu Gly Val Asp Ala Tyr
            180                 185                 190

Ile Val Asp Thr Gly Thr Asn Ile Asp His Val Asp Phe Glu Gly Arg
        195                 200                 205

Ala His Trp Gly Lys Thr Val Pro Ala Gly Asp Ala Asp Glu Asp Gly
    210                 215                 220

Asn Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Arg Tyr
225                 230                 235                 240

Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val Leu Arg Ser
                245                 250                 255

Asn Gly Ser Gly Ser Met Ser Asp Val Val Lys Gly Val Glu Phe Ala
```

260 265 270

Ala Thr Ser His Leu Glu Gln Ala Gln Lys Ala Lys Asp Gly Lys Arg
275 280 285

Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys
290 295 300

Thr Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Arg Thr Gly Val
305 310 315 320

His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr
325 330 335

Ser Pro Ala Ala Ala Ala Glu Pro Val Thr Val Gly Ala Ser Ala Leu
340 345 350

Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile
355 360 365

Phe Ala Pro Gly Leu Asn Ile Gln Ser Thr Trp Ile Gly Ser Lys Tyr
370 375 380

Ala Ile Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala
385 390 395 400

Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Glu Asp Ser Glu
405 410 415

Tyr Ala Met Ala Ser Ile Thr Pro Lys Lys Leu Lys Glu Asn Leu Ile
420 425 430

Ser Ile Ala Thr Glu Asn Ala Leu Ser Asp Ile Pro Ser Asp Thr Pro
435 440 445

Asn Leu Leu Ala Trp Asn Gly Gly Gly Cys Ser Asp Tyr Lys Lys Ile
450 455 460

Val Glu Ala Gly Ser Tyr Gln Val Asn Lys Ala Ser Pro Ser Ser Pro
465 470 475 480

Ala Lys Gln Ile Lys Asp Ala Val Glu Gln Glu Ile Gly Val Val Ser
485 490 495

Gly Lys Val Lys Glu Phe Gly Ser Lys Ala Glu Lys Phe Ser Lys Lys
500 505 510

Ile His Asn Leu Val Asp Glu Glu Leu Glu Gln Phe Leu Lys Glu Ile
515 520 525

Asn Met

530

<210> 104
<211> 533
<212> PRT
<213> Gibberella zeae

<400> 104

Met Lys Ser Ala Leu Thr Leu Ser Met Ala Ala Val Ala Ser Ala Ala
1 5 10 15

Ser Phe Ser Val Gly Thr Val His Asp Lys Ala Ala Pro Ile Leu Ser
20 25 30

Ser Val Asp Ala Glu Thr Ile Pro Asp Ser Tyr Ile Ile Lys Phe Lys
35 40 45

Asp His Val Asp Glu His Ala Ala Ser Asn His His Met Trp Val Gln
50 55 60

Asp Thr His Thr Gln Gly Glu Ser Glu Arg Met Glu Leu Arg Lys Arg
65 70 75 80

Ser Ile Pro Phe Thr Asp Lys Thr Phe Ser Gly Leu Lys His Thr Phe
85 90 95

Asp Ile Gly Glu Ala Phe Lys Gly Tyr Ala Gly His Phe Asp Glu Ser
100 105 110

Met Ile Glu Lys Val Arg Asn His Pro Asp Val Glu Phe Ile Glu Arg
115 120 125

Asp Thr Leu Val His Thr Met Val Pro Ile Thr Asn Asn Asp Met Val
130 135 140

Thr Glu Asp Lys Cys Asp Gly Glu Thr Glu Arg Ser Ala Pro Trp Gly
145 150 155 160

Leu Ala Arg Ile Ser His Arg Asn Thr Leu Asn Phe Gly Ser Phe Asn
165 170 175

Lys Tyr Leu Tyr Ser Ser Asp Gly Gly Glu Gly Val Asp Ala Tyr Ile
180 185 190

Val Asp Thr Gly Thr Asn Ile Lys His Val Asp Phe Glu Gly Arg Ala
195 200 205

His Trp Gly Lys Thr Ile Pro Ser Gly Asp Ala Asp Glu Asp Gly Asn
210 215 220

Gly His Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys Tyr Gly
225 230 235 240

```
Val Ala Lys Lys Ala Ser Val Tyr Ala Val Lys Val Leu Arg Ser Asn
                245                 250                 255

Gly Ser Gly Ser Met Ser Asp Val Val Lys Gly Val Glu Phe Ala Ala
            260                 265                 270

Thr Ser His Leu Glu Gln Lys Lys Lys Ala Lys Asp Gly Lys Arg Lys
        275                 280                 285

Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr
    290                 295                 300

Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Arg Thr Gly Ile His
305                 310                 315                 320

Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser
                325                 330                 335

Pro Ala Ala Ala Ser Glu Pro Val Thr Val Gly Ala Ser Ala Ile Asp
            340                 345                 350

Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe
        355                 360                 365

Ala Pro Gly Leu Asn Ile Val Ser Thr Trp Ile Gly Thr Asp Lys Ala
    370                 375                 380

Ile Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly
385                 390                 395                 400

Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Glu Asp Ser Glu Tyr
                405                 410                 415

Ala Leu Ala Ser Ile Thr Pro Lys Lys Leu Lys Glu Asn Leu Ile Ser
            420                 425                 430

Val Ala Thr Glu Asn Ala Leu Ser Asp Ile Pro Ser Asp Thr Pro Asn
        435                 440                 445

Leu Leu Ala Trp Asn Gly Gly Gly Cys Ser Asp Tyr Lys Lys Ile Val
    450                 455                 460

Glu Ala Gly Ser Tyr Lys Val Asn Lys Ala Ala Pro Ser Ser Arg Val
465                 470                 475                 480

Glu Asp Ile Lys His Ala Val Glu Gln Glu Val Glu Val Val Ser Gly
                485                 490                 495

Lys Leu Thr Thr Gly Ala Lys Gln Leu Gly Ser Lys Ala Glu Lys Phe
            500                 505                 510
```

```
Ser Lys Lys Ile His Glu Leu Val Asp Glu Glu Leu Glu Gln Phe Ile
        515                 520                 525


Lys Glu Leu Asn Leu
    530


<210>  105
<211>  532
<212>  PRT
<213>  Isaria farinosa

<400>  105

Met Lys Ser Phe Val Ala Ala Leu Ser Val Ala Ala Ile Ala Gln Ala
1               5                   10                  15


Ser Ser Phe Lys Ile Gly Thr Ile His His Asp Ser Ala Pro Ile Leu
            20                  25                  30


Asp Ala Thr His Ala Asn Thr Ile Pro Gly Ala Tyr Ile Ile Lys Phe
        35                  40                  45


Lys Glu His Val Asp Glu Pro Lys Ala Lys Thr His His Ala Trp Val
    50                  55                  60


Thr Asp Ile His Gly Asp Gly Gln Gln Gln Arg Ile Glu Leu Arg Lys
65                  70                  75                  80


Arg Gly Leu Phe Asp Ser Val Glu Asp Val Phe Asp Gly Val Lys His
                85                  90                  95


Thr Phe Asp Leu Gly Ala Gly Phe Arg Gly Tyr Ala Gly His Phe Asp
            100                 105                 110


Asp Ala Val Ile Glu Gln Ile Arg Asn His Pro Asp Val Glu Ala Ile
        115                 120                 125


Glu Arg Asp Ser Ile Val His Thr Met Val Pro Val Ser Ala Lys Asp
    130                 135                 140


Thr Val Thr Glu Asp Thr Cys Asn Pro Glu Thr Glu Lys Gln Ala Pro
145                 150                 155                 160


Trp Gly Leu Ala Arg Ile Ser His Arg Lys Thr Leu Gly Phe Gly Thr
                165                 170                 175


Phe Asn Lys Tyr Leu Tyr Ala Glu Asp Gly Gly Glu Gly Val Asp Ala
            180                 185                 190


Tyr Val Ile Asp Thr Gly Thr Asn Ile Ala His Val Asp Phe Glu Gly
        195                 200                 205
```

```
Arg Ala Lys Trp Gly Tyr Thr Ala Pro Asp Gly Asp Ala Asp Glu Asp
    210                 215                 220

Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys
225                 230                 235                 240

Tyr Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val Leu Arg
                245                 250                 255

Ser Asn Gly Ser Gly Thr Met Ser Asp Val Ile Lys Gly Val Asp Trp
            260                 265                 270

Ala Ala Lys Ser His Glu Gln Gln Val Lys Asp Ala Lys Ala Gly Lys
        275                 280                 285

Arg Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly
    290                 295                 300

Lys Thr Thr Leu Leu Asp Ile Ala Val Asp Ala Ala Val Ala Lys Gly
305                 310                 315                 320

Leu His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn
                325                 330                 335

Tyr Ser Pro Ala Ala Ala Lys Asn Ala Val Thr Val Gly Ala Ser Thr
            340                 345                 350

Ile Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp
        355                 360                 365

Ile Phe Ala Pro Gly Leu Asn Ile Gln Ser Thr Trp Ile Gly Ser Lys
    370                 375                 380

Tyr Ala Ile Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile
385                 390                 395                 400

Cys Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Ser Asp Ser
                405                 410                 415

Glu Tyr Ala Val Ala Ser Ile Thr Pro Ala Glu Leu Lys Asp Asn Leu
            420                 425                 430

Ile Thr Ile Gly Thr Lys Asn Thr Leu Ser Asp Ile Asp Ser Asp Thr
        435                 440                 445

Pro Asn Val Leu Ala Trp Asn Gly Ala Gly Cys Ser Asp Tyr Lys Lys
    450                 455                 460

Ile Val Glu Ala Gly Ala Tyr Asp Ala Lys Arg Thr Ser Ser Lys Ser
465                 470                 475                 480
```

```
Glu Asn Ile His Thr Lys Ile Gln His Glu Phe Glu Ile Val Ser Gly
                485                 490                 495

Glu Ile Thr Lys Ser Ala Lys Thr Phe Gly Ser Lys Ala Glu Lys Phe
            500                 505                 510

Ala Lys Lys Ile Gln His Ile Val Asp Ala Glu Val Glu Asp Phe Leu
        515                 520                 525

Ser His Met Glu
    530
```

<210> 106
<211> 537
<212> PRT
<213> Glomerella graminicola

<400> 106

```
Met Arg Gly Phe Ile Gly Ala Val Ala Gly Leu Ala Ala Val Ala Ser
1               5                   10                  15

Ala Thr Pro Ser Leu Ser Ile Glu Thr Ile His Asp Gly Ala Ala Pro
            20                  25                  30

Val Ile Ser Ser Thr Asn Ala Glu Ala Val Pro Asn Ser Tyr Ile Ile
        35                  40                  45

Lys Phe Lys Lys His Val Ser Asp Thr Asp Ala Glu Asp His His Asn
    50                  55                  60

Trp Val Gln Gln Ile His Ser Ser Ser Gln Asp Glu Arg Leu Glu Leu
65                  70                  75                  80

Arg Lys Arg Gly Gln Glu Pro Leu Val Asp Asn Val Phe His Gly Leu
                85                  90                  95

Lys His Thr Tyr Lys Ile Gly Asn Asp Phe Leu Gly Tyr Ala Gly His
            100                 105                 110

Phe Asp Glu Ala Thr Ile Glu Lys Ile Arg Arg His Ser Asp Val Glu
        115                 120                 125

Phe Ile Glu Val Asp Ser Val Val His Thr Gln Val Pro Val Lys Ser
    130                 135                 140

Gln Gly Ala Glu Ala Glu Asp Thr Cys Asp Gly Glu Leu Glu Lys Leu
145                 150                 155                 160

Ala Pro Trp Gly Leu Ala Arg Val Ser His Arg Lys Ser Leu Gly Phe
                165                 170                 175
```

```
Gly Thr Tyr Asp Lys Tyr Leu Tyr Ala Glu Asp Ala Gly Glu Gly Val
            180                 185                 190

Asp Ala Tyr Val Ile Asp Thr Gly Thr Asn Val Asp His Val Asp Phe
        195                 200                 205

Glu Gly Arg Ala Lys Trp Gly Lys Thr Ile Pro Ser Gly Asp Gln Asp
    210                 215                 220

Val Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
225                 230                 235                 240

Lys Lys Tyr Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val
                245                 250                 255

Leu Arg Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val
            260                 265                 270

Glu Trp Ala Ala Thr Ser His Ile Glu Gln Val Lys Ala Ala Lys Asp
        275                 280                 285

Gly Lys Arg Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly
    290                 295                 300

Gly Gly Lys Thr Gln Ala Leu Asp Ala Val Val Asn Ala Ala Val Asp
305                 310                 315                 320

Ala Gly Ile His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala
                325                 330                 335

Cys Asn Tyr Ser Pro Ala Ala Ala Glu Lys Ala Val Thr Val Gly Ala
            340                 345                 350

Thr Glu Leu Gly Asp Arg Arg Ser Tyr Phe Ser Asn Tyr Gly Lys Cys
        355                 360                 365

Thr Asp Ile Phe Ala Pro Gly Thr Asn Ile Lys Ser Thr Trp Ile Gly
    370                 375                 380

Ser Lys Tyr Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
385                 390                 395                 400

His Ile Cys Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ser Thr
                405                 410                 415

Asp Ser Glu Tyr Ser Val Ala Pro Ile Thr Pro Gln Lys Leu Lys Lys
            420                 425                 430

Ala Leu Ile Ser Val Gly Thr Val Gly Ala Leu Ala Asp Ile Pro Arg
        435                 440                 445
```

```
Asp Thr Pro Asn Val Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Tyr
    450                 455                 460

Ser Ala Ile Ile Glu Ala Gly Ser Tyr Thr Val Lys Gln Glu Thr Lys
465                 470                 475                 480

Glu Ala Thr Ile Asp Asp Leu Glu Lys Ala Ile Glu Glu Asp Phe Glu
                485                 490                 495

Val Leu Ser Gly Lys Val Val Lys Gly Ala Lys Asn Ile Gly Thr Lys
            500                 505                 510

Ala Glu Lys Leu Ala Lys Lys Ile His Asn Leu Val Asp Glu Glu Leu
        515                 520                 525

Lys Glu Phe Leu Arg Glu Thr Ser Leu
    530                 535

<210>  107
<211>  531
<212>  PRT
<213>  Epichloe festucae

<400>  107

Met Lys Thr Ile Leu Ala Leu Ser Val Ala Ala Val Ala Gln Ala Ala
1               5                   10                  15

Phe Ser Thr Glu Thr Ile His Lys Gly Ser Ala Pro Val Leu Ser Ser
            20                  25                  30

Ile His Ala Asp Val Val Pro Asp Ser Tyr Ile Ile Lys Phe Lys Asp
        35                  40                  45

His Val Asp Glu Ala Lys Ala Asn Glu His His Ala Trp Val Lys Asp
    50                  55                  60

Ile His Thr Gly Gly Glu Glu Asp Arg Phe Glu Leu Arg Lys Arg Gly
65                  70                  75                  80

Leu Gly Ser Ser Ile Val Asp Ala Phe Ser Gly Thr Lys His Thr Phe
                85                  90                  95

Asn Phe Asp Gly Phe Lys Gly Tyr Ser Gly His Phe His Glu Ser Val
            100                 105                 110

Ile Glu Lys Val Arg Asn Asn Pro Asp Val Glu Phe Ile Glu Lys Asp
        115                 120                 125

Thr Val Val His Thr Met Leu Pro Leu Thr Ser Glu His Ser Val Gln
    130                 135                 140

Glu Asp Lys Cys Asp Pro Gly Glu Thr Glu Lys Gln Ala Pro Trp Gly
```

```
145                 150                 155                 160

Leu Ala Arg Leu Ser His Arg Asp Ser Leu Arg Phe Ser Thr Tyr Asn
                165                 170                 175

Lys Tyr Leu Tyr Ala Thr Glu Gly Gly Glu Gly Val Asp Ala Tyr Val
            180                 185                 190

Ile Asp Thr Gly Thr Asn Val Asp His Val Asp Phe Glu Gly Arg Ala
        195                 200                 205

Lys Trp Gly Lys Thr Ile Pro Ser Gly Asp Ala Asp Glu Asp Gly Asn
    210                 215                 220

Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly
225                 230                 235                 240

Val Ala Lys Lys Ala His Val Tyr Ala Val Lys Val Leu Arg Ser Asn
                245                 250                 255

Gly Ser Gly Ser Met Ser Asp Val Val Lys Gly Val Glu Phe Ala Ala
            260                 265                 270

Asn Ser His Thr Glu Gln Val Lys Ala Ala Lys Asp Gly Lys Arg Lys
        275                 280                 285

Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr
    290                 295                 300

Ser Ala Leu Asp Ala Ala Val Asn Ala Ala Val Lys Val Gly Ile His
305                 310                 315                 320

Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asp Tyr Ser
                325                 330                 335

Pro Ala Ala Ala Glu His Pro Val Thr Val Gly Ala Ser Ala Phe Asp
            340                 345                 350

Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe
        355                 360                 365

Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala
    370                 375                 380

Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Cys Gly
385                 390                 395                 400

Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Lys Asp Ser Glu Tyr
                405                 410                 415

Ser Val Ala Ala Met Thr Pro Lys Asp Leu Lys Asp Ala Leu Ile Glu
```

420 425 430

Val Ser Thr Glu Gly Val Leu Ser Asp Ile Pro Ser Asp Thr Pro Asn
435 440 445

Lys Leu Ala Trp Asn Gly Gly Gly Cys Asn Asn Tyr Ser Lys Ile Val
450 455 460

Ala Ala Gly Gly Tyr Lys Ala Lys Ser Glu Ala Ser Glu Leu Lys Lys
465 470 475 480

Ile Glu Lys Val Ala Met Asp Glu Ala Lys Glu Ile Ser Gly Lys Val
485 490 495

Val Lys Gly Val Lys His Leu Gly Glu Lys Thr Glu Lys Phe Val Glu
500 505 510

Lys Val His Ser Val Val Asp Lys Glu Ile Glu His Phe Ile Ser Glu
515 520 525

Ile Ser Ser
530

<210> 108
<211> 533
<212> PRT
<213> Metarhizium acridum

<400> 108

Met His Thr Leu Val Ala Ala Val Ala Leu Ser Val Val Gly Val Ala
1 5 10 15

Gln Ala Gly Phe Ser Ile Glu Thr Ile His Lys Glu Ser Ala Pro Ile
20 25 30

Leu Ser Ser Val Asp Ala Glu Val Val Pro Asp Ser Tyr Ile Ile Lys
35 40 45

Phe Lys Asp His Val Asn Glu Ala Ala Ala Asn Asp His Arg Ser Trp
50 55 60

Ile Gln Ser Ile His Lys Asp Gly Glu Glu Glu Arg Leu Glu Leu Arg
65 70 75 80

Lys Arg Ser Leu Gly Ser Ser Pro Val Glu Ala Phe Ala Gly Leu Lys
85 90 95

His Thr Tyr Asn Ile Ala Asn Gly Phe Lys Gly Tyr Ser Gly His Phe
100 105 110

His Glu Ser Val Ile Glu Lys Val Arg Asn His Arg Asp Val Glu Phe
115 120 125

```
Val Glu Lys Asp Thr Ile Ala Arg Ile Leu Arg Pro Val Ile Ser Asp
    130                 135                 140

Glu Ser Ala Gln Glu Asp Cys Thr Pro Glu Thr Glu Arg Gln Ala Pro
145                 150                 155                 160

Trp Gly Leu Ala Arg Val Ser His Arg Lys Gly Leu Ser Phe Gly Thr
                165                 170                 175

Tyr Asn Lys Tyr Leu Tyr Ala Ala Asp Gly Gly Glu Gly Val Asp Ala
            180                 185                 190

Tyr Val Ile Asp Thr Gly Thr Asn Thr Glu His Val Asp Phe Glu Gly
        195                 200                 205

Arg Ala Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Ala Asp Glu Asp
    210                 215                 220

Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys
225                 230                 235                 240

Tyr Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val Leu Arg
                245                 250                 255

Ser Asn Gly Ser Gly Thr Met Ala Asp Val Val Lys Gly Val Glu Phe
            260                 265                 270

Ala Ala Thr Asn His Val Glu Gln Val Leu Leu Ala Lys Asp Gly Lys
        275                 280                 285

Arg Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly
    290                 295                 300

Lys Thr Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Lys Ala Gly
305                 310                 315                 320

Ile His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn
                325                 330                 335

Tyr Ser Pro Ala Ala Ala Glu Leu Pro Val Thr Val Gly Ala Ser Ala
            340                 345                 350

Phe Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp
        355                 360                 365

Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly Ser Lys
    370                 375                 380

Thr Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile
385                 390                 395                 400
```

```
Cys Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Gly Asp Ser
                405                 410                 415

Glu Phe Ser Val Ala Pro Ile Thr Pro Lys Gln Leu Lys Asp Thr Leu
            420                 425                 430

Ile Glu Ile Ser Thr Gln Gly Val Leu Thr Asp Ile Pro Lys Asp Thr
        435                 440                 445

Pro Asn Lys Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Tyr Ser Lys
    450                 455                 460

Ile Val Ala Ala Gly Gly Trp Thr Gly Lys Ser Lys Thr Ser Glu Thr
465                 470                 475                 480

Lys Pro Val Glu Asn Ala Val Lys Glu Glu Met Lys Val Leu Ser Asn
                485                 490                 495

Lys Val Ser Glu Gly Val Lys Asp Leu Gly Asp Lys Thr Glu Lys Phe
            500                 505                 510

Val Ala Lys Ile His Asp Val Val Asp Lys Glu Ile Glu His Phe Ile
        515                 520                 525

Ser Glu Ile Ser Leu
    530
```

<210> 109
<211> 535
<212> PRT
<213> Acremonium sp.

<400> 109

```
Met Arg Ala Val Ile Ala Leu Ser Phe Ala Ala Tyr Ala Ser Ala Ala
1               5                   10                  15

Pro Arg Val Ser Phe Glu Thr Ile His Gly Asp Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ala Ser Asn Ala Glu Ile Ile Pro Asn Ser Tyr Ile Ile Lys Phe
        35                  40                  45

Lys Lys His Val Thr Asp Asp Ser Ala Ser Ala His His Ser Trp Ile
    50                  55                  60

Gln Glu Ile His Thr Ser Arg Glu Ser Glu Arg Ala Asp Leu Lys Lys
65                  70                  75                  80

Arg Gly Gln Ile Pro Leu Val Asp Asp Val Phe Arg Gly Leu Lys His
                85                  90                  95
```

```
Thr Tyr Lys Ile Gly Gln Glu Phe Leu Gly Tyr Ser Gly His Phe Asp
            100                 105                 110

Asp Glu Val Ile Glu Gln Val Arg Arg His Pro Asp Val Glu Tyr Ile
        115                 120                 125

Glu Arg Asp Ser Ile Val His Thr Met Arg Val Ala Glu Asn Ala Gln
    130                 135                 140

Cys Asp Ser Glu Leu Glu Lys Ala Ala Pro Trp Gly Leu Ala Arg Ile
145                 150                 155                 160

Ser His Arg Asn Thr Leu Ser Phe Ala Thr Phe Asn Lys Tyr Leu Phe
                165                 170                 175

Ala Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly
            180                 185                 190

Thr Asn Ile Glu His Val Asp Phe Glu Gly Arg Ala Lys Trp Gly Lys
        195                 200                 205

Thr Ile Pro Ser Gly Asp Ala Asp Val Asp Gly Asn Gly His Gly Thr
    210                 215                 220

His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys
225                 230                 235                 240

Ala Asn Val Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr
                245                 250                 255

Met Ala Asp Val Val Ala Gly Val Glu Trp Ala Ala Lys Ala His Leu
            260                 265                 270

Glu Gln Val Lys Ala Ala Lys Asp Gly Lys Arg Lys Gly Phe Lys Gly
        275                 280                 285

Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Lys Ala Leu Asp
    290                 295                 300

Asp Thr Val Asn Ala Ala Val Ser Val Gly Ile His Phe Ala Val Ala
305                 310                 315                 320

Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala Ala
                325                 330                 335

Glu Lys Ala Val Thr Val Gly Ala Ser Ala Ile Asp Asp Ser Arg Ala
            340                 345                 350

Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly Leu
        355                 360                 365
```

```
Ser Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala Thr Asn Thr Ile
    370                 375                 380

Ser Gly Thr Ser Met Ala Ser Pro His Ile Cys Gly Leu Leu Ala Tyr
385                 390                 395                 400

Tyr Leu Ser Leu Gln Pro Ala Ser Asp Ser Glu Tyr Ser Val Ala Pro
                405                 410                 415

Ile Thr Pro Glu Lys Leu Lys Ser Asn Leu Leu Gln Ile Ala Thr Gln
            420                 425                 430

Asp Ala Leu Thr Asp Met Pro Lys Gly Thr Pro Asn Leu Leu Ala Trp
        435                 440                 445

Asn Gly Gly Gly Cys Asn Asn Tyr Thr Ala Ile Val Glu Ala Gly Gly
    450                 455                 460

Tyr Lys Val Glu Arg Gln Ser Lys Thr Asp Lys Ile Asp Ile Gly Lys
465                 470                 475                 480

Ser Val Ser Glu Leu Glu Lys Leu Ile Glu His Asp Phe Glu Val Val
                485                 490                 495

Ser Gly Lys Val Val Lys Gly Val Ser Ser Phe Ala Gly Lys Ala Glu
            500                 505                 510

Glu Phe Ser Lys Lys Ile His Gln Leu Val Asp Glu Glu Leu Lys Asp
        515                 520                 525

Phe Leu Glu Asp Ile Ala Ala
    530                 535


<210>  110
<211>  503
<212>  PRT
<213>  Ophiostoma piliferum

<400>  110

Met Ser Leu Ala Ser Val Ala Val Ala Ala Pro Ser Phe Thr Thr Gly
1               5                   10                  15

Thr Val His Gly Asp Ala Ala Pro Ile Leu Ala Ser Val Asn Thr Glu
            20                  25                  30

Ala Ile Pro Asn Ser Tyr Ile Val Lys Phe Lys Asn His Val Asn Glu
        35                  40                  45

Lys Asp Val Ser Thr His His Ser Trp Val Gln Ser Leu His Asp Gln
    50                  55                  60
```

```
Gly Glu Glu Lys Arg Leu Glu Leu Arg Arg Arg Gly Met Asp Phe Gly
65                  70                  75                  80

Ile Leu Ser Gly Val Lys His Thr Phe Lys Ile Gly Glu Thr Phe Lys
                85                  90                  95

Gly Tyr Ala Gly Gln Phe Asp Asp Glu Leu Ile Glu Gln Leu Arg Arg
            100                 105                 110

His Pro Asp Val Glu Tyr Ile Glu Lys Asp Thr Val Val His Thr Met
        115                 120                 125

Gln Pro Val Ser Ser Glu Glu Thr Cys Ser Ser Glu Val Glu Lys Asn
    130                 135                 140

Ser Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Thr Leu Ser Phe
145                 150                 155                 160

Gly Thr Phe Asn Lys Tyr Leu Tyr Ser Ser Glu Gly Gly Glu Gly Val
                165                 170                 175

Asp Val Tyr Val Ile Asp Thr Gly Cys Asn Val Asp His Val Asp Phe
            180                 185                 190

Glu Gly Arg Ala Thr Trp Gly Lys Thr Ile Pro Ser Gly Val Ser Asp
        195                 200                 205

Leu Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
    210                 215                 220

Lys Lys Tyr Gly Val Ala Lys Lys Ala Arg Val Tyr Ala Val Lys Val
225                 230                 235                 240

Leu Arg Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val
                245                 250                 255

Glu Trp Ala Ala Asn Ala His Leu Glu Ala Leu Lys Gln Ala Lys Ala
            260                 265                 270

Gly Lys Arg Lys Gly Phe Lys Gly Ser Ala Ala Asn Met Ser Leu Gly
        275                 280                 285

Gly Gly Lys Thr Val Ala Leu Glu Glu Val Val Asn Ala Ala Val Glu
    290                 295                 300

Ala Gly Val His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala
305                 310                 315                 320

Cys Asn Tyr Ser Pro Ala Ala Ala Gln Asn Ala Val Thr Val Gly Ala
                325                 330                 335
```

```
Ser Ala Leu Asp Asp Ser Arg Ala Tyr Phe Ser Asn Trp Gly Lys Cys
            340                 345                 350

Thr Asp Ile Phe Ala Pro Gly Leu Ser Ile Gln Ser Thr Trp Ile Gly
        355                 360                 365

Ser Lys His Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
    370                 375                 380

His Ile Ala Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Ala
385                 390                 395                 400

Asp Ser Glu Tyr Ala Val Ala Ala Ile Thr Pro Ala Glu Leu Lys Ala
                405                 410                 415

Asn Ile Ile Ser Ile Ala Thr Glu Gly Ala Leu Ser Asp Leu Pro Lys
            420                 425                 430

Asp Thr Pro Asn Val Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Tyr
        435                 440                 445

Ser Ser Ile Leu Glu Gln Gly Ser Tyr Lys Val Lys Ser Ser Lys Asn
    450                 455                 460

Ser Lys Leu Asp Ile Glu Ala Leu Glu Lys Ala Ile Glu Asn Asp Leu
465                 470                 475                 480

Asn Ile Val Ser Gly Gln Ile Val Lys Gly Ala Glu Ser Leu Ala Ser
                485                 490                 495

Lys Ala Gln Lys Phe Ser Thr
            500


<210>  111
<211>  532
<212>  PRT
<213>  Neurospora tetrasperma

<400>  111

Met Arg Gly Leu Leu Ala Leu Ser Leu Ala Ala Cys Ala Ala Ala Ala
1               5                   10                  15

Pro Ala Val Ser His Glu Ser Ile His Gly Asp Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ser Ser Asn Ala Glu Val Val Pro Asn Ser Tyr Ile Ile Lys Phe
        35                  40                  45

Lys Lys His Val Thr Asp Asp Lys Ile Ser Asp His His Thr Trp Ile
    50                  55                  60

Gln Lys Ile His Ser Ser Arg Met Asp Leu Lys Lys Arg Ser Gln Ile
```

65 70 75 80

Pro Met Val Asp Asp Val Phe Arg Gly Leu Lys His Thr Tyr Lys Ile
85 90 95

Gly Gln Asp Phe Met Gly Tyr Ser Gly His Phe Asp Glu Asp Thr Ile
100 105 110

Glu Ala Val Arg Arg His Pro Asp Val Glu Tyr Ile Glu Arg Asp Ser
115 120 125

Ile Val His Thr Met Ser Val Ser Glu Asp Val Asp Ser Glu Gly Lys
130 135 140

Cys Asp Ser Asp Ile Glu Lys Ser Ala Pro Trp Gly Leu Ala Arg Ile
145 150 155 160

Ser His Arg Asp Thr Leu Ser Phe Ala Thr Phe Asn Lys Tyr Leu Tyr
165 170 175

Ala Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly
180 185 190

Thr Asn Val Glu His Val Asp Phe Glu Gly Arg Ala Lys Trp Gly Lys
195 200 205

Thr Ile Pro Asn Gly Asp Ala Asp Val Asp Gly Asn Gly His Gly Thr
210 215 220

His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys
225 230 235 240

Ala Ser Val Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr
245 250 255

Met Ala Asp Val Val Ala Gly Val Glu Trp Ala Ala Lys Ser His Leu
260 265 270

Glu Gln Val Lys Ala Ala Lys Asp Gly Lys Arg Lys Gly Phe Lys Gly
275 280 285

Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Gln Ala Leu Asp
290 295 300

Asp Thr Val Asn Ala Ala Val Ser Val Gly Ile His Phe Ala Val Ala
305 310 315 320

Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala Ala
325 330 335

Ala Lys Ala Val Thr Val Gly Ala Ser Ala Ile Asp Asp Ser Arg Ala

```
            340                 345                 350

Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly Leu
        355                 360                 365

Ser Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala Thr Asn Thr Ile
    370                 375                 380

Ser Gly Thr Ser Met Ala Ser Pro His Ile Cys Gly Leu Leu Ala Tyr
385                 390                 395                 400

Tyr Leu Ser Leu Gln Pro Ser Ser Asp Ser Glu Tyr Ser Leu Ala Thr
                405                 410                 415

Ile Ser Pro Glu Lys Met Lys Ala Asn Leu Leu Lys Ile Ala Thr Val
            420                 425                 430

Gly Ala Leu Ser Asp Met Pro Arg Asp Thr Pro Asn Leu Leu Ala Trp
        435                 440                 445

Asn Gly Gly Gly Cys Ser Asn Tyr Ser Ala Ile Val Asp Ala Gly Ser
    450                 455                 460

Tyr Lys Ala Thr Pro Lys Ala Gln Ser Asp Lys Ile Ser Ser Val Ser
465                 470                 475                 480

Glu Leu Glu Lys Ala Ile Glu His Asp Tyr Glu Val Ile Ser Gly Lys
                485                 490                 495

Val Val Lys Gly Val Ser Ser Leu Ser Asp Lys Ala Glu Lys Leu Ser
            500                 505                 510

Glu Lys Ile His Asp Met Val Glu Glu Glu Leu Lys Glu Phe Leu Glu
        515                 520                 525

Glu Ile Ala His
    530


<210>  112
<211>  532
<212>  PRT
<213>  Chaetomium thermophilum

<400>  112

Met Arg Gly Leu Phe Phe Leu Ser Leu Ala Ala Tyr Ala Ala Ala Ala
1               5                   10                  15

Pro Arg Ala Lys Val Gly Thr Ile Asp Asn Asp Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ser Ser Asn Ala Glu Ile Val Pro Asn Ala Tyr Ile Ile Lys Phe
        35                  40                  45
```

```
Lys Lys His Val Thr Pro Glu Val Ala Ala Ala His His Thr Trp Ile
    50                  55                  60

Gln Glu Ile His Ser Ala Ala Glu Thr Arg Arg Leu Asp Leu Lys Lys
65                  70                  75                  80

Arg Ser Gln Phe Pro Phe Val Asp Gln Val Phe His Gly Leu Lys His
                85                  90                  95

Thr Tyr Gln Ile Gly Gln Glu Phe Leu Gly Tyr Ala Gly His Phe Asp
            100                 105                 110

Asp Glu Thr Ile Glu Gln Val Arg Arg His Pro Asp Val Glu Tyr Ile
        115                 120                 125

Glu Arg Asp Thr Ile Val His Thr Met Arg Phe Glu Glu Ala Lys Glu
    130                 135                 140

Glu Cys His Gly Glu Ile Glu Lys Ser Ala Pro Trp Gly Leu Ala Arg
145                 150                 155                 160

Ile Ser His Arg Asp Thr Leu Thr Phe Ser Thr Phe Asn Lys Tyr Leu
                165                 170                 175

Tyr Ala Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr
            180                 185                 190

Gly Thr Asn Ile Glu His Val Asp Phe Glu Gly Arg Ala Lys Trp Gly
        195                 200                 205

Lys Thr Ile Pro Ala Gly Asp Ala Asp Val Asp Gly Asn Gly His Gly
    210                 215                 220

Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys
225                 230                 235                 240

Lys Ala Asn Ile Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly
                245                 250                 255

Thr Met Ser Asp Val Val Ala Gly Val Glu Trp Val Ala Thr Gln His
            260                 265                 270

Leu Glu Asn Val Lys Leu Ala Lys Ala Gly Lys Arg Lys Gly Phe Lys
        275                 280                 285

Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Arg Thr Leu
    290                 295                 300

Asp Asp Thr Val Asn Ala Ala Val Ala Val Gly Val His Phe Ala Val
305                 310                 315                 320
```

```
Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala
                325                 330                 335

Ala Glu Ser Ala Ile Thr Val Gly Ala Ser Ala Ile Asp Asp Ser Arg
            340                 345                 350

Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly
        355                 360                 365

Leu Ser Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala Thr Asn Thr
    370                 375                 380

Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly Leu Leu Ala
385                 390                 395                 400

Tyr Tyr Leu Ser Leu Gln Pro Ser Glu Asp Ser Glu Tyr Ser Val Ala
                405                 410                 415

Pro Ile Thr Pro Lys Lys Met Lys Glu Asn Leu Leu Lys Ile Ala Thr
            420                 425                 430

Glu Gly Ala Leu Ser Asp Leu Pro Arg Asp Thr Pro Asn Leu Leu Ala
        435                 440                 445

Trp Asn Gly Gly Gly Cys Ser Asn Tyr Ser Ala Ile Ile Glu Ala Gly
    450                 455                 460

Gly Tyr Lys Val Glu Arg Lys Ser Gln Ser Ser Lys Ile Glu Ile Pro
465                 470                 475                 480

Thr Ser Phe Ser Asp Val Glu Glu Glu Leu Lys Ser Ile Ser Lys Lys
                485                 490                 495

Val His Glu Gly Ala Ser Ser Phe Ala Asp Arg Ala Lys Lys Phe Thr
            500                 505                 510

Glu Lys Ile His Lys Leu Val Asp Glu Glu Leu Lys Glu Phe Ile Glu
        515                 520                 525

Glu Leu Gly Ala
    530


<210>  113
<211>  510
<212>  PRT
<213>  Metarhizium flavoviride

<400>  113

Pro Phe Val Ala Ala Val Ala Leu Ser Val Val Gly Val Ala Gln Ala
1               5                   10                  15
```

```
Gly Phe Ser Ile Glu Thr Ile His Lys Glu Ser Ala Pro Ile Leu Thr
            20                  25                  30

His Val Asp Ala Glu Val Val Pro Asp Ser Tyr Ile Ile Lys Phe Lys
        35                  40                  45

Asp His Val Asn Glu Ala Ala Val Asn Asp His His Ser Trp Ile Gln
    50                  55                  60

Ser Ile His Lys Asp Gly Glu Glu Glu Arg Leu Glu Leu Arg Lys Arg
65                  70                  75                  80

Ser Leu Gly Ser Ser Pro Val Glu Ala Phe Ala Gly Leu Lys His Thr
                85                  90                  95

Tyr Asn Ile Ala Ser Gly Phe Lys Gly Tyr Ser Gly His Phe His Glu
            100                 105                 110

Ser Ile Ile Glu Lys Val Arg Asn His Gly Asp Val Glu Phe Ile Glu
        115                 120                 125

Lys Asp Thr Ile Ala Arg Ile Leu Arg Pro Val Thr Pro Asp Glu Ser
    130                 135                 140

Val Gln Glu Asp Cys Thr Pro Glu Thr Glu Lys Gln Ala Pro Trp Gly
145                 150                 155                 160

Leu Ala Arg Val Ser His Arg Lys Gly Leu Ser Phe Gly Thr Tyr Asn
                165                 170                 175

Lys Tyr Leu Tyr Ala Ala Asp Gly Gly Glu Gly Val Asp Ala Tyr Val
            180                 185                 190

Ile Asp Thr Gly Thr Asn Thr Asp His Val Asp Phe Glu Gly Arg Ala
        195                 200                 205

Lys Trp Gly Lys Thr Ile Pro Ala Gly Asp Ala Asp Glu Asp Gly Asn
    210                 215                 220

Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly
225                 230                 235                 240

Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val Leu Arg Ser Asn
                245                 250                 255

Gly Ser Gly Thr Met Ala Asp Val Val Lys Gly Val Glu Phe Ala Ala
            260                 265                 270

Thr Arg His Val Glu Gln Val Leu Arg Ala Lys Asp Gly Arg Arg Lys
        275                 280                 285
```

```
Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr
    290                 295                 300

Gln Ala Leu Asp Ala Ala Val Asn Ala Ala Val Lys Ala Gly Ile His
305                 310                 315                 320

Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser
                325                 330                 335

Pro Ala Ala Ala Glu Leu Pro Val Thr Val Gly Ala Ser Ala Phe Asp
            340                 345                 350

Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe
        355                 360                 365

Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly Ser Pro Thr Ala
    370                 375                 380

Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Cys Gly
385                 390                 395                 400

Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Gly Asp Ser Glu Phe
                405                 410                 415

Ser Val Ala Ser Ile Thr Pro Lys Gln Leu Lys Glu Thr Leu Ile Asp
            420                 425                 430

Ile Ser Thr Gln Gly Val Leu Thr Asp Ile Pro Asn Asp Thr Pro Asn
        435                 440                 445

Lys Leu Ala Trp Asn Gly Gly Gly Cys Ser Asn Tyr Ser Lys Ile Val
    450                 455                 460

Ala Ala Gly Gly Tyr Ile Gly Val Pro Arg Thr Ser Glu Pro Lys Pro
465                 470                 475                 480

Val Gly Asn Ala Val Lys Glu Glu Met Lys Val Leu Ser His Lys Val
                485                 490                 495

Ser Gln Gly Val Lys Asp Leu Gly Asp Lys Thr Glu Lys Gly
            500                 505                 510


<210>  114
<211>  531
<212>  PRT
<213>  Podospora anserina

<400>  114

Met Lys Gly Tyr Ala Ile Leu Ser Leu Ala Ala Ala Ala Ala Ala Ala
1               5                   10                  15
```

```
Pro Ser Ala Ser Ile Glu Thr Ile His Gly Glu Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ser Ala Asn Ala Glu Val Ile Pro Asn Ala Tyr Ile Val Lys Phe
        35                  40                  45

Lys Lys His Val Thr Glu Glu Lys Val Ser Asp His His Thr Trp Ile
    50                  55                  60

Gln Glu Leu His Thr Thr Arg Glu Asn Glu Arg Ile Asp Leu Lys Lys
65                  70                  75                  80

Arg Gly Gln Phe Pro Leu Val Asp Asp Val Phe His Gly Leu Lys His
                85                  90                  95

Thr Tyr Lys Val Gly Ser Glu Phe Leu Gly Tyr Ala Gly His Phe Asp
            100                 105                 110

Glu Glu Thr Ile Glu Lys Val Arg Arg His Pro Asp Val Glu Tyr Ile
        115                 120                 125

Glu Arg Asp Ser Ile Val His Thr Met Arg Val Ile Glu Asp Ala Lys
    130                 135                 140

Cys Asp Ser Glu Ile Glu Lys Ala Ala Pro Trp Gly Leu Ala Arg Ile
145                 150                 155                 160

Ser His Arg Asp Thr Leu Gly Phe Ser Thr Phe Asn Lys Tyr Leu Tyr
                165                 170                 175

Ala Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly
            180                 185                 190

Thr Asn Val Asp His Val Asp Phe Asp Gly Arg Ala Lys Trp Gly Lys
        195                 200                 205

Thr Ile Pro Ser Gly Asp Ala Asp Val Asp Gly Asn Gly His Gly Thr
    210                 215                 220

His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys
225                 230                 235                 240

Ala Asn Val Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr
                245                 250                 255

Met Ser Asp Val Val Ala Gly Val Glu Trp Ala Ala Lys Ser His Ile
            260                 265                 270

Gln Ala Val Lys Glu Ala Lys Asp Gly Lys Arg Lys Gly Phe Lys Gly
        275                 280                 285
```

```
Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Lys Thr Leu Asp
    290                 295                 300

Asp Thr Val Asn Ala Ala Val Ser Val Gly Ile His Phe Ala Val Ala
305                 310                 315                 320

Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala Ala
                325                 330                 335

Ala Lys Ala Val Thr Val Gly Ala Ser Gly Ile Asp Asp Ser Arg Ala
            340                 345                 350

Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly Leu
        355                 360                 365

Ser Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala Thr Asn Thr Ile
    370                 375                 380

Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly Leu Leu Ala Tyr
385                 390                 395                 400

Tyr Leu Ser Leu Gln Pro Ala Thr Asp Ser Glu Tyr Ser Leu Ala Pro
                405                 410                 415

Ile Thr Pro Glu Lys Leu Lys Asp Asn Leu Leu Lys Ile Ala Thr Glu
            420                 425                 430

Asp Ala Leu Thr Asp Met Pro Lys Gly Thr Pro Asn Leu Leu Ala Trp
        435                 440                 445

Asn Gly Ala Gly Cys Asn Asn Tyr Thr Ala Ile Val Glu Ala Gly Gly
    450                 455                 460

Tyr Lys Val Lys Lys Thr Glu Gly Thr Lys Ala Asp Phe Asp Val Ser
465                 470                 475                 480

Lys Leu Glu Glu Leu Ile Glu Asn Glu Tyr Asp Val Ile Ser Gly Gln
                485                 490                 495

Val Val Lys Gly Val Ser Ser Leu Ser Glu Lys Ala Arg Lys Phe Ser
            500                 505                 510

Lys Lys Ile His Glu Met Val Asp Glu Glu Leu Lys Glu Phe Leu Glu
        515                 520                 525

Glu Leu Ala
    530
```

<210> 115
<211> 536
<212> PRT
<213> Magnaporthe oryzae

<400> 115

```
Met Lys Ser Val Ile Leu Leu Ser Leu Ala Ala Cys Ala Val Ala Ala
1               5                  10                  15

Pro Thr Ala Gly Val Glu Thr Ile His Asp Gly Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ser Ser Asn Ala Glu Ala Ile Pro Asn Ala Tyr Ile Ile Lys Phe
        35                  40                  45

Lys Lys His Val Asp His Lys Ser Ala Ala Asp His Gln Met Trp Ile
    50                  55                  60

Gln Lys Val His Gly Glu Arg Glu Asp Glu Arg Leu Glu Leu Arg Lys
65                  70                  75                  80

Arg Gly Leu Phe Asp Ser Val Asn Asp Ala Phe Thr Gly Leu Lys His
                85                  90                  95

Thr Tyr Asn Val Gly Ser Gly Phe Leu Gly Tyr Ala Gly His Phe Asp
            100                 105                 110

Glu Glu Thr Ile Glu Lys Val Arg Arg His Pro Asp Val Glu Ala Ile
        115                 120                 125

Glu Arg Asp Thr Ile Val His Thr Met Arg Tyr Glu Glu Val Lys Lys
    130                 135                 140

Asp Glu Cys Asn Pro Asp Leu Glu Lys Gly Ala Pro Trp Gly Leu Ser
145                 150                 155                 160

Arg Val Ser His Arg Glu Ser Leu Ser Phe Ser Thr Tyr Asn Lys Tyr
                165                 170                 175

Leu Tyr Ser Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp
            180                 185                 190

Thr Gly Thr Asn Ile Asp His Val Asp Phe Glu Gly Arg Ala His Trp
        195                 200                 205

Gly Lys Thr Ile Pro Ala Asn Asp Gln Asp Ile Asp Gly Asn Gly His
    210                 215                 220

Gly Thr His Cys Ser Gly Thr Val Ala Gly Lys Lys Tyr Gly Val Ala
225                 230                 235                 240

Lys Lys Ala Gln Val Tyr Ala Val Lys Val Leu Lys Ser Asn Gly Ser
                245                 250                 255

Gly Thr Met Ser Asp Val Ile Ala Gly Val Asp Phe Ala Ala Lys Ser
```

```
            260                 265                 270

His Lys Ala Gln Val Ser Ala Ala Lys Asp Gly Lys Arg Lys Gly Phe
        275                 280                 285

Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Thr Leu
    290                 295                 300

Leu Asp Ala Ala Val Asn Ala Ala Val Asp Ala Gly Ile His Phe Ala
305                 310                 315                 320

Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala
                325                 330                 335

Ala Ala Ala Lys Ala Val Thr Val Gly Ala Ser Ala Leu Asp Asp Ser
            340                 345                 350

Arg Ala Tyr Phe Ser Asn Trp Gly Lys Cys Thr Asp Ile Phe Ala Pro
        355                 360                 365

Gly Leu Asn Ile Gln Ser Thr Trp Ile Gly Ser Lys Thr Ala Ile Asn
    370                 375                 380

Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly Leu Leu
385                 390                 395                 400

Ala Tyr Tyr Leu Ser Leu Gln Pro Ala Ser Asp Ser Glu Tyr Ser Leu
                405                 410                 415

Ala Thr Ile Thr Pro Glu Lys Leu Lys Ala Asp Leu Ile Lys Val Gly
            420                 425                 430

Thr Val Gly Ile Leu Thr Asp Ile Pro Lys Asp Thr Pro Asn Val Leu
        435                 440                 445

Ala Trp Asn Gly Gly Gly Cys Ser Asn Tyr Phe Glu Ile Val Ser Lys
    450                 455                 460

Gly Gly Tyr Lys Ala Lys Ala Gln Ala Asp Lys Ser Ser Ser Leu Leu
465                 470                 475                 480

Asp Ser Val Thr Glu Leu Glu Lys Ala Ile Glu His Asp Phe Arg Val
                485                 490                 495

Ile Ser Gly Lys Val Val Lys Glu Ala Ser Ser Met Thr Gly Gln Ala
            500                 505                 510

Glu Lys Leu Ser Glu Lys Ile His Gln Ala Val Asp Glu Glu Leu Lys
        515                 520                 525

His Phe Phe Gly Glu Ala Arg Val
```

530 535

<210> 116
<211> 522
<212> PRT
<213> Sclerotinia sclerotiorum

<400> 116

Met Arg Gly Leu Val Ser Leu Ser Leu Leu Pro Leu Leu Ala Ser Ser
1 5 10 15

Ala Pro Thr Phe Ser Thr Glu Thr Ile His Glu Gly Val Ala Pro Leu
20 25 30

Leu Ser Ser Ser Asn Ser Val Ala Val Pro Asp Ser Tyr Ile Val Val
35 40 45

Phe Lys Lys His Val Thr Glu Ala Ser Ala Thr Glu His His Ser Trp
50 55 60

Val Gln Asp Ile His Ser Asn Gly Glu Ala Gln Arg Thr Glu Leu Arg
65 70 75 80

Lys Arg Gly Gln Phe Pro Ile Thr Thr Asp Ile Phe Glu Gly Leu Lys
85 90 95

His Thr Tyr Asn Ile Ala Gly Asp Phe Leu Gly Tyr Ser Gly His Phe
100 105 110

Asp Asp Ser Val Ile Glu Glu Val Arg Arg His Pro Asp Val Glu Tyr
115 120 125

Val Glu Lys Asp Ser Ile Val His Thr Leu Gly Asp Ser Glu Gly Glu
130 135 140

Ile Glu Lys Asn Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp
145 150 155 160

Ser Leu Ser Phe Gly Thr Phe Asn Lys Tyr Leu Tyr Ala Ala Asp Ala
165 170 175

Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly Thr Asn Thr Glu
180 185 190

His Val Asp Phe Glu Gly Arg Ala His Trp Gly Lys Thr Ile Pro Ala
195 200 205

Gly Asp Ala Asp Glu Asp Gly Asn Gly His Gly Thr His Cys Ser Gly
210 215 220

Thr Val Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys Ala Asn Val Tyr
225 230 235 240

```
Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr Met Ala Asp Val
                245                 250                 255

Val Lys Gly Val Glu Trp Ala Ala Asn Ser His Thr Lys Lys Val Lys
            260                 265                 270

Glu Gly Lys Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly
        275                 280                 285

Gly Gly Lys Ser Pro Ala Leu Asp Arg Ala Val Asn Gly Ala Val Ala
    290                 295                 300

Ala Gly Ile His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ser
305                 310                 315                 320

Cys Asn Tyr Ser Pro Ala Ala Ala Glu Asn Ala Ile Thr Val Gly Ala
                325                 330                 335

Ser Ala Val Asp Asp Ser Arg Ala Tyr Phe Ser Asn Tyr Gly Thr Cys
            340                 345                 350

Asn Asp Ile Phe Ala Pro Gly Leu Ser Ile Leu Ser Thr Trp Ile Gly
        355                 360                 365

Ser Lys Tyr Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
    370                 375                 380

His Ile Cys Gly Leu Leu Ala Tyr Tyr Leu Ser Leu Gln Pro Ser Ser
385                 390                 395                 400

Asp Ser Ala Tyr Ala Val Ala Glu Ile Thr Pro Lys Lys Met Lys Glu
                405                 410                 415

Asn Leu Leu Ser Val Ala Thr Glu Gly Ala Leu Ser Asp Val Pro Ser
            420                 425                 430

Asn Thr Lys Asn Ile Leu Ala Trp Asn Gly Gly Gly Ser Ser Asn Tyr
        435                 440                 445

Thr Ser Ile Ile Lys Ala Gly Gly Tyr Ala Ala Lys Ala Ser Lys Lys
    450                 455                 460

Val Pro Thr Thr Val Glu Leu Leu Glu Lys Ala Ile Glu Asn Asp Phe
465                 470                 475                 480

Asn Met Leu Ser Gly Lys Val Val Lys Gly Gly Glu Ser Ile Val Ser
                485                 490                 495

Lys Thr Glu Glu Leu Ser Lys Lys Ile Gln Lys Ile Val Asp Glu Glu
            500                 505                 510
```

```
Ile Ser Glu Phe Phe Glu Glu Phe Ser Ser
        515                 520


<210>  117
<211>  491
<212>  PRT
<213>  Talaromyces stipitatus

<400>  117

Met Lys Gly Ile Leu Gly Leu Ser Leu Leu Pro Leu Leu Thr Val Ala
1               5                   10                  15


Ser Pro Val Met Pro Ser Thr Ile His Asn Asp Ala Ala Pro Ile Leu
            20                  25                  30


Ser Ser Ser Asn Ala Val Glu Val Pro Asp Ser Tyr Ile Ile Val Phe
        35                  40                  45


Lys Asn His Val Asp Pro Ala Ser Ala Ala Ala His His Ser Trp Val
    50                  55                  60


Gln Asp Ile His Asn Gln His Thr Glu Leu Arg Lys Arg Ser Gln Phe
65                  70                  75                  80


Pro Phe Ala Gly Asp Val Phe Ala Gly Leu Lys His Thr Phe Asp Ile
                85                  90                  95


Ala Gly Ser Phe Leu Gly Tyr Ser Gly His Phe Asp Glu Asn Val Ile
            100                 105                 110


Glu Ala Ile Arg Arg His Pro Asp Val Asp Tyr Ile Glu Lys Asp Ser
        115                 120                 125


Ile Val His Thr Met Glu Asp Pro Thr Thr Glu Lys Asn Ala Pro Trp
    130                 135                 140


Gly Leu Ala Arg Ile Ser His Arg Glu Ser Leu Ser Phe Gly Ser Phe
145                 150                 155                 160


Asn Lys Tyr Leu Tyr Ala Ala Asp Gly Gly Glu Gly Val Asp Val Tyr
                165                 170                 175


Val Ile Asp Thr Gly Thr Asn Ile Asp His Val Asp Phe Glu Gly Arg
            180                 185                 190


Ala Ser Trp Gly Lys Thr Ile Pro Thr Asp Asp Glu Asp Val Asp Gly
        195                 200                 205


Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr
    210                 215                 220
```

```
Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val Leu Lys Ser
225                 230                 235                 240

Asn Gly Ser Gly Thr Met Ser Asp Val Val Gln Gly Val Glu Trp Ala
                245                 250                 255

Ala Thr Gln His Ile Lys Lys Val Lys Asp Ala Lys Ala Gly Lys Ala
            260                 265                 270

Lys Gly Phe Lys Gly Ser Ala Ala Asn Met Ser Leu Gly Gly Gly Lys
        275                 280                 285

Ser Val Thr Leu Asp Arg Ala Val Asn Ala Ala Val Asp Ala Gly Ile
    290                 295                 300

His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ser Cys Asn Tyr
305                 310                 315                 320

Ser Pro Ala Ala Ala Glu Lys Ala Val Thr Val Gly Ala Ser Thr Leu
                325                 330                 335

Ala Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Asn Asp Ile
            340                 345                 350

Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr
        355                 360                 365

Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala
    370                 375                 380

Gly Leu Leu Ala Tyr Phe Leu Ser Leu Gln Pro Ala Ser Asp Ser Ala
385                 390                 395                 400

Phe Ala Val Ala Glu Ile Thr Pro Lys Lys Leu Lys Glu Asn Leu Ile
                405                 410                 415

Thr Ile Gly Thr Gln Gly Val Leu Thr Asp Val Pro Ser Asp Thr Thr
            420                 425                 430

Asn Ile Leu Ala Trp Asn Gly Gly Gly Ser Ser Asn Tyr Ser Asp Ile
        435                 440                 445

Ile Ala Lys Gly Gly Tyr Lys Thr Lys Ser Val Ser Asp Gln Val Asp
    450                 455                 460

Asp Leu Ile Ile Lys Ala Gln Glu Val Val Asn Glu Glu Leu Gly Ala
465                 470                 475                 480

Ile Tyr Ser His Ile Lys Asp Ala Val Val Ala
                485                 490
```

<210> 118
<211> 256
<212> PRT
<213> Trichoderma reesei

<400> 118

```
Met Phe Ile Ala Gly Val Ala Leu Ser Ala Leu Leu Cys Ala Asp Thr
1               5                   10                  15

Val Leu Ala Gly Val Ala Gln Asp Arg Gly Leu Ala Ala Arg Leu Ala
            20                  25                  30

Arg Arg Ala Gly Arg Arg Ser Ala Pro Phe Arg Asn Asp Thr Ser His
        35                  40                  45

Ala Thr Val Gln Ser Asn Trp Gly Gly Ala Ile Leu Glu Gly Ser Gly
    50                  55                  60

Phe Thr Ala Ala Ser Ala Thr Val Asn Val Pro Arg Gly Gly Gly Gly
65                  70                  75                  80

Ser Asn Ala Ala Gly Ser Ala Trp Val Gly Ile Asp Gly Ala Ser Cys
                85                  90                  95

Gln Thr Ala Ile Leu Gln Thr Gly Phe Asp Trp Tyr Gly Asp Gly Thr
            100                 105                 110

Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Phe Ala Ala Asp Phe Ser
        115                 120                 125

Gly Ile Asp Ile Arg Gln Gly Asp Gln Ile Ala Met Ser Val Val Ala
    130                 135                 140

Thr Ser Leu Thr Gly Gly Ser Ala Thr Leu Glu Asn Leu Ser Thr Gly
145                 150                 155                 160

Gln Lys Val Thr Gln Asn Phe Asn Arg Val Thr Ala Gly Ser Leu Cys
                165                 170                 175

Glu Thr Ser Ala Glu Phe Ile Ile Glu Asp Phe Glu Glu Cys Asn Ser
            180                 185                 190

Asn Gly Ser Asn Cys Gln Pro Val Pro Phe Ala Ser Phe Ser Pro Ala
        195                 200                 205

Ile Thr Phe Ser Ser Ala Thr Ala Thr Arg Ser Gly Arg Ser Val Ser
    210                 215                 220

Leu Ser Gly Ala Glu Ile Thr Glu Val Ile Val Asn Asn Gln Asp Leu
225                 230                 235                 240
```

```
Thr Arg Cys Ser Val Ser Gly Ser Ser Thr Leu Thr Cys Ser Tyr Val
                245                 250                 255


<210>  119
<211>  256
<212>  PRT
<213>  Trichoderma atroviride

<400>  119

Met Lys Phe Ile Thr Gly Ile Ala Ile Ser Ala Leu Leu Cys Ala Asp
1               5                   10                  15


Ala Ala Leu Ala Gly Val Ala Ala Asn Arg Gly Leu Ala Arg Arg Leu
            20                  25                  30


Ala Arg Arg Ala Gly Arg Arg Ser Ala Pro Phe Lys Asn Asn Thr Leu
        35                  40                  45


His Ala Ser Val Gln Ser Asn Trp Gly Gly Ala Ile Leu Gln Gly Ser
    50                  55                  60


Gly Tyr Ser Ala Ala Ser Ala Thr Val Asn Val Pro Thr Gly Gly Gly
65                  70                  75                  80


Gly Ser Ser Ala Ala Gly Thr Ala Trp Val Gly Ile Asp Gly Asp Thr
                85                  90                  95


Cys Asp Ser Ala Ile Leu Gln Thr Gly Ile Asp Trp Tyr Gly Asp Gly
            100                 105                 110


Thr Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Phe Ser Ala Asp Phe
        115                 120                 125


Ser Gly Ile Asp Ile Ser Ala Gly Asp Gln Ile Ala Met Ser Val Val
    130                 135                 140


Ala Thr Ser Leu Thr Gly Gly Ser Ala Thr Leu Glu Asn Leu Thr Ser
145                 150                 155                 160


Gly Gln Lys Val Thr Gln Asn Phe Ser Lys Val Thr Ala Gly Ser Leu
                165                 170                 175


Cys Glu Thr Ser Ala Glu Phe Ile Ile Glu Asp Phe Glu Glu Cys Asn
            180                 185                 190


Glu Asn Gly Ser Asp Cys Gln Phe Val Pro Phe Ala Ser Phe Ser Pro
        195                 200                 205


Ala Val Lys Phe Ser Ser Ala Ser Ala Thr Gln Asn Gly Arg Thr Val
    210                 215                 220


Ser Leu Ser Gly Ala Val Leu Thr Glu Val Glu Ile Asn Asn Lys Asp
```

225 230 235 240

Val Thr Lys Cys Ser Val Ser Gly Ser Thr Leu Thr Cys Ser Tyr Val
245 250 255

<210> 120
<211> 256
<212> PRT
<213> Trichoderma virens

<400> 120

Met Met Phe Val Ala Gly Val Ala Leu Thr Ala Leu Leu Cys Ala Asp
1 5 10 15

Ala Ala Leu Ala Gly Val Ala Gln Asn Arg Gly Leu Ala Ala Arg Leu
20 25 30

Ala Arg Arg Ala Gly Arg Arg Ser Ala Pro Met Arg Asn Asn Thr Ser
35 40 45

His Ala Thr Val Gln Ser Asn Trp Gly Gly Ala Ile Leu Glu Gly Ser
50 55 60

Gly Phe Thr Ala Ala Ser Ala Thr Val Asn Val Pro Lys Gly Gly Gly
65 70 75 80

Gly Ser Ser Ala Ala Gly Ser Ala Trp Val Gly Ile Asp Gly Ala Thr
85 90 95

Cys Asp Ser Ala Ile Leu Gln Thr Gly Phe Asp Trp Tyr Gly Asp Gly
100 105 110

Thr Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Phe Ala Ala Asp Phe
115 120 125

Thr Gly Ile Asp Ile Asn Gln Gly Asp Gln Ile Ala Met Ser Val Val
130 135 140

Ala Thr Ser Leu Thr Gly Gly Ser Ala Thr Leu Gln Asn Leu Ser Thr
145 150 155 160

Gly Gln Lys Val Thr Gln Thr Phe Ser Arg Val Thr Ala Gly Ser Leu
165 170 175

Cys Glu Thr Ser Ala Glu Phe Ile Ile Glu Asp Phe Glu Glu Cys Asn
180 185 190

Ser Asn Gly Ser Asn Cys Gln Pro Val Pro Phe Ala Ser Phe Ser Pro
195 200 205

Ala Ile Gln Phe Thr Ser Ala Ser Ala Thr Arg Ser Gly Gln Lys Val
210 215 220

```
Ser Leu Ser Gly Ala Val Met Ser Glu Val Ile Val Asn Asn Lys Asp
225                 230                 235                 240


Leu Thr Lys Cys Ser Val Ser Gly Ser Thr Leu Thr Cys Ser Tyr Val
                245                 250                 255


<210>  121
<211>  271
<212>  PRT
<213>  Aspergillus flavus

<400>  121

Met Lys Leu Phe Ala Ile Leu Ser Ser Thr Val Leu Ala Ser Val Ala
1               5                   10                  15


Leu Ala Ser Pro Leu Thr Leu Glu Arg Arg Ala Arg Asn Ala Ala Arg
            20                  25                  30


Leu Gln Ala Arg Val Ala Gln Arg His Ser Asn Leu Pro Phe Lys Ala
        35                  40                  45


Gly Thr Asn Glu Ile Leu His Leu Asn Glu Thr Thr His Glu Glu Tyr
    50                  55                  60


Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Ser Gly Tyr Thr Ser
65                  70                  75                  80


Val Thr Gly Thr Phe Thr Val Pro Thr Pro Ser Ala Pro Ser Gly Ala
                85                  90                  95


Asp Ser Asp Glu Gln Tyr Cys Ala Thr Ala Trp Val Gly Ile Asp Gly
            100                 105                 110


Asp Thr Cys Gln Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Ile
        115                 120                 125


Asp Ser Ser Gly Thr Thr Phe Asp Ala Trp Tyr Glu Trp Phe Pro Asp
    130                 135                 140


Tyr Ser His Asp Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Lys Val
145                 150                 155                 160


Lys Val Thr Val Asp Ala Ser Ser Lys Thr Ala Gly Thr Ala Ile Val
                165                 170                 175


Glu Asn Leu Thr Thr Gly Lys Thr Val Ser His Thr Phe Thr Gly Gln
            180                 185                 190


Asp Asp Asn Ala Leu Cys Glu Thr Asn Ala Glu Trp Ile Met Glu Asp
        195                 200                 205
```

```
Phe Ser Ser Phe Leu Ser Leu Val Pro Phe Ala Asn Phe Gly Thr Val
    210                 215                 220


Thr Phe Thr Asp Ile Ser Ala Thr Ser Gly Asp Ser Ser Val Gly Ala
225                 230                 235                 240


Ser Asn Ala Thr Ile Ile Asp Ile Gln Gln Asn Asn Lys Thr Leu Thr
                245                 250                 255


Ser Ser Ser Ala Ser Asp Thr Glu Val Thr Ile Lys Tyr Ile Gly
            260                 265                 270


<210>  122
<211>  265
<212>  PRT
<213>  Aspergillus niger

<400>  122

Met Lys Thr Thr Ala Leu Leu Thr Ala Gly Leu Leu Ala Thr Thr Ala
1               5                   10                  15


Met Ala Ala Pro Leu Thr Ala Lys Arg Gln Ala Ala Arg Ala Lys Arg
            20                  25                  30


Ser Thr Asn Arg Gln Ser Asn Pro Pro Phe Lys Pro Gly Thr Asn Glu
        35                  40                  45


Val Leu Ala Leu Asn Gly Thr Lys Asn Val Glu Tyr Ser Ser Asn Trp
    50                  55                  60


Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ala Val Thr Ala Glu
65                  70                  75                  80


Phe Val Val Pro Thr Pro Ser Val Pro Ser Gly Gly Ser Ser Arg Glu
                85                  90                  95


Glu Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Asp
            100                 105                 110


Thr Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Val Gln Gly Ser Glu
        115                 120                 125


Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp
    130                 135                 140


Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Thr Ile Lys Val Thr Val
145                 150                 155                 160


Asp Ala Ser Ser Asp Thr Thr Gly Thr Ala Thr Ile Glu Asn Val Ser
                165                 170                 175
```

```
Thr Gly Thr Thr Val Thr His Ser Phe Thr Gly Gly Val Asp Gly Asp
            180                 185                 190

Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Glu Asp
        195                 200                 205

Asp Ser Leu Val Pro Phe Ala Asp Phe Gly Thr Val Thr Phe Thr Ser
    210                 215                 220

Cys Ser Ala Thr Lys Asp Gly Ser Ser Val Gly Pro Glu Asp Ala Thr
225                 230                 235                 240

Ile Ile Asp Ile Glu Gln Asn Glu Val Leu Thr Ser Val Ser Val Ser
                245                 250                 255

Ser Ser Glu Val Val Val Lys Tyr Val
            260                 265


<210>  123
<211>  268
<212>  PRT
<213>  Aspergillus terreus

<400>  123

Met Lys Leu Ser Val Leu Ser Ser Ile Leu Leu Ala Gly Thr Ala Val
1               5                   10                  15

Ala Ala Pro Leu Thr Ala Gln Arg Gln Ala Arg Asn Ala Arg Arg Val
            20                  25                  30

Ala Arg Ala Ala Asn Arg Ser Ser His Pro Pro Tyr Lys Pro Asp Ser
        35                  40                  45

Ser Glu Leu Leu His Leu Ser Asn Thr Thr His Val Glu Tyr Ser Ser
    50                  55                  60

Asn Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ala Val Thr
65                  70                  75                  80

Gly Glu Phe Thr Val Pro Thr Pro Ser Thr Pro Ser Gly Ser Ser Ser
                85                  90                  95

Ser Lys Glu Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr
            100                 105                 110

Cys Ser Thr Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Val Gln Gly
        115                 120                 125

Ser Ser Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala
    130                 135                 140

Tyr Asp Phe Ser Gly Ile Thr Ile Ser Ala Gly Asp Thr Ile Arg Val
```

145 150 155 160

Thr Val Asp Ala Thr Ser Lys Thr Ala Gly Thr Ala Thr Val Glu Asn
165 170 175

Leu Thr Thr Gly Lys Thr Val Thr His Thr Phe Thr Gly Gly Val Asp
180 185 190

Gly Ser Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp Phe Glu
195 200 205

Glu Asn Gly Ser Leu Val Pro Phe Ala Asp Phe Gly Thr Val Thr Phe
210 215 220

Ser Ser Ala Glu Ala Thr Asp Gly Gly Ser Thr Val Gly Pro Ser Gly
225 230 235 240

Ala Thr Val Ile Asp Ile Glu Gln Ser Asn Lys Val Leu Thr Ser Val
245 250 255

Ser Val Gly Ser Ser Ser Val Thr Val Lys Tyr Val
260 265

<210> 124
<211> 260
<212> PRT
<213> Scytalidium lignicola

<400> 124

Met Lys Phe Thr Thr Ala Ala Val Leu Ser Ala Leu Val Ser Ala Glu
1 5 10 15

Ile Ala Phe Ala Ala Pro Gly Gly Asn Gly Phe Ala Arg Arg Gln Ala
20 25 30

Arg Arg Gln Ala Arg Ala Ala Gly Leu Lys Ala Ser Pro Phe Arg Gln
35 40 45

Val Asn Ala Lys Glu Ala Thr Val Glu Ser Asn Trp Gly Gly Ala Ile
50 55 60

Leu Ile Gly Ser Asp Phe Asp Thr Val Ser Ala Thr Ala Asn Val Pro
65 70 75 80

Ser Ala Ser Gly Gly Ser Ser Ala Ala Gly Thr Ala Trp Val Gly Ile
85 90 95

Asp Gly Asp Thr Cys Gln Thr Ala Ile Leu Gln Thr Gly Phe Asp Trp
100 105 110

Tyr Gly Asp Gly Thr Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Val
115 120 125

```
Ser Asp Asp Phe Ser Gly Ile Thr Ile Ser Glu Gly Asp Ser Ile Gln
    130                 135                 140

Met Ser Val Thr Ala Thr Ser Asp Thr Ser Gly Ser Ala Thr Leu Glu
145                 150                 155                 160

Asn Leu Thr Thr Gly Gln Lys Val Ser Lys Ser Phe Ser Asn Glu Ser
                165                 170                 175

Ser Gly Ser Leu Cys Arg Thr Asn Ala Glu Phe Ile Ile Glu Asp Phe
            180                 185                 190

Glu Glu Cys Asn Ser Asn Gly Ser Asp Cys Glu Phe Val Pro Phe Ala
        195                 200                 205

Ser Phe Ser Pro Ala Val Glu Phe Thr Asp Cys Ser Val Thr Ser Asp
    210                 215                 220

Gly Glu Ser Val Ser Leu Asp Asp Ala Gln Ile Thr Gln Val Ile Ile
225                 230                 235                 240

Asn Asn Gln Asp Val Thr Asp Cys Ser Val Ser Gly Thr Thr Val Ser
                245                 250                 255

Cys Ser Tyr Val
            260


<210>  125
<211>  206
<212>  PRT
<213>  Scytalidium lignicola

<400>  125

Thr Val Glu Ser Asn Trp Gly Gly Ala Ile Leu Ile Gly Ser Asp Phe
1               5                   10                  15

Asp Thr Val Ser Ala Thr Ala Asn Val Pro Ser Ala Ser Gly Gly Ser
            20                  25                  30

Ser Ala Ala Gly Thr Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Gln
        35                  40                  45

Thr Ala Ile Leu Gln Thr Gly Phe Asp Trp Tyr Gly Asp Gly Thr Tyr
    50                  55                  60

Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Val Ser Asp Asp Phe Ser Gly
65                  70                  75                  80

Ile Thr Ile Ser Glu Gly Asp Ser Ile Gln Met Ser Val Thr Ala Thr
                85                  90                  95
```

```
Ser Asp Thr Ser Gly Ser Ala Thr Leu Glu Asn Leu Thr Thr Gly Gln
            100                 105                 110

Lys Val Ser Lys Ser Phe Ser Asn Glu Ser Ser Gly Ser Leu Cys Arg
        115                 120                 125

Thr Asn Ala Glu Phe Ile Ile Glu Asp Phe Glu Glu Cys Asn Ser Asn
    130                 135                 140

Gly Ser Asp Cys Glu Phe Val Pro Phe Ala Ser Phe Ser Pro Ala Val
145                 150                 155                 160

Glu Phe Thr Asp Cys Ser Val Thr Ser Asp Gly Glu Ser Val Ser Leu
                165                 170                 175

Asp Asp Ala Gln Ile Thr Gln Val Ile Ile Asn Asn Gln Asp Val Thr
            180                 185                 190

Asp Cys Ser Val Ser Gly Thr Thr Val Ser Cys Ser Tyr Val
        195                 200                 205


<210>  126
<211>  204
<212>  PRT
<213>  Scytalidium lignicola

<400>  126

Thr Val Glu Ser Asn Trp Gly Gly Ala Ile Leu Ile Gly Ser Asp Phe
1               5                   10                  15

Asp Thr Val Ser Ala Thr Ala Asn Val Pro Ser Ala Thr Gly Ala Ser
            20                  25                  30

Gly Gly Ser Ser Ala Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Gln
        35                  40                  45

Thr Ala Ile Leu Gln Thr Gly Phe Asp Trp Tyr Gly Asp Gly Thr Tyr
    50                  55                  60

Asp Ala Trp Tyr Glu Trp Tyr Pro Glu Val Ser Asp Asp Phe Ser Gly
65                  70                  75                  80

Ile Thr Ile Ser Glu Gly Asp Ser Ile Gln Met Ser Val Thr Ala Thr
                85                  90                  95

Ser Asp Thr Ser Gly Ser Ala Thr Leu Glu Asn Leu Thr Thr Gly Gln
            100                 105                 110

Lys Val Ser Lys Ser Phe Ser Asn Glu Ser Ser Gly Leu Cys Arg Thr
        115                 120                 125
```

```
Asn Ala Glu Phe Ile Ile Glu Asp Phe Glu Glu Cys Asn Ser Asp Gly
    130                 135                 140

Ser Asp Glu Phe Val Pro Phe Ala Ser Phe Ser Pro Ala Val Glu Phe
145                 150                 155                 160

Thr Asp Cys Ser Val Thr Ser Asp Gly Glu Ser Val Ser Leu Asp Asp
                165                 170                 175

Ala Gln Ile Thr Gln Val Ile Ile Asn Asn Gln Asp Val Thr Asp Cys
            180                 185                 190

Ser Val Ser Gly Thr Thr Val Ser Cys Ser Tyr Val
        195                 200


<210>  127
<211>  245
<212>  PRT
<213>  Thielavia terrestris

<400>  127

Met Lys Asn Ala Ile Leu Ile Ala Ala Ala Val Gly Leu Ala Ala Ala
1               5                   10                  15

Leu Pro Gln Pro Gly Ala Pro Leu Thr Arg Arg Gly Gly Thr Arg Pro
            20                  25                  30

Pro His His Ser Ala Pro Arg Arg Asn Thr Thr Tyr Pro Glu Tyr Ser
        35                  40                  45

Ser Asn Trp Ala Gly Ala Val Gln Ile Gly Thr Gly Phe Thr Phe Val
    50                  55                  60

Thr Gly Thr Ile Thr Val Pro Ser Val Tyr Asn Gly Asn Pro Tyr Ser
65                  70                  75                  80

Ala Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Gln Thr Ala
                85                  90                  95

Ile Leu Gln Thr Gly Val Ser Phe Tyr Gly Asp Gly Ser Tyr Asp Ala
            100                 105                 110

Trp Tyr Glu Trp Ile Pro Asp Tyr Ser Tyr Ser Phe Ser Gly Phe Gly
        115                 120                 125

Leu Arg Ala Gly Asp Glu Ile Arg Met Thr Val Asp Ala Thr Ser Lys
    130                 135                 140

Thr Thr Gly Val Ala Thr Leu Glu Asn Leu Ser Thr Gly Ala Lys Val
145                 150                 155                 160

Ser His Thr Phe Arg Asn Thr Pro Ser Thr Leu Cys Glu Thr Asn Ala
```

165 170 175

Glu Trp Ile Val Glu Asp Phe Glu Ser Gly Gly Ser Leu Val Pro Phe
180 185 190

Ala Asp Phe Gly Thr Val Thr Phe Thr Asp Ala Tyr Ala Thr Gly Ser
195 200 205

Gly Gly Gln Val Thr Pro Gln Gly Ala Thr Ile Ile Asp Ile Arg Gln
210 215 220

Ser Gly Arg Val Leu Thr Asn Cys Gly Thr Ser Gly Ala Asp Leu Thr
225 230 235 240

Cys Thr Tyr Thr Gly
245

<210> 128
<211> 270
<212> PRT
<213> Penicillium chrysogenum

<400> 128

Met Lys Phe Ser Thr Thr Ile Leu Ser Ala Ala Leu Leu Thr Ala Ser
1 5 10 15

Ala Ile Ala Ala Pro Leu Thr Glu Arg Arg Ala Ala Arg His Ala Ala
20 25 30

Arg Ala Ala Asp Arg Ala Gly Arg Ile Ser Arg Pro Ala Ala Lys Gln
35 40 45

Asp Thr Leu Glu Leu Val Ser Leu Asn Gly Thr Ser His Ala Gln Tyr
50 55 60

Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ser
65 70 75 80

Val Thr Gly Glu Phe Thr Val Pro Lys Pro Asn Leu Pro Ser Asp Ala
85 90 95

Ser Ser Gly Gln Gln Ser Cys Ala Ser Ala Trp Val Gly Ile Asp Gly
100 105 110

Asp Thr Cys Ser Ser Ala Ile Leu Gln Thr Gly Ile Asp Phe Cys Ile
115 120 125

Gln Gly Gly Glu Val Ser Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Asp
130 135 140

Tyr Ala His Asp Phe Ser Gly Ile Asp Ile Ser Thr Gly Asp Val Ile
145 150 155 160

```
Lys Leu Thr Val Thr Ala Thr Ser Lys Ser Ser Gly Ser Ala Val Ile
                165                 170                 175

Asp Asn Val Thr Thr Gly Lys Ser Val Thr His Lys Phe Ser Gly Val
            180                 185                 190

Asp Asp Gly Asp Leu Cys Glu Thr Asn Ala Glu Trp Ile Val Glu Asp
        195                 200                 205

Phe Glu Ser Gly Gly Gln Leu Val Pro Phe Thr Asn Phe Gly Thr Val
    210                 215                 220

Thr Phe Thr Lys Ala Glu Ala Thr Ser Gly Gly Lys Ser Val Gly Pro
225                 230                 235                 240

Ser Gly Ala Thr Leu Phe Glu Ile Arg Gln Ser Lys Lys Val Leu Thr
                245                 250                 255

Lys Ser Ser Val Thr Gly Asn Ser Val Thr Val Ser Tyr Val
            260                 265                 270


<210>  129
<211>  236
<212>  PRT
<213>  Trichoderma reesei

<400>  129

Met Asp Ala Ile Arg Ala Arg Ser Ala Ala Arg Arg Ser Asn Arg Phe
1               5                   10                  15

Gln Ala Gly Ser Ser Lys Asn Val Asn Gly Thr Ala Asp Val Glu Ser
            20                  25                  30

Thr Asn Trp Ala Gly Ala Ala Ile Thr Thr Ser Gly Val Thr Glu Val
        35                  40                  45

Ser Gly Thr Phe Thr Val Pro Arg Pro Ser Val Pro Ala Gly Gly Ser
    50                  55                  60

Ser Arg Glu Glu Tyr Cys Gly Ala Ala Trp Val Gly Ile Asp Gly Tyr
65                  70                  75                  80

Ser Asp Ala Asp Leu Ile Gln Thr Gly Val Leu Trp Cys Val Glu Asp
                85                  90                  95

Gly Glu Tyr Leu Tyr Glu Ala Trp Tyr Glu Tyr Leu Pro Ala Ala Leu
            100                 105                 110

Val Glu Tyr Ser Gly Ile Ser Val Thr Ala Gly Ser Val Val Thr Val
        115                 120                 125
```

```
Thr Ala Thr Lys Thr Gly Thr Asn Ser Gly Val Thr Thr Leu Thr Ser
    130                 135                 140

Gly Gly Lys Thr Val Ser His Thr Phe Ser Arg Gln Asn Ser Pro Leu
145                 150                 155                 160

Pro Gly Thr Ser Ala Glu Trp Ile Val Glu Asp Phe Thr Ser Gly Ser
                165                 170                 175

Ser Leu Val Pro Phe Ala Asp Phe Gly Ser Val Thr Phe Thr Gly Ala
            180                 185                 190

Thr Ala Val Val Asn Gly Ala Thr Val Thr Ala Gly Gly Asp Ser Pro
        195                 200                 205

Val Ile Ile Asp Leu Glu Asp Ser Arg Gly Asp Ile Leu Thr Ser Thr
    210                 215                 220

Thr Val Ser Gly Ser Thr Val Thr Val Glu Tyr Glu
225                 230                 235


<210>  130
<211>  265
<212>  PRT
<213>  Trichoderma atroviride

<400>  130

Met Lys Ser Leu Thr Leu Ala Ala Asn Leu Leu Leu Val Ala Ser Ala
1               5                   10                  15

Ala Met Ala Thr Pro Leu Ala Ala Arg Lys Gln Ala Ala Met Asp Ala
            20                  25                  30

Leu Arg Ala Arg Asn Ala Ala Arg Arg Ser Asn Lys Phe Gln Ala Ser
        35                  40                  45

Ser Ser Thr His Val Asn Ser Thr Ala Asp Val Glu Ser Thr Asn Trp
    50                  55                  60

Ala Gly Ala Ala Leu Thr Thr Ser Gly Ile Thr Glu Val Thr Gly Thr
65                  70                  75                  80

Phe Thr Val Pro Lys Pro Thr Val Pro Ser Gly Gly Ser Ser Ser Thr
                85                  90                  95

Glu Tyr Cys Gly Ala Ala Trp Val Gly Ile Asp Gly Tyr Ser Asp Ala
            100                 105                 110

Asp Leu Ile Gln Thr Gly Val Leu Trp Cys Val Gln Ser Gly Glu Tyr
        115                 120                 125
```

```
Leu Tyr Glu Ala Trp Tyr Glu Tyr Leu Pro Ala Ser Leu Ile Ala Tyr
    130                 135                 140

Ser Gly Ile Thr Val Thr Ala Gly Ser Val Val Thr Val Thr Ala Thr
145                 150                 155                 160

Lys Thr Gly Asn Asn Ser Gly Thr Thr Thr Leu Thr Ser Gly Gly Lys
                165                 170                 175

Thr Val Ser His Thr Phe Ser Asn Gln Asn Ser Pro Leu Pro Gly Thr
            180                 185                 190

Ser Ala Glu Trp Ile Val Glu Asp Phe Thr Ser Gly Ser Ser Leu Val
        195                 200                 205

Pro Phe Ala Asp Phe Gly Ser Val Thr Phe Thr Gly Ser Ser Ala Leu
    210                 215                 220

Val Asn Gly Gln Thr Val Thr Pro Gly Ser Gly Ser Ser Thr Ile Ile
225                 230                 235                 240

Asp Leu Glu Asn Ser Arg Gly Gln Ile Ile Thr Ser Thr Ser Ile Ser
                245                 250                 255

Gly Gly Ser Val Thr Val Asn Tyr Glu
            260                 265


<210>  131
<211>  237
<212>  PRT
<213>  Trichoderma virens

<400>  131

Met Asp Ala Ile Arg Ala Arg Asn Ala Val Arg Arg Ser Asn Arg Phe
1               5                   10                  15

Leu Ala Gly Ser Asn Ser Asn Asn Val Asn Gly Thr Ala Asp Val Glu
            20                  25                  30

Ser His Asn Trp Ala Gly Ala Ala Leu Thr Thr Ser Gly Val Thr Glu
        35                  40                  45

Val Ser Gly Thr Phe Thr Val Pro Lys Pro Ser Ile Pro Ala Gly Gly
    50                  55                  60

Ser Ser Arg Thr Glu Tyr Cys Gly Ala Ala Trp Val Gly Ile Asp Gly
65                  70                  75                  80

Tyr Ser Asn Ala Asp Leu Ile Gln Thr Gly Val Leu Trp Cys Val Glu
                85                  90                  95

Gly Gly Gln Phe Leu Tyr Glu Ala Trp Tyr Glu Tyr Leu Pro Ala Ser
```

100 105 110

Leu Val Ala Tyr Ser Gly Ile Ser Val Thr Ala Gly Ser Val Val Thr
115 120 125

Val Thr Ala Thr Lys Thr Gly Thr Asn Ser Gly Val Thr Thr Leu Thr
130 135 140

Ser Gly Gly Lys Thr Val Ser His Thr Phe Ser Arg Glu Ser Ser Ser
145 150 155 160

Leu Pro Gly Thr Ser Ala Glu Trp Ile Val Glu Asp Phe Thr Ser Gly
165 170 175

Ser Ser Leu Val Pro Phe Ala Asn Phe Gly Ser Val Thr Phe Thr Gly
180 185 190

Ala Ser Ala Val Val Asn Gly Ala Thr Val Thr Pro Gly Ser Gly Ser
195 200 205

Ala Val Ile Ile Asp Leu Glu Asp Ala Ser Gly Asp Ile Ile Thr Ser
210 215 220

Thr Ser Val Ser Gly Ser Ser Leu Thr Val Asn Tyr Glu
225 230 235

<210> 132
<211> 259
<212> PRT
<213> Bombyx mori

<400> 132

Met Lys Phe Thr Ser Leu Thr Ala Asn Leu Leu Leu Val Ala Thr Thr
1 5 10 15

Ala Leu Ala Ser Pro Leu Ser Ala Arg Lys Gln Ala Ala Met Asp Ala
20 25 30

Leu Arg Ala Arg Arg Ser Phe Arg Arg Ser Asn Asn Thr Ala Gly Thr
35 40 45

Ala Asp Ala Thr Ser Pro Asn Trp Ala Gly Val Ala Ile Ser Gln Thr
50 55 60

Gly Val Thr Glu Val Ser Gly Thr Phe Thr Val Pro Gln Pro Lys Leu
65 70 75 80

Pro Ala Gly Gly Asp Pro Ser Val Ser Tyr Cys Gly Val Ala Trp Val
85 90 95

Gly Ile Asp Gly Trp Thr Asn Gly Asp Leu Ile Gln Thr Gly Val Leu
100 105 110

```
Trp Cys Ile Thr Glu Gly Glu Thr Phe Trp Asp Pro Trp Tyr Glu Tyr
        115                 120                 125

Leu Pro Gly Ala Ile Thr Ile Tyr Glu Gly Val Thr Val Ser Ala Gly
    130                 135                 140

Ser Val Val Thr Val Thr Ala Thr Lys Thr Gly Thr Asn Ser Gly Val
145                 150                 155                 160

Thr Thr Leu Thr Val Asp Gly Ile Thr Val Ser His Thr Phe Thr Gly
                165                 170                 175

Glu Asn Phe Ser Leu Pro Gly Thr Ser Ala Glu Trp Ile Val Glu Asp
            180                 185                 190

Tyr Glu Tyr Ser Val Ala Gly Pro Pro Phe Val Pro Phe Ala Asp Phe
        195                 200                 205

Gly Ser Val Thr Phe Thr Gly Ala Thr Ala Val Val Asn Gly Ala Thr
    210                 215                 220

Ile Thr Pro Gly Glu Gly Asn Trp Val Ile Ile Asp Leu Glu Arg Ser
225                 230                 235                 240

Asn Ser Ser Ile Thr Ser Ser Ser Phe Ser Gly Ser Thr Val Thr Ile
                245                 250                 255

Asn Tyr Leu
```

<210> 133
<211> 271
<212> PRT
<213> Aspergillus flavus

<400> 133

```
Met Lys Leu Phe Ala Ile Leu Ser Ser Thr Val Leu Ala Ser Val Ala
1               5                   10                  15

Leu Ala Ser Pro Leu Thr Leu Glu Arg Arg Ala Arg Asn Ala Ala Arg
            20                  25                  30

Leu Gln Ala Arg Val Ala Gln Arg His Ser Asn Leu Pro Phe Lys Ala
        35                  40                  45

Gly Thr Asn Glu Ile Leu His Leu Asn Glu Thr Thr His Glu Glu Tyr
    50                  55                  60

Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Ser Gly Tyr Thr Ser
65                  70                  75                  80
```

```
Val Thr Gly Thr Phe Thr Val Pro Thr Pro Ser Ala Pro Ser Gly Ala
                85                  90                  95

Asp Ser Asp Glu Gln Tyr Cys Ala Thr Ala Trp Val Gly Ile Asp Gly
            100                 105                 110

Asp Thr Cys Gln Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Ile
        115                 120                 125

Asp Ser Ser Gly Thr Thr Phe Asp Ala Trp Tyr Glu Trp Phe Pro Asp
    130                 135                 140

Tyr Ser His Asp Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Lys Val
145                 150                 155                 160

Lys Val Thr Val Asp Ala Ser Ser Lys Thr Ala Gly Thr Ala Ile Val
                165                 170                 175

Glu Asn Leu Thr Thr Gly Lys Thr Val Ser His Thr Phe Thr Gly Gln
            180                 185                 190

Asp Asp Asn Ala Leu Cys Glu Thr Asn Ala Glu Trp Ile Met Glu Asp
        195                 200                 205

Phe Ser Ser Phe Leu Ser Leu Val Pro Phe Ala Asn Phe Gly Thr Val
    210                 215                 220

Thr Phe Thr Asp Ile Ser Ala Thr Ser Gly Asp Ser Ser Val Gly Ala
225                 230                 235                 240

Ser Asn Ala Thr Ile Ile Asp Ile Gln Gln Asn Asn Lys Thr Leu Thr
                245                 250                 255

Ser Ser Ser Ala Ser Asp Thr Glu Val Thr Ile Lys Tyr Ile Gly
            260                 265                 270


<210>  134
<211>  265
<212>  PRT
<213>  Aspergillus niger

<400>  134

Met Lys Thr Thr Ala Leu Leu Thr Ala Gly Leu Leu Ala Thr Thr Ala
1               5                   10                  15

Met Ala Ala Pro Leu Thr Ala Lys Arg Gln Ala Ala Arg Ala Lys Arg
            20                  25                  30

Ser Thr Asn Arg Gln Ser Asn Pro Pro Phe Lys Pro Gly Thr Asn Glu
        35                  40                  45
```

```
Val Leu Ala Leu Asn Gly Thr Lys Asn Val Glu Tyr Ser Ser Asn Trp
    50                  55                  60

Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ala Val Thr Ala Glu
65                  70                  75                  80

Phe Val Val Pro Thr Pro Ser Val Pro Ser Gly Gly Ser Ser Arg Glu
                85                  90                  95

Glu Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Asp
            100                 105                 110

Thr Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Val Gln Gly Ser Glu
        115                 120                 125

Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp
    130                 135                 140

Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Thr Ile Lys Val Thr Val
145                 150                 155                 160

Asp Ala Ser Ser Asp Thr Thr Gly Thr Ala Thr Ile Glu Asn Val Ser
                165                 170                 175

Thr Gly Thr Thr Val Thr His Ser Phe Thr Gly Gly Val Asp Gly Asp
            180                 185                 190

Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Glu Asp
        195                 200                 205

Asp Ser Leu Val Pro Phe Ala Asp Phe Gly Thr Val Thr Phe Thr Ser
    210                 215                 220

Cys Ser Ala Thr Lys Asp Gly Ser Ser Val Gly Pro Glu Asp Ala Thr
225                 230                 235                 240

Ile Ile Asp Ile Glu Gln Asn Glu Val Leu Thr Ser Val Ser Val Ser
                245                 250                 255

Ser Ser Glu Val Val Val Lys Tyr Val
            260                 265


<210>  135
<211>  270
<212>  PRT
<213>  Aspergillus nidulans

<400>  135

Met Lys Leu Ser Ile Ala Ala Ile Ser Ser Ile Leu Leu Ala Gly Gly
1               5                   10                  15

Ala Leu Ala Ala Pro Leu Thr Glu Ala Arg Arg Gln Ala Arg Ala Leu
```

20 25 30

Arg Gly Arg Gly Pro Ser Asn Arg Ala Ser His Pro Pro Tyr Lys Val
35 40 45

Gly Ser Thr Glu Leu Leu Ser Leu Ser Asn Glu Thr Gln Val Glu Tyr
50 55 60

Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ser
65 70 75 80

Val Thr Gly Glu Phe Thr Val Pro Thr Pro Ser Leu Pro Thr Gly Ala
85 90 95

Ser Arg Asn Lys Gln Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly
100 105 110

Asp Thr Cys Ser Thr Ala Ile Leu Gln Thr Gly Ile Asp Phe Cys Ile
115 120 125

Gln Gly Ser Ser Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp
130 135 140

Tyr Ala Tyr Asp Phe Ser Gly Ile Thr Ile Ser Ala Gly Asp Ser Ile
145 150 155 160

Arg Val Thr Val Asp Ala Thr Thr Leu Thr Ala Gly Thr Ala Thr Val
165 170 175

Glu Asn Leu Thr Thr Gly Lys Thr Val Thr His Thr Phe Thr Gly Gly
180 185 190

Val Asp Gly Asp Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp
195 200 205

Phe Glu Ser Asn Gly Gln Leu Val Pro Phe Ala Asp Phe Gly Thr Val
210 215 220

Thr Phe Thr Ser Ala Glu Val Thr Asn Asp Gly Lys Thr Val Gly Pro
225 230 235 240

Ser Gly Ala Thr Ile Ile Asp Ile Lys Gln Gly Asn Ser Val Leu Thr
245 250 255

Asp Val Ser Val Thr Asp Asp Ser Val Thr Val Ser Tyr Val
260 265 270

<210> 136
<211> 269
<212> PRT
<213> Aspergillus clavatus

<400> 136

```
Met Lys Phe Ser Ala Val Val Ala Ser Ser Leu Leu Ala Gly Ala Ala
1               5                  10                  15

Ile Ala Ala Pro Leu Thr Glu Gln Arg Gln Ala Arg His Ala Arg Arg
            20                  25                  30

Thr Ala Arg Ala Thr Asn Arg Ser Ser His Pro Pro Tyr Lys Val Gly
        35                  40                  45

Ser Ser Glu Leu Leu Glu Leu Ser Asn Ser Thr His Val Glu Tyr Ser
    50                  55                  60

Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Asn Gly Tyr Thr Ser Val
65                  70                  75                  80

Val Gly Glu Phe Thr Val Pro Glu Pro Ser Ala Pro Asp Gly Ala Asp
                85                  90                  95

Ser Gly Thr Gln Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp
            100                 105                 110

Thr Cys Ser Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Ile Gln
        115                 120                 125

Asp Gly Ser Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr
    130                 135                 140

Ala Tyr Asp Phe Ser Gly Ile Asp Ile Ser Val Gly Asp Thr Ile Lys
145                 150                 155                 160

Leu Thr Ile Asp Ala Thr Ser Lys Thr Ala Gly Ser Ala Ile Ile Gln
                165                 170                 175

Asn Leu Ser Thr Gly Lys Thr Val Lys His Thr Phe Thr Gly Gly Val
            180                 185                 190

Asp Gly Asp Leu Cys Glu Thr Asn Ala Glu Trp Ile Val Glu Asp Phe
        195                 200                 205

Glu Ser Asn Gly Ser Leu Val Pro Phe Val Asn Phe Gly Thr Val Thr
    210                 215                 220

Phe Thr Gly Ala Lys Ala Thr Thr Gly Gly Ser Ser Val Gly Pro Ser
225                 230                 235                 240

Gly Ala Thr Leu Met Asp Ile Lys Gln Gly Ser Ser Val Leu Thr Ser
                245                 250                 255

Ser Ser Val Ser Gly Asn Ser Val Ser Val Ser Tyr Val
            260                 265
```

<210> 137
<211> 269
<212> PRT
<213> Aspergillus fumigatus

<400> 137

```
Met Lys Phe Thr Ser Val Leu Ala Ser Gly Leu Leu Ala Thr Ala Ala
1               5                   10                  15

Ile Ala Ala Pro Leu Thr Glu Gln Arg Gln Ala Arg His Ala Arg Arg
            20                  25                  30

Leu Ala Arg Thr Ala Asn Arg Ser Ser His Pro Pro Tyr Lys Pro Gly
        35                  40                  45

Thr Ser Glu Val Ile Lys Leu Ser Asn Thr Thr Gln Val Glu Tyr Ser
    50                  55                  60

Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ala Val
65                  70                  75                  80

Thr Gly Glu Phe Val Val Pro Thr Pro Ser Val Pro Ser Gly Gly Ser
                85                  90                  95

Ser Ser Lys Gln Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp
            100                 105                 110

Thr Cys Ser Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Ile Gln
        115                 120                 125

Gly Ser Ser Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr
    130                 135                 140

Ala Tyr Asp Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Thr Ile Arg
145                 150                 155                 160

Val Thr Val Asp Ala Thr Ser Lys Thr Ala Gly Thr Ala Thr Val Glu
                165                 170                 175

Asn Val Thr Lys Gly Lys Thr Val Thr His Thr Phe Thr Gly Gly Val
            180                 185                 190

Asp Gly Asn Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp Phe
        195                 200                 205

Glu Ser Asn Gly Ser Leu Val Pro Phe Ala Asn Phe Gly Thr Val Thr
    210                 215                 220

Phe Thr Gly Ala Gln Ala Thr Asp Gly Gly Ser Thr Val Gly Pro Ser
225                 230                 235                 240
```

```
Gly Ala Thr Leu Ile Asp Ile Gln Gln Ser Gly Lys Val Leu Thr Ser
                245                 250                 255


Val Ser Thr Ser Ser Ser Ser Val Thr Val Lys Tyr Val
            260                 265


<210>  138
<211>  262
<212>  PRT
<213>  Penicillium marneffei

<400>  138

Met Lys Ser Ser Val Leu Ser Thr Leu Leu Leu Ala Gly Leu Ala Val
1               5                   10                  15


Ala Ala Pro Ser Thr Gln Lys Gly Leu Ala Arg Arg Ala Ala Arg Arg
            20                  25                  30


Ser Asn Pro Ala Tyr Leu Pro Asn Ser Phe Gly Val Glu Gln Leu Asn
        35                  40                  45


Ile Thr Gly Thr Lys His Val Glu Tyr Ser Ser Asn Trp Ser Gly Ala
    50                  55                  60


Val Leu Ile Gly Thr Gly Tyr Ser Ala Val Thr Ala Glu Phe Thr Val
65                  70                  75                  80


Pro Thr Pro His Ile Pro Ser Gly Gly Ser Ser Gly Thr Gln Tyr Cys
                85                  90                  95


Ala Ser Ala Trp Val Gly Leu Asp Gly Asp Thr Cys Gly Thr Ser Ile
            100                 105                 110


Leu Gln Thr Gly Val Asp Phe Cys Val Gln Gly Ser Ser Val Ser Tyr
        115                 120                 125


Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp Phe Thr Gly
    130                 135                 140


Ile Ser Ile Ser Ala Gly Asp Leu Ile Lys Ile Thr Val Thr Ala Thr
145                 150                 155                 160


Ser Thr Ser Ser Gly Ser Ala Val Val Gln Asn Val Ser Lys Gly Thr
                165                 170                 175


Thr Val Thr His Asn Phe Ser Gly Glu Ser Asp Lys Leu Cys Glu Tyr
            180                 185                 190


Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Glu Gly Gly Ser Leu Val
        195                 200                 205
```

```
Pro Phe Ala Asn Phe Gly Thr Val Thr Phe Ser Gly Ala Lys Ala Thr
    210                 215                 220

Lys Ser Gly Ser Ser Val Asp Thr Thr Gly Ala Thr Ile Ile Asp Ile
225                 230                 235                 240

Glu Gln Asn Ser Ser Val Leu Thr Ser Val Thr Ala Ser Gly Ser Thr
                245                 250                 255

Val Thr Val Lys Tyr Val
            260


<210>  139
<211>  274
<212>  PRT
<213>  Talaromyces stipitatus

<400>  139

Met Lys Ser Ile Val Leu Ser Leu Leu Ile Leu Ala Gly Leu Thr Ala
1               5                   10                  15

Ala Ala Pro Leu Thr Glu Lys Arg Leu Ala Arg Arg Ala Ala Gly Thr
            20                  25                  30

Arg Arg Ser Ser Pro Pro Tyr Val Pro Asn Ser Tyr Gly Val Glu Gln
        35                  40                  45

Leu Asn Ile Thr Asn Ser Lys Asn Val Glu Tyr Ser Glu Asn Trp Ala
    50                  55                  60

Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ala Val Thr Ala Glu Phe
65                  70                  75                  80

Thr Val Pro Thr Pro Thr Ala Pro Gly Gly Gly Asn Thr Glu Tyr Cys
                85                  90                  95

Ala Ser Ala Trp Val Gly Leu Asp Gly Asp Thr Cys Asp Ser Ser Ile
            100                 105                 110

Leu Gln Thr Gly Val Asp Phe Cys Val Gln Gly Gly Asp Val Ser Tyr
        115                 120                 125

Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp Phe Ser Gly
    130                 135                 140

Ile Ser Ile Ser Ala Gly Asp Val Met Lys Ile Thr Val Thr Ala Thr
145                 150                 155                 160

Ser Thr Ser Ser Gly Ser Ala Val Val Glu Asn Val Ser Thr Gly Arg
                165                 170                 175

Thr Val Thr His Ser Phe Ser Gly Glu Ser Asp Arg Leu Cys Glu Tyr
```

180 185 190

Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Glu Gly Asp Ser Leu Val
195 200 205

Pro Phe Ala Asn Phe Gly Thr Val Thr Phe Thr Asn Ala Val Ala Thr
210 215 220

His Asn Gly Ala Gly Val Gly Thr Ser Gly Ala Thr Ile Ile Asp Ile
225 230 235 240

Glu Gln Asp Ser Gly Val Leu Thr Ser Val Ser Ala Ser Gly Asn Thr
245 250 255

Val Thr Val Asn Met Lys His Thr Asn Thr Asp Ile His Asp Asp Gly
260 265 270

Gly Gly

<210> 140
<211> 274
<212> PRT
<213> Grosmannia clavigera

<400> 140

Met Lys Leu Leu Asn Val Ala Gly Ala Leu Leu Phe Ala Asn Ala Ala
1 5 10 15

Leu Gly Ala Arg Phe Thr Glu Arg Arg Arg Ala Arg Leu Ala Gln Arg
20 25 30

Ala Pro Gly Ser Val Ser Arg Thr Gly Phe Gly Gln Pro Leu Ile Ala
35 40 45

Ala Asp Gly Leu Asp Ile Asp Glu Asp Ala Ala Thr Asn Gly Thr Ala
50 55 60

Asp Val Asp Tyr Ser Ser Asn Trp Ser Gly Ala Val Leu Ile Ser Thr
65 70 75 80

Gly Tyr Lys Ser Val Thr Gly Thr Phe Val Val Pro Thr Pro Lys Ala
85 90 95

Pro Thr Gly Gly Ser Ser Ser Thr Gln Tyr Ala Ala Ser Ala Trp Val
100 105 110

Gly Ile Asp Gly Asp Thr Ala Ser Asn Ser Ile Leu Gln Thr Gly Ile
115 120 125

Asp Phe Tyr Ile Glu Asp Gly Glu Ala Ser Tyr Asp Ala Trp Tyr Glu
130 135 140

```
Trp Tyr Pro Asp Tyr Ala Tyr Thr Phe Ser Gly Phe Ser Ile Ser Ala
145                 150                 155                 160

Gly Asp Thr Ile Thr Val Thr Val Thr Ala Ser Ser Thr Ser Ser Gly
                165                 170                 175

Lys Ala Val Ile Lys Asn Ala Ser Thr Gly Lys Ser Val Thr His Ser
            180                 185                 190

Phe Ser Ser Glu Ser Asn Thr Leu Glu Glu Leu Asn Ala Glu Trp Ile
        195                 200                 205

Val Glu Asp Phe Glu Glu Asp Gly Gly Leu Val Pro Phe Ala Asn Phe
    210                 215                 220

Gly Thr Val Thr Phe Thr Asp Ala Thr Ala Ile Gly Ser Asp Gly Thr
225                 230                 235                 240

Val Gly Pro Asp Gly Ala Thr Leu Ile Asp Ile Arg Gln Ser Gly Lys
                245                 250                 255

Val Leu Thr Ser Ala Ser Leu Ser Gly Gly Asp Val Val Val Ser Tyr
            260                 265                 270

Val Gly
```

<210> 141
<211> 269
<212> PRT
<213> Neosartorya fischeri

<400> 141

```
Met Lys Phe Thr Ser Val Leu Thr Ser Gly Leu Leu Ala Thr Ala Thr
1               5                   10                  15

Ile Ala Ala Pro Leu Thr Glu Gln Arg Gln Ala Arg His Ala Arg Arg
            20                  25                  30

Met Ala Arg Asn Ser Asn Arg Ser Ser His Pro Pro Tyr Lys Pro Gly
        35                  40                  45

Thr Ser Glu Val Ile Lys Leu Ser Asn Thr Thr Gln Val Glu Tyr Ser
    50                  55                  60

Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Ser Gly Tyr Thr Ala Val
65                  70                  75                  80

Thr Gly Glu Phe Val Val Pro Thr Pro His Ala Pro Ser Gly Gly Ser
                85                  90                  95
```

```
Ser Asn Glu Gln Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp
            100                 105                 110

Thr Cys Ser Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Ile Gln
        115                 120                 125

Gly Gly Ser Val Ser Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr
    130                 135                 140

Ala Tyr Asp Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Thr Ile Arg
145                 150                 155                 160

Val Thr Val Asp Ala Thr Ser Lys Thr Ala Gly Thr Ala Thr Val Glu
                165                 170                 175

Asn Val Thr Lys Gly Lys Thr Val Thr His Thr Phe Thr Gly Gly Val
            180                 185                 190

Asp Gly Asn Leu Cys Glu Tyr Asn Ala Glu Trp Ile Val Glu Asp Phe
        195                 200                 205

Glu Ser Asn Gly Ser Leu Val Pro Phe Ala Asn Phe Gly Thr Val Thr
    210                 215                 220

Phe Thr Gly Ala Gln Ala Thr Asp Gly Gly Ser Thr Val Gly Pro Ser
225                 230                 235                 240

Gly Ala Thr Leu Met Asp Ile Glu Gln Asn Gly Gln Val Leu Thr Ser
                245                 250                 255

Val Ser Ser Ser Ser Ser Ser Val Thr Val Lys Tyr Val
            260                 265


<210>  142
<211>  270
<212>  PRT
<213>  Penicillium marneffei

<400>  142

Met Ile Phe Ser Ile Lys Thr Leu Val Pro Leu Leu Leu Ala Gly Thr
1               5                   10                  15

Ala Ile Ala Ser Pro Ala Thr Ile Pro Ala Ala Arg Arg Phe Arg Gly
            20                  25                  30

Gly Ser Asp Ala Ser Phe Ala Asn Phe Thr Ser Ser Ala Asp Glu Ala
        35                  40                  45

Ser Ala Ala Thr Leu Gly Thr Tyr Thr Phe Thr Asn Trp Ala Gly Ala
    50                  55                  60
```

```
Phe Leu Arg Asn Thr Ala Val Thr Ser Val Thr Gly Thr Phe Val Ile
65                  70                  75                  80

Pro Lys Pro Ser Met Pro Ala Gly Gly Asn Ser Gly Thr Ser Tyr Cys
                85                  90                  95

Gly Cys Ala Trp Val Gly Leu Asp Gly Ile Ser Asn Phe Cys Pro Asn
            100                 105                 110

Gly Gly Leu Ile Gln Ala Gly Val Asn Trp Cys Val Glu Asn Gly Val
        115                 120                 125

Thr Ser Phe Ala Ala Trp His Glu Trp Trp Pro Ala Glu Ala Met Gln
    130                 135                 140

Tyr Trp Asp Asn Val Ser Val Ser Ala Gly Asp Ser Ile Thr Val Thr
145                 150                 155                 160

Ile Thr Ala Ser Asn Thr Glu Ala Gly Ser Ala Thr Leu Ile Asn Asn
                165                 170                 175

Thr Thr Gly Gln Arg Val Arg Phe Val Trp Thr Tyr Lys Thr Pro Ser
            180                 185                 190

Leu Cys Glu Ala Thr Ala Glu Trp Ile Val Glu Asp Tyr Ser Ile Gly
        195                 200                 205

Asn Asn Leu Val Ala Phe Ala Asp Tyr Gly Ser Val Thr Phe Thr Gly
    210                 215                 220

Asn Ser Ala Val Ile His Gly Ala Thr Thr Ser Asp Leu Ser Asn Ser
225                 230                 235                 240

Tyr Ile Ala Asn Met Val Ser Val Ser Asn Pro Ser Gln Val Ile Ser
                245                 250                 255

Ala Ser Thr Val Asn Gly Asn Ala Ile Thr Val Val Tyr Gln
            260                 265                 270


<210>  143
<211>  270
<212>  PRT
<213>  Penicillium chrysogenum

<400>  143

Met Lys Phe Ser Thr Thr Ile Leu Ser Ala Ala Leu Leu Thr Ala Ser
1               5                   10                  15

Ala Ile Ala Ala Pro Leu Thr Glu Arg Arg Ala Ala Arg His Ala Ala
            20                  25                  30

Arg Ala Ala Asp Arg Ala Gly Arg Ile Ser Arg Pro Ala Ala Lys Gln
```

35 40 45

Asp Thr Leu Glu Leu Val Ser Leu Asn Gly Thr Ser His Ala Gln Tyr
50 55 60

Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ser
65 70 75 80

Val Thr Gly Glu Phe Thr Val Pro Lys Pro Asn Leu Pro Ser Asp Ala
85 90 95

Ser Ser Gly Gln Gln Ser Cys Ala Ser Ala Trp Val Gly Ile Asp Gly
100 105 110

Asp Thr Cys Ser Ser Ala Ile Leu Gln Thr Gly Ile Asp Phe Cys Ile
115 120 125

Gln Gly Gly Glu Val Ser Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Asp
130 135 140

Tyr Ala His Asp Phe Ser Gly Ile Asp Ile Ser Thr Gly Asp Val Ile
145 150 155 160

Lys Leu Thr Val Thr Ala Thr Ser Lys Ser Ser Gly Ser Ala Val Ile
165 170 175

Asp Asn Val Thr Thr Gly Lys Ser Val Thr His Lys Phe Ser Gly Val
180 185 190

Asp Asp Gly Asp Leu Cys Glu Thr Asn Ala Glu Trp Ile Val Glu Asp
195 200 205

Phe Glu Ser Gly Gly Gln Leu Val Pro Phe Thr Asn Phe Gly Thr Val
210 215 220

Thr Phe Thr Lys Ala Glu Ala Thr Ser Gly Gly Lys Ser Val Gly Pro
225 230 235 240

Ser Gly Ala Thr Leu Phe Glu Ile Arg Gln Ser Lys Lys Val Leu Thr
245 250 255

Lys Ser Ser Val Thr Gly Asn Ser Val Thr Val Ser Tyr Val
260 265 270

<210> 144
<211> 282
<212> PRT
<213> Aspergillus niger

<400> 144

Met Lys Phe Ser Thr Ile Leu Thr Gly Ser Leu Phe Ala Thr Ala Ala
1 5 10 15

```
Leu Ala Ala Pro Leu Thr Glu Lys Arg Arg Ala Arg Lys Glu Ala Arg
            20                  25                  30

Ala Ala Gly Lys Arg His Ser Asn Pro Pro Tyr Ile Pro Gly Ser Asp
        35                  40                  45

Lys Glu Ile Leu Lys Leu Asn Gly Thr Thr Asn Glu Glu Tyr Ser Ser
    50                  55                  60

Asn Trp Ala Gly Ala Val Leu Ile Gly Asp Gly Tyr Thr Lys Val Thr
65                  70                  75                  80

Gly Glu Phe Thr Val Pro Ser Val Ser Ala Gly Ser Ser Gly Ser Ser
                85                  90                  95

Gly Tyr Gly Gly Gly Tyr Gly Tyr Trp Lys Asn Lys Arg Gln Ser Glu
            100                 105                 110

Glu Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Glu
        115                 120                 125

Thr Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Tyr Glu Asp Gly Gln
    130                 135                 140

Thr Ser Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp
145                 150                 155                 160

Phe Ser Asp Ile Thr Ile Ser Glu Gly Asp Ser Ile Lys Val Thr Val
                165                 170                 175

Glu Ala Thr Ser Lys Ser Ser Gly Ser Ala Thr Val Glu Asn Leu Thr
            180                 185                 190

Thr Gly Gln Ser Val Thr His Thr Phe Ser Gly Asn Val Glu Gly Asp
        195                 200                 205

Leu Cys Glu Thr Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Ser Gly
    210                 215                 220

Asp Ser Leu Val Ala Phe Ala Asp Phe Gly Ser Val Thr Phe Thr Asn
225                 230                 235                 240

Ala Glu Ala Thr Ser Gly Gly Ser Thr Val Gly Pro Ser Asp Ala Thr
                245                 250                 255

Val Met Asp Ile Glu Gln Asp Gly Ser Val Leu Thr Glu Thr Ser Val
            260                 265                 270

Ser Gly Asp Ser Val Thr Val Thr Tyr Val
        275                 280
```

<210> 145
<211> 612
<212> PRT
<213> Trichoderma reesei

<400> 145

```
Met Ala Lys Leu Ser Thr Leu Arg Leu Ala Ser Leu Leu Ser Leu Val
1               5                   10                  15

Ser Val Gln Val Ser Ala Ser Val His Leu Leu Glu Ser Leu Glu Lys
            20                  25                  30

Leu Pro His Gly Trp Lys Ala Ala Glu Thr Pro Ser Pro Ser Ser Gln
        35                  40                  45

Ile Val Leu Gln Val Ala Leu Thr Gln Gln Asn Ile Asp Gln Leu Glu
    50                  55                  60

Ser Arg Leu Ala Ala Val Ser Thr Pro Thr Ser Ser Thr Tyr Gly Lys
65                  70                  75                  80

Tyr Leu Asp Val Asp Glu Ile Asn Ser Ile Phe Ala Pro Ser Asp Ala
                85                  90                  95

Ser Ser Ser Ala Val Glu Ser Trp Leu Gln Ser His Gly Val Thr Ser
            100                 105                 110

Tyr Thr Lys Gln Gly Ser Ser Ile Trp Phe Gln Thr Asn Ile Ser Thr
        115                 120                 125

Ala Asn Ala Met Leu Ser Thr Asn Phe His Thr Tyr Ser Asp Leu Thr
    130                 135                 140

Gly Ala Lys Lys Val Arg Thr Leu Lys Tyr Ser Ile Pro Glu Ser Leu
145                 150                 155                 160

Ile Gly His Val Asp Leu Ile Ser Pro Thr Thr Tyr Phe Gly Thr Thr
                165                 170                 175

Lys Ala Met Arg Lys Leu Lys Ser Ser Gly Val Ser Pro Ala Ala Asp
            180                 185                 190

Ala Leu Ala Ala Arg Gln Glu Pro Ser Ser Cys Lys Gly Thr Leu Val
        195                 200                 205

Phe Glu Gly Glu Thr Phe Asn Val Phe Gln Pro Asp Cys Leu Arg Thr
    210                 215                 220

Glu Tyr Ser Val Asp Gly Tyr Thr Pro Ser Val Lys Ser Gly Ser Arg
225                 230                 235                 240
```

```
Ile Gly Phe Gly Ser Phe Leu Asn Glu Ser Ala Ser Phe Ala Asp Gln
                245                 250                 255

Ala Leu Phe Glu Lys His Phe Asn Ile Pro Ser Gln Asn Phe Ser Val
            260                 265                 270

Val Leu Ile Asn Gly Gly Thr Asp Leu Pro Gln Pro Pro Ser Asp Ala
        275                 280                 285

Asn Asp Gly Glu Ala Asn Leu Asp Ala Gln Thr Ile Leu Thr Ile Ala
    290                 295                 300

His Pro Leu Pro Ile Thr Glu Phe Ile Thr Ala Gly Ser Pro Pro Tyr
305                 310                 315                 320

Phe Pro Asp Pro Val Glu Pro Ala Gly Thr Pro Asn Glu Asn Glu Pro
                325                 330                 335

Tyr Leu Gln Tyr Tyr Glu Phe Leu Leu Ser Lys Ser Asn Ala Glu Ile
            340                 345                 350

Pro Gln Val Ile Thr Asn Ser Tyr Gly Asp Glu Glu Gln Thr Val Pro
        355                 360                 365

Arg Ser Tyr Ala Val Arg Val Cys Asn Leu Ile Gly Leu Leu Gly Leu
    370                 375                 380

Arg Gly Ile Ser Val Leu His Ser Ser Gly Asp Glu Gly Val Gly Ala
385                 390                 395                 400

Ser Cys Val Ala Thr Asn Ser Thr Thr Pro Gln Phe Asn Pro Ile Phe
                405                 410                 415

Pro Ala Thr Cys Pro Tyr Val Thr Ser Val Gly Gly Thr Val Ser Phe
            420                 425                 430

Asn Pro Glu Val Ala Trp Ala Gly Ser Ser Gly Gly Phe Ser Tyr Tyr
        435                 440                 445

Phe Ser Arg Pro Trp Tyr Gln Gln Glu Ala Val Gly Thr Tyr Leu Glu
    450                 455                 460

Lys Tyr Val Ser Ala Glu Thr Lys Lys Tyr Tyr Gly Pro Tyr Val Asp
465                 470                 475                 480

Phe Ser Gly Arg Gly Phe Pro Asp Val Ala Ala His Ser Val Ser Pro
                485                 490                 495

Asp Tyr Pro Val Phe Gln Gly Gly Glu Leu Thr Pro Ser Gly Gly Thr
            500                 505                 510
```

```
Ser Ala Ala Ser Pro Val Val Ala Ala Ile Val Ala Leu Leu Asn Asp
        515                 520                 525

Ala Arg Leu Arg Glu Gly Lys Pro Thr Leu Gly Phe Leu Asn Pro Leu
    530                 535                 540

Ile Tyr Leu His Ala Ser Lys Gly Phe Thr Asp Ile Thr Ser Gly Gln
545                 550                 555                 560

Ser Glu Gly Cys Asn Gly Asn Asn Thr Gln Thr Gly Ser Pro Leu Pro
                565                 570                 575

Gly Ala Gly Phe Ile Ala Gly Ala His Trp Asn Ala Thr Lys Gly Trp
            580                 585                 590

Asp Pro Thr Thr Gly Phe Gly Val Pro Asn Leu Lys Lys Leu Leu Ala
        595                 600                 605

Leu Val Arg Phe
    610
```

<210> 146
<211> 609
<212> PRT
<213> Trichoderma atroviride

<400> 146

```
Met Ala Lys Leu Thr Ala Leu Ala Gly Leu Leu Thr Leu Ala Ser Val
1               5                   10                  15

Gln Ala Asn Ala Ala Val Leu Leu Asp Ser Leu Asp Lys Val Pro Val
            20                  25                  30

Gly Trp Gln Ala Ala Ser Ala Pro Ala Pro Ser Ser Lys Ile Thr Leu
        35                  40                  45

Gln Val Ala Leu Thr Gln Gln Asn Ile Asp Gln Leu Glu Ser Lys Leu
    50                  55                  60

Ala Ala Val Ser Thr Pro Asn Ser Ser Asn Tyr Gly Lys Tyr Leu Asp
65                  70                  75                  80

Val Asp Glu Ile Asn Gln Ile Phe Ala Pro Ser Ser Ala Ser Thr Ala
                85                  90                  95

Ala Val Glu Ser Trp Leu Lys Ser Tyr Gly Val Asp Tyr Lys Val Gln
            100                 105                 110

Gly Ser Ser Ile Trp Phe Gln Thr Asp Val Ser Thr Ala Asn Lys Met
        115                 120                 125
```

```
Leu Ser Thr Asn Phe His Thr Tyr Thr Asp Ser Val Gly Ala Lys Lys
    130                 135                 140

Val Arg Thr Leu Gln Tyr Ser Val Pro Glu Thr Leu Ala Asp His Ile
145                 150                 155                 160

Asp Leu Ile Ser Pro Thr Thr Tyr Phe Gly Thr Ser Lys Ala Met Arg
                165                 170                 175

Ala Leu Lys Ile Gln Asn Ala Ala Ser Ala Val Ser Pro Leu Ala Ala
            180                 185                 190

Arg Gln Glu Pro Ser Ser Cys Lys Gly Thr Ile Glu Phe Glu Asn Arg
        195                 200                 205

Thr Phe Asn Val Phe Gln Pro Asp Cys Leu Arg Thr Glu Tyr Ser Val
    210                 215                 220

Asn Gly Tyr Lys Pro Ser Ala Lys Ser Gly Ser Arg Ile Gly Phe Gly
225                 230                 235                 240

Ser Phe Leu Asn Gln Ser Ala Ser Ser Ser Asp Leu Ala Leu Phe Glu
                245                 250                 255

Lys His Phe Gly Phe Ala Ser Gln Gly Phe Ser Val Glu Leu Ile Asn
            260                 265                 270

Gly Gly Ser Asn Pro Gln Pro Pro Thr Asp Ala Asn Asp Gly Glu Ala
        275                 280                 285

Asn Leu Asp Ala Gln Asn Ile Val Ser Phe Val Gln Pro Leu Pro Ile
    290                 295                 300

Thr Glu Phe Ile Ala Gly Gly Thr Ala Pro Tyr Phe Pro Asp Pro Val
305                 310                 315                 320

Glu Pro Ala Gly Thr Pro Asp Glu Asn Glu Pro Tyr Leu Glu Tyr Tyr
                325                 330                 335

Glu Tyr Leu Leu Ser Lys Ser Asn Lys Glu Leu Pro Gln Val Ile Thr
            340                 345                 350

Asn Ser Tyr Gly Asp Glu Glu Gln Thr Val Pro Gln Ala Tyr Ala Val
        355                 360                 365

Arg Val Cys Asn Leu Ile Gly Leu Met Gly Leu Arg Gly Ile Ser Ile
    370                 375                 380

Leu Glu Ser Ser Gly Asp Glu Gly Val Gly Ala Ser Cys Leu Ala Thr
385                 390                 395                 400
```

```
Asn Ser Thr Thr Thr Pro Gln Phe Asn Pro Ile Phe Pro Ala Thr Cys
                405                 410                 415

Pro Tyr Val Thr Ser Val Gly Gly Thr Val Ser Phe Asn Pro Glu Val
            420                 425                 430

Ala Trp Asp Gly Ser Ser Gly Gly Phe Ser Tyr Tyr Phe Ser Arg Pro
        435                 440                 445

Trp Tyr Gln Glu Ala Ala Val Gly Thr Tyr Leu Asn Lys Tyr Val Ser
    450                 455                 460

Glu Glu Thr Lys Glu Tyr Tyr Lys Ser Tyr Val Asp Phe Ser Gly Arg
465                 470                 475                 480

Gly Phe Pro Asp Val Ala Ala His Ser Val Ser Pro Asp Tyr Pro Val
                485                 490                 495

Phe Gln Gly Gly Glu Leu Thr Pro Ser Gly Gly Thr Ser Ala Ala Ser
            500                 505                 510

Pro Ile Val Ala Ser Val Ile Ala Leu Leu Asn Asp Ala Arg Leu Arg
        515                 520                 525

Ala Gly Lys Pro Ala Leu Gly Phe Leu Asn Pro Leu Ile Tyr Gly Tyr
    530                 535                 540

Ala Tyr Lys Gly Phe Thr Asp Ile Thr Ser Gly Gln Ala Val Gly Cys
545                 550                 555                 560

Asn Gly Asn Asn Thr Gln Thr Gly Gly Pro Leu Pro Gly Ala Gly Val
                565                 570                 575

Ile Pro Gly Ala Phe Trp Asn Ala Thr Lys Gly Trp Asp Pro Thr Thr
            580                 585                 590

Gly Phe Gly Val Pro Asn Phe Lys Lys Leu Leu Glu Leu Val Arg Tyr
        595                 600                 605

Ile
```

<210> 147
<211> 612
<212> PRT
<213> Trichoderma virens

<400> 147

```
Met Pro Lys Ser Thr Ala Leu Arg Leu Val Ser Leu Leu Ser Leu Ala
1               5                   10                  15

Ser Val Pro Ile Ser Ala Ser Val Leu Val Glu Ser Leu Glu Lys Leu
```

```
            20                  25                  30

Pro His Gly Trp Lys Ala Ala Ser Ala Pro Ser Pro Ser Ser Gln Ile
        35                  40                  45

Thr Leu Gln Val Ala Leu Thr Gln Gln Asn Ile Asp Gln Leu Glu Ser
    50                  55                  60

Arg Leu Ala Ala Val Ser Thr Pro Asn Ser Lys Thr Tyr Gly Asn Tyr
65                  70                  75                  80

Leu Asp Leu Asp Glu Ile Asn Glu Ile Phe Ala Pro Ser Asp Ala Ser
                85                  90                  95

Ser Ala Ala Val Glu Ser Trp Leu His Ser His Gly Val Thr Lys Tyr
            100                 105                 110

Thr Lys Gln Gly Ser Ser Ile Trp Phe Gln Thr Glu Val Ser Thr Ala
        115                 120                 125

Asn Ala Met Leu Ser Thr Asn Phe His Thr Tyr Ser Asp Ala Ala Gly
    130                 135                 140

Val Lys Lys Leu Arg Thr Leu Gln Tyr Ser Ile Pro Glu Ser Leu Val
145                 150                 155                 160

Gly His Val Asp Leu Ile Ser Pro Thr Thr Tyr Phe Gly Thr Ser Asn
                165                 170                 175

Ala Met Arg Ala Leu Arg Ser Lys Ser Val Ala Ser Val Ala Gln Ser
            180                 185                 190

Val Ala Ala Arg Gln Glu Pro Ser Ser Cys Lys Gly Thr Leu Val Phe
        195                 200                 205

Glu Gly Arg Thr Phe Asn Val Phe Gln Pro Asp Cys Leu Arg Thr Glu
    210                 215                 220

Tyr Asn Val Asn Gly Tyr Thr Pro Ser Ala Lys Ser Gly Ser Arg Ile
225                 230                 235                 240

Gly Phe Gly Ser Phe Leu Asn Gln Ser Ala Ser Phe Ser Asp Leu Ala
                245                 250                 255

Leu Phe Glu Lys His Phe Gly Phe Ser Ser Gln Asn Phe Ser Val Val
            260                 265                 270

Leu Ile Asn Gly Gly Thr Asp Leu Pro Gln Pro Pro Ser Asp Asp Asn
        275                 280                 285

Asp Gly Glu Ala Asn Leu Asp Val Gln Asn Ile Leu Thr Ile Ala His
```

290 295 300

Pro Leu Pro Ile Thr Glu Phe Ile Thr Ala Gly Ser Pro Pro Tyr Phe
305 310 315 320

Pro Asp Pro Val Glu Pro Ala Gly Thr Pro Asp Glu Asn Glu Pro Tyr
325 330 335

Leu Gln Tyr Phe Glu Tyr Leu Leu Ser Lys Pro Asn Arg Asp Leu Pro
340 345 350

Gln Val Ile Thr Asn Ser Tyr Gly Asp Glu Glu Gln Thr Val Pro Gln
355 360 365

Ala Tyr Ala Val Arg Val Cys Asn Leu Ile Gly Leu Met Gly Leu Arg
370 375 380

Gly Ile Ser Ile Leu Glu Ser Ser Gly Asp Glu Gly Val Gly Ala Ser
385 390 395 400

Cys Val Ala Thr Asn Ser Thr Thr Pro Gln Phe Asn Pro Ile Phe Pro
405 410 415

Ala Thr Cys Pro Tyr Val Thr Ser Val Gly Gly Thr Val Asn Phe Asn
420 425 430

Pro Glu Val Ala Trp Asp Gly Ser Ser Gly Gly Phe Ser Tyr Tyr Phe
435 440 445

Ser Arg Pro Trp Tyr Gln Glu Glu Ala Val Gly Asn Tyr Leu Glu Lys
450 455 460

His Val Ser Ala Glu Thr Lys Lys Tyr Tyr Gly Pro Tyr Val Asp Phe
465 470 475 480

Ser Gly Arg Gly Phe Pro Asp Val Ala Ala His Ser Val Ser Pro Asp
485 490 495

Tyr Pro Val Phe Gln Gly Gly Gln Leu Thr Pro Ser Gly Gly Thr Ser
500 505 510

Ala Ala Ser Pro Val Val Ala Ser Ile Ile Ala Leu Leu Asn Asp Ala
515 520 525

Arg Leu Arg Glu Gly Lys Pro Thr Leu Gly Phe Leu Asn Pro Leu Ile
530 535 540

Tyr Gln Tyr Ala Tyr Lys Gly Phe Thr Asp Ile Thr Ser Gly Gln Ser
545 550 555 560

Asp Gly Cys Asn Gly Asn Asn Thr Gln Thr Asp Ala Pro Leu Pro Gly

565 570 575

Ala Gly Val Val Leu Gly Ala His Trp Asn Ala Thr Lys Gly Trp Asp
580 585 590

Pro Thr Thr Gly Phe Gly Val Pro Asn Phe Lys Lys Leu Leu Glu Leu
595 600 605

Ile Arg Tyr Ile
610

<210> 148
<211> 594
<212> PRT
<213> Aspergillus fumigatus

<400> 148

Met Leu Ser Ser Thr Leu Tyr Ala Gly Trp Leu Leu Ser Leu Ala Ala
1 5 10 15

Pro Ala Leu Cys Val Val Gln Glu Lys Leu Ser Ala Val Pro Ser Gly
20 25 30

Trp Thr Leu Ile Glu Asp Ala Ser Glu Ser Asp Thr Ile Thr Leu Ser
35 40 45

Ile Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Ser Lys Leu Thr
50 55 60

Thr Leu Ala Thr Pro Gly Asn Pro Glu Tyr Gly Lys Trp Leu Asp Gln
65 70 75 80

Ser Asp Ile Glu Ser Leu Phe Pro Thr Ala Ser Asp Asp Ala Val Leu
85 90 95

Gln Trp Leu Lys Ala Ala Gly Ile Thr Gln Val Ser Arg Gln Gly Ser
100 105 110

Leu Val Asn Phe Ala Thr Thr Val Gly Thr Ala Asn Lys Leu Phe Asp
115 120 125

Thr Lys Phe Ser Tyr Tyr Arg Asn Gly Ala Ser Gln Lys Leu Arg Thr
130 135 140

Thr Gln Tyr Ser Ile Pro Asp His Leu Thr Glu Ser Ile Asp Leu Ile
145 150 155 160

Ala Pro Thr Val Phe Phe Gly Lys Glu Gln Asn Ser Ala Leu Ser Ser
165 170 175

His Ala Val Lys Leu Pro Ala Leu Pro Arg Arg Ala Ala Thr Asn Ser
180 185 190

```
Ser Cys Ala Asn Leu Ile Thr Pro Asp Cys Leu Val Glu Met Tyr Asn
        195                 200                 205

Leu Gly Asp Tyr Lys Pro Asp Ala Ser Ser Gly Ser Arg Val Gly Phe
    210                 215                 220

Gly Ser Phe Leu Asn Glu Ser Ala Asn Tyr Ala Asp Leu Ala Ala Tyr
225                 230                 235                 240

Glu Gln Leu Phe Asn Ile Pro Pro Gln Asn Phe Ser Val Glu Leu Ile
                245                 250                 255

Asn Arg Gly Val Asn Asp Gln Asn Trp Ala Thr Ala Ser Leu Gly Glu
            260                 265                 270

Ala Asn Leu Asp Val Glu Leu Ile Val Ala Val Ser His Pro Leu Pro
        275                 280                 285

Val Val Glu Phe Ile Thr Gly Gly Ser Pro Pro Phe Val Pro Asn Ala
    290                 295                 300

Asp Glu Pro Thr Ala Ala Asp Asn Gln Asn Glu Pro Tyr Leu Gln Tyr
305                 310                 315                 320

Tyr Glu Tyr Leu Leu Ser Lys Pro Asn Ser His Leu Pro Gln Val Ile
                325                 330                 335

Ser Asn Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro Glu Tyr Tyr Ala
            340                 345                 350

Arg Arg Val Cys Asn Leu Ile Gly Leu Met Gly Leu Arg Gly Ile Thr
        355                 360                 365

Val Leu Glu Ser Ser Gly Asp Thr Gly Ile Gly Ser Ala Cys Met Ser
    370                 375                 380

Asn Asp Gly Thr Asn Lys Pro Gln Phe Thr Pro Thr Phe Pro Gly Thr
385                 390                 395                 400

Cys Pro Phe Ile Thr Ala Val Gly Gly Thr Gln Ser Tyr Ala Pro Glu
                405                 410                 415

Val Ala Trp Asp Gly Ser Ser Gly Gly Phe Ser Asn Tyr Phe Ser Arg
            420                 425                 430

Pro Trp Tyr Gln Ser Phe Ala Val Asp Asn Tyr Leu Asn Asn His Ile
        435                 440                 445

Thr Lys Asp Thr Lys Lys Tyr Tyr Ser Gln Tyr Thr Asn Phe Lys Gly
    450                 455                 460
```

```
Arg Gly Phe Pro Asp Val Ser Ala His Ser Leu Thr Pro Tyr Tyr Glu
465                 470                 475                 480

Val Val Leu Thr Gly Lys His Tyr Lys Ser Gly Gly Thr Ser Ala Ala
                485                 490                 495

Ser Pro Val Phe Ala Gly Ile Val Gly Leu Leu Asn Asp Ala Arg Leu
            500                 505                 510

Arg Ala Gly Lys Ser Thr Leu Gly Phe Leu Asn Pro Leu Leu Tyr Ser
        515                 520                 525

Ile Leu Ala Glu Gly Phe Thr Asp Ile Thr Ala Gly Ser Ser Ile Gly
    530                 535                 540

Cys Asn Gly Ile Asn Pro Gln Thr Gly Lys Pro Val Pro Gly Gly Gly
545                 550                 555                 560

Ile Ile Pro Tyr Ala His Trp Asn Ala Thr Ala Gly Trp Asp Pro Val
                565                 570                 575

Thr Gly Leu Gly Val Pro Asp Phe Met Lys Leu Lys Glu Leu Val Leu
            580                 585                 590

Ser Leu
```

<210> 149
<211> 594
<212> PRT
<213> Aspergillus oryzae

<400> 149

```
Met Arg Ser Ser Phe Leu Leu Ala Gly Val Phe Gly Ser Leu Ala Ala
1               5                   10                  15

Pro Ala Leu Ala Ile Val His Glu Lys Val Ala Ala Val Pro Asn Gly
            20                  25                  30

Trp Thr Leu Val Lys Gln Ala Pro Glu Ser Asp Pro Ile Thr Leu Ser
        35                  40                  45

Ile Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Ser Lys Leu Thr
    50                  55                  60

Ala Leu Ser Thr Pro Gly Asn Ala Glu Tyr Gly Gln Trp Leu Asp Gln
65                  70                  75                  80

Ser Gly Ile Glu Thr Leu Phe Pro Thr Ala Ser Asp Glu Ala Val Leu
                85                  90                  95
```

```
Arg Trp Leu Arg Asn Ala Gly Val Thr His Ile Ser Arg Gln Gly Gly
            100                 105                 110

Leu Val Asn Phe Ala Thr Ser Val Gly Thr Val Asn Lys Leu Phe Asp
        115                 120                 125

Thr Lys Phe Ser Tyr Tyr Lys Asn Gly Gln Val Gln Lys Leu Arg Thr
    130                 135                 140

Thr Gln Tyr Ser Ile Pro Asp Asp Leu Ala Asp Gly Ile Asp Leu Val
145                 150                 155                 160

Ala Pro Thr Val Phe Phe Gly Lys Gln Gln Glu Ser Val Ala Leu Pro
                165                 170                 175

Thr His His Lys Phe Ala Ala Gly Thr Lys Thr Ala Ala Gly Asn Val
            180                 185                 190

Ser Cys Ala Asp Ile Ile Thr Pro Asp Cys Leu Ala Asp Met Tyr Asn
        195                 200                 205

Phe Arg Gly Tyr Lys Pro Ser Ala Ser Ser Gly Ser Lys Val Gly Phe
    210                 215                 220

Gly Ser Phe Leu Asn Glu Ser Ala Asn Tyr Val Asp Leu Ala Leu Tyr
225                 230                 235                 240

Glu Lys Arg Phe Asn Ile Pro Ser Gln Asn Phe Ser Val Glu Leu Ile
                245                 250                 255

Asn Gly Ala Thr Asn Asp Gln Asn Trp Thr Thr Ala Ser Leu Gly Glu
            260                 265                 270

Ala Asn Leu Asp Val Glu Leu Ile Val Gly Val Ser His Pro Leu Pro
        275                 280                 285

Val Lys Glu Tyr Ile Thr Ala Gly Thr Pro Pro Phe Ile Pro Asn Ala
    290                 295                 300

Leu Gln Pro Thr Pro Ala Asp Asn Gln Asn Glu Pro Tyr Leu Glu Tyr
305                 310                 315                 320

Tyr Glu Tyr Leu Leu Ala Lys Pro Asn Ser Ala Leu Pro Gln Val Leu
                325                 330                 335

Ser Asn Ser Tyr Gly Asp Glu Glu Gln Thr Val Pro Glu Tyr Tyr Ala
            340                 345                 350

Lys Arg Val Cys Asn Leu Ile Gly Leu Met Gly Leu Arg Gly Ile Thr
        355                 360                 365
```

```
Val Leu Glu Ser Ser Gly Asp Thr Gly Ile Gly Ala Ser Cys Met Ser
    370                 375                 380

Asn Asp Gly Thr Glu Thr Pro Glu Phe Thr Pro Ile Phe Pro Ala Thr
385                 390                 395                 400

Cys Pro Tyr Leu Thr Ser Val Gly Gly Thr Gln Ala Tyr Ala Pro Glu
                405                 410                 415

Val Ala Trp Asp Ala Ser Ser Gly Gly Phe Ser Asn Tyr Phe Ser Arg
            420                 425                 430

Ala Trp Tyr Gln Glu Ser Ala Val Ser Lys Tyr Leu Asp Gln Gln Ile
        435                 440                 445

Thr Ala Glu Thr Lys Asp Tyr Tyr Ser Gln Tyr Thr Asn Phe Ser Gly
    450                 455                 460

Arg Gly Phe Pro Asp Val Ala Ala His Ser Leu Thr Pro Arg Tyr Glu
465                 470                 475                 480

Val Val Val Lys Gly Lys Arg Ala Thr Ser Gly Gly Thr Ser Ala Ala
                485                 490                 495

Ala Pro Val Phe Ala Gly Leu Val Gly Met Leu Asn Asp Ala Arg Leu
            500                 505                 510

Arg Ala Gly Lys Pro Thr Leu Gly Phe Leu Asn Pro Leu Leu Tyr Ser
        515                 520                 525

Gly Ala Leu Lys Asp Phe Thr Asp Ile Thr Ala Gly Ser Ser Ile Gly
    530                 535                 540

Cys Asp Gly Val Asn Pro Gln Thr Gly Lys Asn Val Thr Gly Gly Gly
545                 550                 555                 560

Val Ile Pro Tyr Ala His Trp Asn Ala Thr Ala Gly Trp Asp Pro Val
                565                 570                 575

Thr Gly Leu Gly Val Pro Asp Phe Met Lys Leu Lys Asp Leu Val Leu
            580                 585                 590

Ser Leu
```

<210> 150
<211> 595
<212> PRT
<213> Aspergillus niger

<400> 150

```
Met Arg Ser Ser Gly Leu Tyr Thr Ala Leu Leu Cys Ser Leu Ala Ala
1               5                  10                  15

Ser Thr Asn Ala Ile Val His Glu Lys Leu Ala Ala Val Pro Ser Gly
            20                  25                  30

Trp His His Val Glu Asp Ala Gly Ser Asp His Gln Ile Ser Leu Ser
        35                  40                  45

Ile Ala Leu Ala Arg Lys Asn Leu Asp Gln Leu Glu Ser Lys Leu Lys
    50                  55                  60

Asp Leu Ser Thr Pro Gly Glu Ser Gln Tyr Gly Gln Trp Leu Asp Gln
65                  70                  75                  80

Glu Asp Val Asp Thr Leu Phe Pro Val Ala Ser Asp Lys Ala Val Ile
                85                  90                  95

Asn Trp Leu Arg Ser Ala Asn Ile Thr His Ile Ser Arg Gln Gly Ser
            100                 105                 110

Leu Val Asn Phe Ala Thr Thr Val Asp Lys Val Asn Lys Leu Leu Asn
        115                 120                 125

Ala Thr Phe Ala Tyr Tyr Gln Ser Gly Ser Ser Gln Arg Leu Arg Thr
    130                 135                 140

Thr Glu Tyr Ser Ile Pro Asp Asp Leu Val Asp Ser Ile Asp Leu Ile
145                 150                 155                 160

Ser Pro Thr Thr Phe Phe Gly Lys Glu Lys Thr Thr Ala Gly Leu Asn
                165                 170                 175

Gln Arg Ala Gln Lys Ile Asp Thr His Val Ala Lys Arg Ser Asn Ser
            180                 185                 190

Ser Ser Cys Ala Asp Val Ile Thr Leu Ser Cys Leu Lys Glu Met Tyr
        195                 200                 205

Asn Phe Gly Asn Tyr Thr Pro Ser Ala Ser Ser Gly Ser Lys Leu Gly
    210                 215                 220

Phe Gly Ser Phe Leu Asn Glu Ser Ala Ser Tyr Ser Asp Leu Ala Lys
225                 230                 235                 240

Phe Glu Lys Leu Phe Asn Leu Pro Ser Gln Ser Phe Ser Val Glu Leu
                245                 250                 255

Val Asn Gly Gly Val Asn Asp Gln Asn Gln Ser Thr Ala Ser Leu Thr
            260                 265                 270
```

```
Glu Ala Asp Leu Asp Val Glu Leu Leu Val Gly Val Ala His Pro Leu
        275                 280                 285

Pro Val Thr Glu Phe Ile Thr Ser Gly Glu Pro Pro Phe Ile Pro Asp
    290                 295                 300

Pro Asp Glu Pro Ser Ala Ala Asp Asn Glu Asn Glu Pro Tyr Leu Gln
305                 310                 315                 320

Tyr Tyr Glu Tyr Leu Leu Ser Lys Pro Asn Ser Ala Leu Pro Gln Val
                325                 330                 335

Ile Ser Asn Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro Glu Tyr Tyr
            340                 345                 350

Ala Lys Arg Val Cys Asn Leu Ile Gly Leu Val Gly Leu Arg Gly Ile
        355                 360                 365

Ser Val Leu Glu Ser Ser Gly Asp Glu Gly Ile Gly Ser Gly Cys Arg
    370                 375                 380

Thr Thr Asp Gly Thr Asn Arg Thr Gln Phe Asn Pro Ile Phe Pro Ala
385                 390                 395                 400

Thr Cys Pro Tyr Val Thr Ala Val Gly Gly Thr Met Ser Tyr Ala Pro
                405                 410                 415

Glu Ile Ala Trp Glu Ala Ser Ser Gly Gly Phe Ser Asn Tyr Phe Glu
            420                 425                 430

Arg Ala Trp Phe Gln Lys Glu Ala Val Gln Asn Tyr Leu Ala His His
        435                 440                 445

Ile Thr Asn Glu Thr Lys Gln Tyr Tyr Ser Gln Phe Ala Asn Phe Ser
    450                 455                 460

Gly Arg Gly Phe Pro Asp Val Ala Ala His Ser Phe Glu Pro Ser Tyr
465                 470                 475                 480

Glu Val Ile Phe Tyr Gly Ala Arg Tyr Gly Ser Gly Gly Thr Ser Ala
                485                 490                 495

Ala Cys Pro Leu Phe Ser Ala Leu Val Gly Met Leu Asn Asp Ala Arg
            500                 505                 510

Leu Arg Ala Gly Lys Ser Thr Leu Gly Phe Leu Asn Pro Leu Leu Tyr
        515                 520                 525

Ser Lys Gly Tyr Arg Ala Leu Thr Asp Val Thr Gly Gly Gln Ser Ile
    530                 535                 540
```

```
Gly Cys Asn Gly Ile Asp Pro Gln Asn Asp Glu Thr Val Ala Gly Ala
545                 550                 555                 560


Gly Ile Ile Pro Trp Ala His Trp Asn Ala Thr Val Gly Trp Asp Pro
                565                 570                 575


Val Thr Gly Leu Gly Leu Pro Asp Phe Glu Lys Leu Arg Gln Leu Val
            580                 585                 590


Leu Ser Leu
        595


<210>  151
<211>  594
<212>  PRT
<213>  Aspergillus clavatus

<400>  151

Met Leu Ser Ser Thr Leu Tyr Ala Gly Leu Leu Cys Ser Leu Ala Ala
1               5                   10                  15


Pro Ala Phe Gly Ile Ala His Glu Lys Leu Ala Ala Val Pro Asn Gly
            20                  25                  30


Trp Thr Leu Ile Lys Asp Ala Pro Glu Thr Asp Thr Ile Thr Leu Ser
        35                  40                  45


Ile Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Ser Lys Leu Thr
    50                  55                  60


Thr Leu Ala Thr Pro Gly Asn Ala Glu Tyr Gly Gln Trp Leu Asp Lys
65                  70                  75                  80


Ala Asp Ile Glu Ser Leu Phe Pro Thr Ala Ser Asp Glu Ala Ile Ile
                85                  90                  95


Glu Trp Leu Lys Ala Ala Gly Ile Thr Gln Val Ser Arg Gln Gly Ser
            100                 105                 110


Leu Val Asn Phe Ala Ser Thr Val Gly Thr Val Asn Lys Leu Phe Asn
        115                 120                 125


Thr Thr Phe Ser Tyr Tyr Gln Asn Gly Ala Ser Gln Lys Leu Arg Thr
    130                 135                 140


Thr Glu Tyr Ser Ile Pro Asp Ser Leu Thr Asp Ala Ile Asp Leu Val
145                 150                 155                 160


Ala Pro Thr Val Phe Phe Gly Lys Asp Gln Asp Asn Ala Leu Pro Ser
                165                 170                 175


Phe Ala Ser Lys Leu Pro Thr Leu Pro Lys Arg Ala Ser Asn Ser Ser
```

```
            180                 185                 190

Ser Cys Ala Asp Leu Ile Thr Pro Ala Cys Leu Ala Glu Met Tyr Asn
        195                 200                 205

Leu Gly Asp Tyr Lys Pro Val Val Ser Ser Gly Ser Arg Ile Gly Phe
    210                 215                 220

Gly Ser Phe Leu Asn Glu Ser Ala Asn Tyr Ala Asp Leu Ala Ala Tyr
225                 230                 235                 240

Glu Lys Leu Phe Lys Ile Pro Ser Gln Asn Phe Ser Val Glu Leu Ile
                245                 250                 255

Asn Gly Gly Thr Asn Asp Gln Asn Trp Asn Thr Ala Gln Leu Gly Glu
            260                 265                 270

Ala Asp Leu Asp Val Glu Leu Ile Val Ala Val Ser His Pro Leu Pro
        275                 280                 285

Val Val Glu Tyr Ile Thr Gly Gly Ser Pro Pro Tyr Val Pro Asn Ala
    290                 295                 300

Asp Gly Pro Thr Ala Ala Asp Asn Gln Asn Glu Pro Tyr Leu Glu Tyr
305                 310                 315                 320

Tyr Glu Tyr Leu Leu Ser Lys Pro Asn Ala Ala Leu Pro Gln Val Ile
                325                 330                 335

Ser Asn Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro Lys Tyr Tyr Ala
            340                 345                 350

Lys Arg Val Cys Asn Met Ile Gly Leu Met Gly Leu Arg Gly Ile Thr
        355                 360                 365

Val Leu Glu Ser Ser Gly Asp Thr Gly Ile Gly Ser Ala Cys Met Ser
    370                 375                 380

Asn Asp Gly Thr Asn Thr Pro Gln Phe Thr Pro Thr Phe Pro Gly Thr
385                 390                 395                 400

Cys Pro Phe Ile Thr Ser Val Gly Gly Thr Gln Ala Tyr Ala Pro Glu
                405                 410                 415

Val Ala Trp Asp Gly Ser Ser Gly Gly Phe Ser Asn Tyr Phe Lys Arg
            420                 425                 430

Pro Arg Tyr Gln Glu Ala Ala Val Lys Ser Tyr Leu Lys His His Ile
        435                 440                 445

Ser Lys Asp Thr Lys Glu Tyr Tyr Ser Gln Tyr Thr Asn Phe His Gly
```

450 455 460

Arg Gly Phe Pro Asp Val Ser Ala His Ser Leu Thr Pro Asp Tyr Glu
465 470 475 480

Val Ile Asn Tyr Gly Ala Arg Ser Arg Ser Gly Gly Thr Ser Ala Ala
485 490 495

Cys Pro Val Phe Ala Gly Ile Val Gly Met Leu Asn Asp Ala Arg Leu
500 505 510

Arg Ala Gly Lys Pro Thr Leu Gly Phe Leu Asn Pro Leu Leu Tyr Ser
515 520 525

Glu Gly Phe Lys Thr Phe Thr Asp Ile Thr Ala Gly Ala Ser Val Gly
530 535 540

Cys Asp Gly Thr Asn Pro Gln Ser Gly Lys Pro Val Pro Gly Gly Gly
545 550 555 560

Ile Ile Pro Tyr Ala His Trp Asn Ala Thr Ala Gly Trp Asp Pro Val
565 570 575

Thr Gly Leu Gly Val Pro Asn Phe Leu Lys Leu Lys Glu Leu Val Leu
580 585 590

Ser Phe

<210> 152
<211> 580
<212> PRT
<213> Aspergillus niger

<400> 152

Met Val Ala Phe Ser Arg Ile Ser Ala Gly Phe Ala Leu Ala Ala Pro
1 5 10 15

Ala Leu Ala Ser Val Val Leu Glu Thr Val Lys Ser Val Pro Ser Asp
20 25 30

Trp Lys Leu Val Glu Ala Ala Asp Thr Ser Ser Thr Ile Ser Leu Ser
35 40 45

Val Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Glu Lys Leu Leu
50 55 60

Ala Val Ser Thr Pro Gly Lys Asp Thr Tyr Gly Gln Phe Leu Asp Leu
65 70 75 80

Asp Asp Ile Asn Glu Gln Phe Pro Leu Ala Asp Asp Ala Ala Val Val
85 90 95

```
Ala Trp Leu Lys Lys Ala Gly Val Thr Gln Ile His Lys Glu Gly Gly
            100                 105                 110

Leu Leu Asn Phe Ala Thr Thr Val Gly Thr Ala Asn Gln Leu Leu Asn
        115                 120                 125

Thr Thr Phe Ser Val Tyr Lys Ser Gly Ser Thr Gln Lys Leu Arg Thr
    130                 135                 140

Thr Gln Tyr Ser Val Pro Asp Glu Leu Thr Gly Ser Ile Asp Leu Ile
145                 150                 155                 160

Ser Pro Thr Val Phe Phe Gly Lys Ser Asn Ala Ala Arg Ser Ala Ala
                165                 170                 175

Val Arg Ala Ser Gln Thr Thr Lys Glu Thr Ser Arg Lys Lys Ser Ser
            180                 185                 190

Asn Val Cys Glu Tyr Ile Thr Pro Asp Cys Leu Lys Glu Gln Tyr Ser
        195                 200                 205

Ile Asp Tyr Thr Pro Glu Ala Ser Ser Gly Ser Arg Val Gly Phe Gly
    210                 215                 220

Ser Phe Leu Asn Glu Ser Ala Leu Tyr Ser Asp Leu Asp Leu Phe Thr
225                 230                 235                 240

Gln Tyr Phe Asp Ile Pro Gln Gln Ser Phe Thr Val Glu Thr Ile Asn
                245                 250                 255

Gly Gly Ile Asn Asn Gln Glu Asn Asp Pro Asp Gly Glu Ala Asp Leu
            260                 265                 270

Asp Val Gln Asn Ile Val Gly Ile Ser His Pro Leu Pro Val Thr Glu
        275                 280                 285

Tyr Ile Thr Gly Gly Ser Pro Pro Phe Ile Pro Asp Val Glu Thr Thr
    290                 295                 300

Thr Asp Glu Asn Glu Pro Tyr Leu Gln Tyr Tyr Glu Tyr Leu Leu Ala
305                 310                 315                 320

Lys Thr Asn Asp Glu Leu Pro Leu Val Ile Ser Asn Ser Tyr Gly Asp
                325                 330                 335

Asp Glu Asp Thr Val Pro Ile Ala Tyr Ala Thr Arg Val Cys Asn Leu
            340                 345                 350

Ile Gly Leu Met Gly Thr Arg Gly Ile Ser Ile Leu Glu Ser Ser Gly
        355                 360                 365
```

```
Asp Ser Gly Val Gly Gly Ala Cys Met Ser Asn Asp Gly Thr Asp Lys
    370                 375                 380

Thr Glu Phe Thr Pro Met Phe Pro Gly Thr Cys Pro Tyr Ile Thr Ala
385                 390                 395                 400

Val Gly Gly Thr Gln Asp Val Pro Glu Val Ala Trp Val Asp Ser Ser
                405                 410                 415

Gly Gly Phe Ser Asn Tyr Phe Ser Gln Pro Ser Tyr Gln Ser Asp Gln
            420                 425                 430

Val Glu Thr Tyr Leu Asp Lys Tyr Ile Ser Ala Ser Thr Lys Lys Tyr
        435                 440                 445

Tyr Glu Gln Tyr Thr Asn Phe Ser Gly Arg Ala Phe Pro Asp Val Ser
    450                 455                 460

Ala Phe Ala Gly Ser Pro Tyr Tyr Glu Thr Tyr Ile Asp Gly Gln Leu
465                 470                 475                 480

Gly Leu Val Ala Gly Thr Ser Gly Ala Ser Pro Val Phe Ala Gly Ile
                485                 490                 495

Val Ala Leu Leu Asn Asp Ala Arg Leu Arg Ala Asn Lys Thr Ser Leu
            500                 505                 510

Gly Phe Leu Asn Pro Trp Leu Tyr Ser Ser Gly Tyr Lys Ser Leu Asn
        515                 520                 525

Asp Ile Thr Ser Gly Glu Ala Val Gly Cys Gln Gly Asp Val Glu Gly
    530                 535                 540

Ala Gly Val Ile Pro Trp Ala Ser Trp Asn Ala Thr Thr Gly Trp Asp
545                 550                 555                 560

Pro Ala Thr Gly Leu Gly Thr Pro Asn Phe Ala Lys Leu Lys Glu Ala
                565                 570                 575

Val Leu Ala Leu
            580


<210>  153
<211>  602
<212>  PRT
<213>  Aspergillus clavatus

<400>  153

Met Phe Ser Ser Leu Phe Ser Arg Gly Ala Leu Ser Leu Ala Val Val
1               5                   10                  15
```

```
Ser Leu Leu Thr Ser Ser Val Ala Ala Glu Val Phe Glu Lys Leu Ser
            20                  25                  30

Thr Val Pro Gln Gly Trp Lys Tyr Ser His Ala Pro Ser Asp Ser Asp
        35                  40                  45

Pro Ile Arg Leu Gln Ile Ala Leu Gln Gln Gln Asp Val Asp Gly Phe
    50                  55                  60

Glu Lys Ala Leu Leu Glu Met Ser Asp Pro Ser His Ala Ser Tyr Gly
65                  70                  75                  80

Lys His Phe Gln Ser His Glu Glu Met Lys Arg Met Leu Leu Pro Ser
                85                  90                  95

Gln Glu Ser Val Gln Ser Val Arg Ser Trp Leu Glu Ser Gly Gly Val
            100                 105                 110

Thr Asp Ile Glu Glu Asp Ala Asp Trp Ile Asn Phe Arg Thr Thr Val
        115                 120                 125

Gly Val Ala Asn Thr Leu Leu Asp Ala Asp Phe Lys Trp Tyr Val Ser
    130                 135                 140

Asp Val Arg Ser Leu Glu Arg Leu Arg Thr Leu Ser Tyr Ser Ile Pro
145                 150                 155                 160

Glu Ser Leu Ala Ser His Val His Met Ile Gln Pro Thr Thr Arg Phe
                165                 170                 175

Gly Gln Ile Lys Ala Asn Arg Ala Thr Leu His Ser Ser Ser Leu Tyr
            180                 185                 190

Arg Asp Glu Lys Ile Leu Ser Ala Ser Leu Gln Ala Gly Asn Ser Thr
        195                 200                 205

Cys Asp Gln Val Ile Thr Pro Gln Cys Leu Lys Ser Leu Tyr Asn Ile
    210                 215                 220

Gly Asp Tyr Lys Ala Asp Ala Arg Ser Gly Ser Lys Val Ala Phe Ala
225                 230                 235                 240

Ser Phe Leu Glu Glu Tyr Ala Arg Tyr Asp Asp Leu Ala Lys Phe Glu
                245                 250                 255

Glu Lys Leu Ala Pro Tyr Ala Ile Gly Gln Asn Phe Ser Val Ile Gln
            260                 265                 270

Tyr Asn Gly Gly Leu Asn Asp Gln Asn Ser Thr Ser Asp Ser Gly Glu
        275                 280                 285
```

```
Ala Asn Leu Asp Leu Gln Tyr Met Leu Gly Ile Ser Ala Pro Leu Pro
    290                 295                 300

Ile Thr Glu Phe Ser Thr Gly Gly Arg Gly Lys Leu Ile Pro Asp Leu
305                 310                 315                 320

Ser Ser Pro Asp Pro Asn Asp Asn Ser Asn Glu Pro Tyr Leu Glu Phe
                325                 330                 335

Leu Gln Asn Val Leu Lys Met Pro Gln His Lys Leu Pro Gln Val Ile
            340                 345                 350

Ser Thr Ser Tyr Gly Glu Asp Glu Gln Thr Ile Pro Lys Arg Tyr Ala
        355                 360                 365

Leu Ser Val Cys Asn Leu Tyr Ala Gln Leu Gly Ser Arg Gly Val Ser
    370                 375                 380

Val Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Ala Ala Cys Gln Thr
385                 390                 395                 400

Asn Asp Gly His Asn Thr Thr His Phe Pro Pro Gln Phe Pro Ala Ala
                405                 410                 415

Cys Pro Trp Val Thr Ser Val Gly Gly Thr Thr Asn Thr Gln Pro Glu
            420                 425                 430

Glu Ala Val Tyr Phe Ser Ser Gly Gly Phe Ser Asp Leu Trp Pro Arg
        435                 440                 445

Pro Gly Tyr Gln Glu Val Ala Val Arg Gly Tyr Leu Lys Lys Leu Gly
    450                 455                 460

Gly Thr Tyr Arg Gly Leu Tyr Asn Pro Arg Gly Arg Ala Phe Pro Asp
465                 470                 475                 480

Val Ala Ala Gln Ala Met Lys Tyr Ala Val Phe Asp Lys Gly Ala Leu
                485                 490                 495

His Gln Tyr Ala Gly Thr Ser Cys Ser Ala Pro Ala Phe Gly Gly Ile
            500                 505                 510

Ile Gly Leu Leu Asn Asp Ala Arg Leu Arg Ala His Lys Pro Pro Met
        515                 520                 525

Gly Phe Leu Asn Pro Trp Leu Tyr Ser Gln Ala Ser His Gly Phe Asn
    530                 535                 540

Asp Ile Val Val Gly Gly Ser Lys Gly Cys Asp Gly Arg Asn Arg Phe
545                 550                 555                 560
```

```
Gly Gly Thr Pro Asn Gly Ser Pro Val Val Pro Tyr Ala Ser Trp Asn
                565                 570                 575

Ala Thr Glu Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr Pro Asn Phe
            580                 585                 590

Gly Lys Leu Leu His Leu Ala Leu Arg Arg
        595                 600
```

<210> 154
<211> 600
<212> PRT
<213> Aspergillus terreus

<400> 154

```
Met Leu Pro Ser Leu Val Asn Asn Gly Ala Leu Ser Leu Ala Val Leu
1               5                   10                  15

Ser Leu Leu Thr Ser Ser Val Ala Gly Glu Val Phe Glu Lys Leu Ser
            20                  25                  30

Ala Val Pro Lys Gly Trp His Phe Ser His Ala Ala Gln Ala Asp Ala
        35                  40                  45

Pro Ile Asn Leu Lys Ile Ala Leu Lys Gln His Asp Val Glu Gly Phe
    50                  55                  60

Glu Gln Ala Leu Leu Asp Met Ser Thr Pro Gly His Glu Asn Tyr Gly
65                  70                  75                  80

Lys His Phe His Glu His Asp Glu Met Lys Arg Met Leu Leu Pro Ser
                85                  90                  95

Asp Ser Ala Val Asp Ala Val Gln Thr Trp Leu Thr Ser Ala Gly Ile
            100                 105                 110

Thr Asp Tyr Asp Leu Asp Ala Asp Trp Ile Asn Leu Arg Thr Thr Val
        115                 120                 125

Glu His Ala Asn Ala Leu Leu Asp Thr Gln Phe Gly Trp Tyr Glu Asn
    130                 135                 140

Glu Val Arg His Ile Thr Arg Leu Arg Thr Leu Gln Tyr Ser Ile Pro
145                 150                 155                 160

Glu Thr Val Ala Ala His Ile Asn Met Val Gln Pro Thr Thr Arg Phe
                165                 170                 175

Gly Gln Ile Arg Pro Asp Arg Ala Thr Phe His Ala His His Thr Ser
            180                 185                 190
```

```
Asp Ala Arg Ile Leu Ser Ala Leu Ala Ala Ala Ser Asn Ser Thr Ser
        195                 200                 205

Cys Asp Ser Val Ile Thr Pro Lys Cys Leu Lys Asp Leu Tyr Lys Val
    210                 215                 220

Gly Asp Tyr Glu Ala Asp Pro Asp Ser Gly Ser Gln Val Ala Phe Ala
225                 230                 235                 240

Ser Tyr Leu Glu Glu Tyr Ala Arg Tyr Ala Asp Met Val Lys Phe Gln
                245                 250                 255

Asn Ser Leu Ala Pro Tyr Ala Lys Gly Gln Asn Phe Ser Val Val Leu
            260                 265                 270

Tyr Asn Gly Gly Val Asn Asp Gln Ser Ser Ser Ala Asp Ser Gly Glu
        275                 280                 285

Ala Asn Leu Asp Leu Gln Thr Ile Met Gly Leu Ser Ala Pro Leu Pro
    290                 295                 300

Ile Thr Glu Tyr Ile Thr Gly Gly Arg Gly Lys Leu Ile Pro Asp Leu
305                 310                 315                 320

Ser Gln Pro Asn Pro Asn Asp Asn Ser Asn Glu Pro Tyr Leu Glu Phe
                325                 330                 335

Leu Gln Asn Ile Leu Lys Leu Asp Gln Asp Glu Leu Pro Gln Val Ile
            340                 345                 350

Ser Thr Ser Tyr Gly Glu Asp Glu Gln Thr Ile Pro Arg Gly Tyr Ala
        355                 360                 365

Glu Ser Val Cys Asn Met Leu Ala Gln Leu Gly Ser Arg Gly Val Ser
    370                 375                 380

Val Val Phe Ser Ser Gly Asp Ser Gly Val Gly Ala Ala Cys Gln Thr
385                 390                 395                 400

Asn Asp Gly Arg Asn Gln Thr His Phe Asn Pro Gln Phe Pro Ala Ser
                405                 410                 415

Cys Pro Trp Val Thr Ser Val Gly Ala Thr Thr Lys Thr Asn Pro Glu
            420                 425                 430

Gln Ala Val Tyr Phe Ser Ser Gly Gly Phe Ser Asp Phe Trp Lys Arg
        435                 440                 445

Pro Lys Tyr Gln Asp Glu Ala Val Ala Ala Tyr Leu Asp Thr Leu Gly
    450                 455                 460
```

```
Asp Lys Phe Ala Gly Leu Phe Asn Lys Gly Gly Arg Ala Phe Pro Asp
465                 470                 475                 480

Val Ala Ala Gln Gly Met Asn Tyr Ala Ile Tyr Asp Lys Gly Thr Leu
                485                 490                 495

Gly Arg Leu Asp Gly Thr Ser Cys Ser Ala Pro Ala Phe Ser Ala Ile
            500                 505                 510

Ile Ser Leu Leu Asn Asp Ala Arg Leu Arg Glu Gly Lys Pro Thr Met
        515                 520                 525

Gly Phe Leu Asn Pro Trp Leu Tyr Gly Glu Gly Arg Glu Ala Leu Asn
    530                 535                 540

Asp Val Val Val Gly Gly Ser Lys Gly Cys Asp Gly Arg Asp Arg Phe
545                 550                 555                 560

Gly Gly Lys Pro Asn Gly Ser Pro Val Val Pro Phe Ala Ser Trp Asn
                565                 570                 575

Ala Thr Gln Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro Asn Phe
            580                 585                 590

Ala Lys Met Leu Glu Leu Ala Pro
        595                 600


<210>  155
<211>  602
<212>  PRT
<213>  Aspergillus fumigatus

<400>  155

Met Phe Ser Ser Leu Leu Asn Arg Gly Ala Leu Leu Ala Val Val Ser
1               5                   10                  15

Leu Leu Ser Ser Ser Val Ala Ala Glu Val Phe Glu Lys Leu Ser Ala
            20                  25                  30

Val Pro Gln Gly Trp Lys Tyr Ser His Thr Pro Ser Asp Arg Asp Pro
        35                  40                  45

Ile Arg Leu Gln Ile Ala Leu Lys Gln His Asp Val Glu Gly Phe Glu
    50                  55                  60

Thr Ala Leu Leu Glu Met Ser Asp Pro Tyr His Pro Asn Tyr Gly Lys
65                  70                  75                  80

His Phe Gln Thr His Glu Glu Met Lys Arg Met Leu Leu Pro Thr Gln
                85                  90                  95

Glu Ala Val Glu Ser Val Arg Gly Trp Leu Glu Ser Ala Gly Ile Ser
```

100 105 110

Asp Ile Glu Glu Asp Ala Asp Trp Ile Lys Phe Arg Thr Thr Val Gly
115 120 125

Val Ala Asn Asp Leu Leu Asp Ala Asp Phe Lys Trp Tyr Val Asn Glu
130 135 140

Val Gly His Val Glu Arg Leu Arg Thr Leu Ala Tyr Ser Leu Pro Gln
145 150 155 160

Ser Val Ala Ser His Val Asn Met Val Gln Pro Thr Thr Arg Phe Gly
165 170 175

Gln Ile Lys Pro Asn Arg Ala Thr Met Arg Gly Arg Pro Val Gln Val
180 185 190

Asp Ala Asp Ile Leu Ser Ala Ala Val Gln Ala Gly Asp Thr Ser Thr
195 200 205

Cys Asp Gln Val Ile Thr Pro Gln Cys Leu Lys Asp Leu Tyr Asn Ile
210 215 220

Gly Asp Tyr Lys Ala Asp Pro Asn Gly Gly Ser Lys Val Ala Phe Ala
225 230 235 240

Ser Phe Leu Glu Glu Tyr Ala Arg Tyr Asp Asp Leu Ala Lys Phe Glu
245 250 255

Glu Lys Leu Ala Pro Tyr Ala Ile Gly Gln Asn Phe Ser Val Ile Gln
260 265 270

Tyr Asn Gly Gly Leu Asn Asp Gln Asn Ser Ala Ser Asp Ser Gly Glu
275 280 285

Ala Asn Leu Asp Leu Gln Tyr Ile Val Gly Val Ser Ser Pro Ile Pro
290 295 300

Val Thr Glu Phe Ser Thr Gly Gly Arg Gly Leu Leu Ile Pro Asp Leu
305 310 315 320

Ser Gln Pro Asp Pro Asn Asp Asn Ser Asn Glu Pro Tyr Leu Glu Phe
325 330 335

Leu Gln Asn Val Leu Lys Met Asp Gln Asp Lys Leu Pro Gln Val Ile
340 345 350

Ser Thr Ser Tyr Gly Glu Asp Glu Gln Thr Ile Pro Glu Lys Tyr Ala
355 360 365

Arg Ser Val Cys Asn Leu Tyr Ala Gln Leu Gly Ser Arg Gly Val Ser

370 375 380

Val Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Ala Ala Cys Leu Thr
385 390 395 400

Asn Asp Gly Thr Asn Arg Thr His Phe Pro Pro Gln Phe Pro Ala Ala
405 410 415

Cys Pro Trp Val Thr Ser Val Gly Gly Thr Thr Lys Thr Gln Pro Glu
420 425 430

Glu Ala Val Tyr Phe Ser Ser Gly Gly Phe Ser Asp Leu Trp Glu Arg
435 440 445

Pro Ser Trp Gln Asp Ser Ala Val Lys Arg Tyr Leu Lys Lys Leu Gly
450 455 460

Pro Arg Tyr Lys Gly Leu Tyr Asn Pro Lys Gly Arg Ala Phe Pro Asp
465 470 475 480

Val Ala Ala Gln Ala Glu Asn Tyr Ala Val Phe Asp Lys Gly Val Leu
485 490 495

His Gln Phe Asp Gly Thr Ser Cys Ser Ala Pro Ala Phe Ser Ala Ile
500 505 510

Val Ala Leu Leu Asn Asp Ala Arg Leu Arg Ala His Lys Pro Val Met
515 520 525

Gly Phe Leu Asn Pro Trp Leu Tyr Ser Lys Ala Ser Lys Gly Phe Asn
530 535 540

Asp Ile Val Lys Gly Gly Ser Lys Gly Cys Asp Gly Arg Asn Arg Phe
545 550 555 560

Gly Gly Thr Pro Asn Gly Ser Pro Val Val Pro Tyr Ala Ser Trp Asn
565 570 575

Ala Thr Asp Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr Pro Asp Phe
580 585 590

Gly Lys Leu Leu Ser Leu Ala Met Arg Arg
595 600

<210> 156
<211> 595
<212> PRT
<213> Sclerotinia sclerotiorum

<400> 156

Met Met Tyr Pro Lys Thr Ala Ile Cys Ala Gly Leu Leu Ser Gln Ala
1 5 10 15

```
Leu Pro Ala Tyr Gly Ala Val Met Glu Lys Leu Ala Ala Val Pro Ser
            20                  25                  30

Gly Trp Thr Val Ala Glu Thr Asp Ser Ser Thr Ala Ile Thr Leu Thr
        35                  40                  45

Val Gly Leu Ala Met Gln Asn Leu Asp Gln Leu Glu Ala Lys Leu Ile
    50                  55                  60

Ala Val Ser Thr Pro Gly Asn Ala Asp Tyr Gly Asn His Leu Asp Ala
65                  70                  75                  80

Asp Glu Ala Asn Ala Leu Phe Ala Pro Ser Ala Asp Ala Ser Asn Ala
                85                  90                  95

Val Thr Ser Trp Leu Thr Ser Ala Gly Ala Gln Asn Ile Val Ser Asp
            100                 105                 110

Gly Ser Thr Val Thr Phe Ala Ala Thr Ile Glu Lys Ala Asn Ser Ile
        115                 120                 125

Leu Asn Ala Thr Phe Gln Thr Tyr Thr Ser Asn Gly Val Thr Lys Val
    130                 135                 140

Arg Thr Thr Gln Tyr Ser Val Pro Asp His Leu Ala Glu His Ile Asp
145                 150                 155                 160

Leu Ile Ser Pro Thr Thr Tyr Phe Gly Lys Thr Val Ala Asn Ala Pro
                165                 170                 175

Thr Lys Val Thr Lys Lys Asp Thr Ser Ala Thr Lys Val Thr Val Asp
            180                 185                 190

Ala Ser Cys Ser Thr Ser Ile Thr Pro Lys Cys Ile Lys Glu Leu Tyr
        195                 200                 205

Asn Val Gly Asp Tyr Thr Pro Ser Val Ser Ser Gly Ser Arg Ile Gly
    210                 215                 220

Phe Gly Ser Phe Leu Asn Gln Ser Ala Leu Tyr Ser Asp Leu Phe Gln
225                 230                 235                 240

Tyr Glu Lys Tyr Phe Asp Ile Pro Gln Gln Asn Phe Ser Val Thr Leu
                245                 250                 255

Ile Asn Gly Ala Thr Asn Asp Gln Asn Pro Ala Thr Ala Gln Asn Gly
            260                 265                 270

Glu Ala Asn Leu Asp Val Gln Asn Ile Ile Gly Val Ala His Pro Leu
        275                 280                 285
```

```
Pro Val Gln Glu Phe Ile Thr Gly Gly Ser Pro Pro Phe Val Pro Asn
    290                 295                 300

Ile Asp Val Pro Thr Ala Ala Asp Asn Ser Asn Glu Pro Tyr Leu Pro
305                 310                 315                 320

Tyr Tyr Gln Tyr Leu Met Thr Gln Pro Asn Ser Ala Ile Pro Gln Val
                325                 330                 335

Ile Ser Asn Ser Tyr Gly Asp Asp Glu Asp Thr Val Pro Tyr Ala Tyr
            340                 345                 350

Ala Val Arg Val Cys Asn Leu Ile Gly Ile Met Gly Leu Arg Gly Ile
        355                 360                 365

Ser Ile Leu Glu Ser Ser Gly Asp Thr Gly Val Gly Ala Gly Cys Val
    370                 375                 380

Ala Asn Asp Gly Lys Asp Thr Pro Tyr Phe Gln Pro Gln Phe Pro Gly
385                 390                 395                 400

Thr Cys Pro Tyr Ile Thr Ser Val Gly Gly Thr Gln Ser Val Ser Pro
                405                 410                 415

Glu Val Ala Trp Asp Asp Gly Ser Gly Gly Phe Ser Asn Tyr Phe Pro
            420                 425                 430

Thr Ala Trp Tyr Gln Thr Ala Ala Val Ala Glu Tyr Leu Thr Glu His
        435                 440                 445

Ile Thr Pro Ser Thr Arg Lys Tyr Tyr Glu Ser Tyr Thr Asn Phe Ser
    450                 455                 460

Gly Arg Gly Phe Pro Asp Ile Ser Ala His Ser Leu Thr Pro Asp Tyr
465                 470                 475                 480

Gln Val Val Tyr Ser Gly Glu Leu Ser Pro Ser Gly Gly Thr Ser Ala
                485                 490                 495

Ala Ala Pro Val Val Ala Ala Ile Leu Gly Leu Leu Asn Asp Ala Arg
            500                 505                 510

Phe Lys Ala Gly Lys Ser Ala Leu Gly Phe Val Asn Pro Leu Leu Tyr
        515                 520                 525

Leu Leu Gly Thr Ser Ala Leu Asn Asp Ile Thr Gly Gly Gly Ser Val
    530                 535                 540

Gly Cys Asn Gly Val Asn Gly Gln Thr Gly Ala Lys Ile Pro Asn Gly
545                 550                 555                 560
```

```
Ala Val Ile Pro Tyr Ala Thr Trp Asn Ala Thr Lys Gly Trp Asp Pro
                565                 570                 575

Val Thr Gly Leu Gly Thr Pro Asp Phe Glu Lys Leu Lys Glu Leu Val
            580                 585                 590

Leu Ser Tyr
        595
```

<210> 157
<211> 595
<212> PRT
<213> Botryotinia fuckeliana

<400> 157

```
Met Tyr Pro Lys Thr Ala Ile Cys Ala Gly Leu Leu Ser Gln Ala Leu
1               5                   10                  15

Pro Ala Tyr Gly Ala Val Met Glu Lys Leu Ala Ala Ala Pro Ser Gly
            20                  25                  30

Trp Thr Ala Ala Ser Glu Thr Asp Ser Ser Ala Ala Ile Thr Leu Thr
        35                  40                  45

Val Gly Leu Ala Met Gln Asn Leu Asp Gln Leu Glu Ala Lys Leu Leu
    50                  55                  60

Ala Val Ser Thr Pro Gly Asn Ala Glu Tyr Gly Asn His Leu Asp Ile
65                  70                  75                  80

Asp Glu Ala Asn Ala Leu Phe Ala Pro Ser Ala Asp Ala Ser Ser Ala
                85                  90                  95

Val Thr Ser Trp Leu Thr Ser Ala Gly Ala Gln Asn Ile Val Ser Asp
            100                 105                 110

Gly Ser Thr Ile Ser Phe Ala Thr Thr Ile Glu Lys Ala Asn Ser Met
        115                 120                 125

Leu Asn Ala Lys Phe Lys Ser Tyr Thr Ser Asn Gly Val Thr Lys Val
    130                 135                 140

Arg Thr Thr Gln Tyr Ser Val Pro Asp Asp Val Ala Glu His Ile Glu
145                 150                 155                 160

Leu Ile Ser Pro Thr Thr Tyr Phe Gly Lys Thr Val Ala Asn Ala Pro
                165                 170                 175

Thr Lys Ile Ala Lys Arg Asp Thr Ser Ala Thr Lys Val Thr Val Asp
            180                 185                 190
```

```
Ala Ala Cys Ser Thr Ser Ile Thr Pro Lys Cys Ile Lys Glu Leu Tyr
        195                 200                 205

Asn Ile Gly Asp Tyr Thr Pro Ser Val Ser Ser Gly Ser Arg Ile Gly
    210                 215                 220

Phe Gly Ser Phe Leu Asn Gln Ser Ala Leu Tyr Thr Asp Leu Phe Gln
225                 230                 235                 240

Tyr Glu Ser Tyr Phe Gly Ile Pro Glu Gln Asn Phe Thr Val Thr Leu
                245                 250                 255

Ile Asn Gly Ala Thr Asn Asp Gln Asn Glu Ala Thr Ala Gln Ile Gly
            260                 265                 270

Glu Ala Asn Leu Asp Val Gln Asn Ile Ile Gly Val Ala His Pro Leu
        275                 280                 285

Pro Val Gln Glu Phe Ile Thr Gly Gly Ser Pro Pro Phe Ile Pro Asn
    290                 295                 300

Val Asp Leu Pro Thr Glu Ala Asp Asn Ser Asn Glu Pro Tyr Leu Pro
305                 310                 315                 320

Tyr Tyr Glu Tyr Leu Leu Ser Gln Pro Asn Ser Ala Leu Pro Gln Val
                325                 330                 335

Ile Ser Asn Ser Tyr Gly Asp Asp Glu Asp Thr Val Pro Tyr Ala Tyr
            340                 345                 350

Ala Val Arg Val Cys Asn Leu Ile Gly Ile Met Gly Leu Arg Gly Ile
        355                 360                 365

Ser Val Leu Glu Ser Ser Gly Asp Thr Gly Val Gly Ala Gly Cys Val
    370                 375                 380

Ala Asn Asp Gly Leu Asn Thr Pro Tyr Phe Gln Pro Gln Phe Pro Gly
385                 390                 395                 400

Thr Cys Pro Tyr Ile Thr Ser Val Gly Gly Thr Gln Ala Val Ala Pro
                405                 410                 415

Glu Val Ala Trp Asp Asp Gly Ser Gly Gly Phe Ser Asn Tyr Phe Pro
            420                 425                 430

Thr Ala Trp Tyr Gln Val Ala Ala Val Asp Glu Tyr Leu Asn Lys His
        435                 440                 445

Ile Ser Pro Ser Thr Lys Glu Tyr Tyr Glu Ser Tyr Thr Asn Phe Ser
    450                 455                 460
```

```
Gly Arg Gly Phe Pro Asp Ile Ser Ala His Ser Leu Thr Pro Asp Tyr
465                 470                 475                 480

Gln Val Val Tyr Phe Gly Glu Leu Ser Pro Ser Gly Gly Thr Ser Ala
                485                 490                 495

Ala Ala Pro Val Ile Ala Gly Ile Leu Gly Leu Leu Asn Asp Ala Arg
            500                 505                 510

Phe Lys Ala Gly Lys Pro Ala Leu Gly Phe Ile Asn Pro Leu Leu Tyr
        515                 520                 525

Leu Leu Gly Gln Gly Ala Leu Asn Asp Ile Thr Gly Gly Ala Ser Val
    530                 535                 540

Gly Cys Asn Gly Val Asn Gly Gln Thr Gly Ala Lys Val Pro Gly Gly
545                 550                 555                 560

Ala Val Ile Pro Tyr Ala Ser Trp Asn Ala Thr Lys Gly Trp Asp Pro
                565                 570                 575

Val Thr Gly Leu Gly Thr Pro Asn Phe Glu Lys Leu Lys Ala Leu Val
            580                 585                 590

Leu Ser Tyr
        595


<210>  158
<211>  594
<212>  PRT
<213>  Neosartorya fischeri

<400>  158

Met Leu Ser Ser Thr Leu Tyr Ala Gly Leu Leu Cys Ser Leu Ala Ala
1               5                   10                  15

Pro Ala Leu Gly Val Val His Glu Lys Leu Ser Ala Val Pro Ser Gly
            20                  25                  30

Trp Thr Leu Val Glu Asp Ala Ser Glu Ser Asp Thr Thr Thr Leu Ser
        35                  40                  45

Ile Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Ser Lys Leu Thr
    50                  55                  60

Thr Leu Ala Thr Pro Gly Asn Ala Glu Tyr Gly Lys Trp Leu Asp Gln
65                  70                  75                  80

Ser Asp Ile Glu Ser Leu Phe Pro Thr Ala Ser Asp Asp Ala Val Ile
                85                  90                  95
```

```
Gln Trp Leu Lys Asp Ala Gly Val Thr Gln Val Ser Arg Gln Gly Ser
            100                 105                 110

Leu Val Asn Phe Ala Thr Thr Val Gly Thr Ala Asn Lys Leu Phe Asp
        115                 120                 125

Thr Lys Phe Ser Tyr Tyr Arg Asn Gly Ala Ser Gln Lys Leu Arg Thr
    130                 135                 140

Thr Gln Tyr Ser Ile Pro Asp Ser Leu Thr Glu Ser Ile Asp Leu Ile
145                 150                 155                 160

Ala Pro Thr Val Phe Phe Gly Lys Glu Gln Asp Ser Ala Leu Pro Pro
                165                 170                 175

His Ala Val Lys Leu Pro Ala Leu Pro Arg Arg Ala Ala Thr Asn Ser
            180                 185                 190

Ser Cys Ala Asn Leu Ile Thr Pro Asp Cys Leu Val Glu Met Tyr Asn
        195                 200                 205

Leu Gly Asp Tyr Lys Pro Asp Ala Ser Ser Gly Ser Arg Val Gly Phe
    210                 215                 220

Gly Ser Phe Leu Asn Gln Ser Ala Asn Tyr Ala Asp Leu Ala Ala Tyr
225                 230                 235                 240

Glu Gln Leu Phe Asn Ile Pro Pro Gln Asn Phe Ser Val Glu Leu Ile
                245                 250                 255

Asn Gly Gly Ala Asn Asp Gln Asn Trp Ala Thr Ala Ser Leu Gly Glu
            260                 265                 270

Ala Asn Leu Asp Val Glu Leu Ile Val Ala Val Ser His Ala Leu Pro
        275                 280                 285

Val Val Glu Phe Ile Thr Gly Gly Ser Pro Pro Phe Val Pro Asn Val
    290                 295                 300

Asp Glu Pro Thr Ala Ala Asp Asn Gln Asn Glu Pro Tyr Leu Gln Tyr
305                 310                 315                 320

Tyr Glu Tyr Leu Leu Ser Lys Pro Asn Ser His Leu Pro Gln Val Ile
                325                 330                 335

Ser Asn Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro Glu Tyr Tyr Ala
            340                 345                 350

Arg Arg Val Cys Asn Leu Ile Gly Leu Met Gly Leu Arg Gly Ile Thr
        355                 360                 365
```

```
Val Leu Glu Ser Ser Gly Asp Thr Gly Ile Gly Ser Ala Cys Met Ser
    370                 375                 380

Asn Asp Gly Thr Asn Thr Pro Gln Phe Thr Pro Thr Phe Pro Gly Thr
385                 390                 395                 400

Cys Pro Phe Ile Thr Ala Val Gly Gly Thr Gln Ser Tyr Ala Pro Glu
                405                 410                 415

Val Ala Trp Asp Ala Ser Ser Gly Gly Phe Ser Asn Tyr Phe Ser Arg
            420                 425                 430

Pro Trp Tyr Gln Tyr Phe Ala Val Glu Asn Tyr Leu Asn Asn His Ile
        435                 440                 445

Thr Lys Asp Thr Lys Lys Tyr Tyr Ser Gln Tyr Thr Asn Phe Lys Gly
    450                 455                 460

Arg Gly Phe Pro Asp Val Ser Ala His Ser Leu Thr Pro Asp Tyr Glu
465                 470                 475                 480

Val Val Leu Thr Gly Lys His Tyr Lys Ser Gly Gly Thr Ser Ala Ala
                485                 490                 495

Cys Pro Val Phe Ala Gly Ile Val Gly Leu Leu Asn Asp Ala Arg Leu
            500                 505                 510

Arg Ala Gly Lys Ser Thr Leu Gly Phe Leu Asn Pro Leu Leu Tyr Ser
        515                 520                 525

Ile Leu Ala Glu Gly Phe Thr Asp Ile Thr Ala Gly Ser Ser Ile Gly
    530                 535                 540

Cys Asn Gly Ile Asn Pro Gln Thr Gly Lys Pro Val Pro Gly Gly Gly
545                 550                 555                 560

Ile Ile Pro Tyr Ala His Trp Asn Ala Thr Ala Gly Trp Asp Pro Val
                565                 570                 575

Thr Gly Leu Gly Val Pro Asp Phe Met Lys Leu Lys Glu Leu Val Leu
            580                 585                 590

Ser Leu
```

<210> 159
<211> 605
<212> PRT
<213> Talaromyces stipitatus

<400> 159

```
Met Ser Arg Asn Leu Leu Val Gly Ala Gly Leu Leu Ala Leu Ala Gln
```

1 5 10 15

Leu Ser Gly Gln Ala Leu Ala Ala Ala Ala Leu Val Gly His Glu Ser
20 25 30

Leu Ala Ala Leu Pro Val Gly Trp Asp Lys Val Ser Thr Pro Ala Ala
35 40 45

Gly Thr Asn Ile Gln Leu Ser Val Ala Leu Ala Leu Gln Asn Ile Glu
50 55 60

Gln Leu Glu Asp His Leu Lys Ser Val Ser Thr Pro Gly Ser Ala Ser
65 70 75 80

Tyr Gly Gln Tyr Leu Asp Ser Asp Gly Ile Ala Ala Gln Tyr Gly Pro
85 90 95

Ser Asp Ala Ser Val Glu Ala Val Thr Asn Trp Leu Lys Glu Ala Gly
100 105 110

Val Thr Asp Ile Tyr Asn Asn Gly Gln Ser Ile His Phe Ala Thr Ser
115 120 125

Val Ser Lys Ala Asn Ser Leu Leu Gly Ala Asp Phe Asn Tyr Tyr Ser
130 135 140

Asp Gly Ser Ala Thr Lys Leu Arg Thr Leu Ala Tyr Ser Val Pro Ser
145 150 155 160

Asp Leu Lys Glu Ala Ile Asp Leu Val Ser Pro Thr Thr Tyr Phe Gly
165 170 175

Lys Thr Thr Ala Ser Arg Ser Ile Gln Ala Tyr Lys Asn Lys Arg Ala
180 185 190

Ser Thr Thr Ser Lys Ser Gly Ser Ser Ser Val Gln Val Ser Ala Ser
195 200 205

Cys Gln Thr Ser Ile Thr Pro Ala Cys Leu Lys Gln Met Tyr Asn Val
210 215 220

Gly Asn Tyr Thr Pro Ser Val Ala His Gly Ser Arg Val Gly Phe Gly
225 230 235 240

Ser Phe Leu Asn Gln Ser Ala Ile Phe Asp Asp Leu Phe Thr Tyr Glu
245 250 255

Lys Val Asn Asp Ile Pro Ser Gln Asn Phe Thr Lys Val Ile Ile Ala
260 265 270

Asn Ala Ser Asn Ser Gln Asp Ala Ser Asp Gly Asn Tyr Gly Glu Ala

```
        275                 280                 285

Asn Leu Asp Val Gln Asn Ile Val Gly Ile Ser His Pro Leu Pro Val
    290                 295                 300

Thr Glu Phe Leu Thr Gly Gly Ser Pro Pro Phe Val Ala Ser Leu Asp
305                 310                 315                 320

Thr Pro Thr Asn Gln Asn Glu Pro Tyr Ile Pro Tyr Tyr Glu Tyr Leu
                325                 330                 335

Leu Ser Gln Lys Asn Glu Asp Leu Pro Gln Val Ile Ser Asn Ser Tyr
            340                 345                 350

Gly Asp Asp Glu Gln Ser Val Pro Tyr Lys Tyr Ala Ile Arg Ala Cys
        355                 360                 365

Asn Leu Ile Gly Leu Thr Gly Leu Arg Gly Ile Ser Val Leu Glu Ser
    370                 375                 380

Ser Gly Asp Leu Gly Val Gly Ala Gly Cys Arg Ser Asn Asp Gly Lys
385                 390                 395                 400

Asn Lys Thr Gln Phe Asp Pro Ile Phe Pro Ala Thr Cys Pro Tyr Val
                405                 410                 415

Thr Ser Val Gly Gly Thr Gln Ser Val Thr Pro Glu Ile Ala Trp Val
            420                 425                 430

Ala Ser Ser Gly Gly Phe Ser Asn Tyr Phe Pro Arg Thr Trp Tyr Gln
        435                 440                 445

Glu Pro Ala Ile Gln Thr Tyr Leu Gly Leu Leu Asp Asp Glu Thr Lys
    450                 455                 460

Thr Tyr Tyr Ser Gln Tyr Thr Asn Phe Glu Gly Arg Gly Phe Pro Asp
465                 470                 475                 480

Val Ser Ala His Ser Leu Thr Pro Asp Tyr Gln Val Val Gly Gly Gly
                485                 490                 495

Tyr Leu Gln Pro Ser Gly Gly Thr Ser Ala Ala Ser Pro Val Phe Ala
            500                 505                 510

Gly Ile Ile Ala Leu Leu Asn Asp Ala Arg Leu Ala Ala Gly Lys Pro
        515                 520                 525

Thr Leu Gly Phe Leu Asn Pro Phe Phe Tyr Leu Tyr Gly Tyr Lys Gly
    530                 535                 540

Leu Asn Asp Ile Thr Gly Gly Gln Ser Val Gly Cys Asn Gly Ile Asn
```

545 550 555 560

Gly Gln Thr Gly Ala Pro Val Pro Gly Gly Gly Ile Val Pro Gly Ala
565 570 575

Ala Trp Asn Ser Thr Thr Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr
580 585 590

Pro Asp Phe Gln Lys Leu Lys Glu Leu Val Leu Ser Phe
595 600 605

<210> 160
<211> 604
<212> PRT
<213> Penicillium marneffei

<400> 160

Met Ser Arg Asn Leu Leu Val Gly Ala Gly Leu Leu Ala Leu Ala Gln
1 5 10 15

Leu Asn Pro Val Leu Ala Ala Ser Ala Leu Val Ser His Glu Ala Leu
20 25 30

Ala Thr Leu Pro Pro Gly Trp Asp Lys Val Asn Thr Pro Ala Gly His
35 40 45

Thr Asn Ile Gln Leu Ser Val Ala Leu Thr Leu Gln Asn Ile Glu Gln
50 55 60

Leu Gln Ser His Leu Gln Ser Val Ser Thr Pro Gly Ser Ser Gly Tyr
65 70 75 80

Gly Gln Tyr Leu Asp Ser Asp Asp Ile Ala Ala Gln Tyr Gly Pro Ser
85 90 95

Asp Ala Ser Val Asp Ala Val Thr Lys Trp Leu Lys Glu Ala Gly Ile
100 105 110

Thr Glu Ile His Asn Asn Gly Gln Ser Ile Asn Phe Ala Thr Thr Val
115 120 125

Ser Lys Ala Asn Lys Leu Leu Gly Ala Asp Phe His Tyr Tyr Ser Asp
130 135 140

Gly Gly Ala Thr Lys Leu Arg Thr Leu Ala Tyr Ser Val Pro Ser Asp
145 150 155 160

Leu Gln Ala Ala Ile Asp Leu Val Ser Pro Thr Thr Tyr Phe Gly Lys
165 170 175

Thr Thr Ala Ser Arg Ser Ile Gln Thr Tyr Ser Asn Lys Arg Ala Ser
180 185 190

```
Thr Thr Thr Lys Ser Gly Ser Ser Ser Val Ala Val Ala Ala Ser Cys
        195                 200                 205

Gln Thr Ser Ile Thr Pro Ala Cys Leu Lys Gln Met Tyr Asn Val Gly
    210                 215                 220

Asn Tyr Thr Pro Ser Val Ala Ser Gly Ser Arg Val Gly Phe Gly Ser
225                 230                 235                 240

Phe Leu Asn Gln Ser Ala Ile Tyr Asp Asp Leu Phe Thr Tyr Glu Lys
                245                 250                 255

Val Asn Gly Ile Pro Asn Gln Asn Trp Thr Lys Val Ile Ile Ala Asn
            260                 265                 270

Ala Pro Asn Asp Gln Asp Pro Asn Asp Gly Asn Tyr Gly Glu Ala Asn
        275                 280                 285

Leu Asp Val Gln Asn Ile Val Gly Ile Ser His Pro Leu Pro Val Thr
    290                 295                 300

Glu Phe Leu Thr Gly Gly Ser Pro Pro Phe Val Pro Ser Leu Asp Thr
305                 310                 315                 320

Pro Thr Asn Glu Asn Glu Pro Tyr Ile Pro Tyr Tyr Glu Tyr Leu Leu
                325                 330                 335

Ser Gln Lys Asn Ala Asp Leu Pro Gln Val Ile Ser Asn Ser Tyr Gly
            340                 345                 350

Asp Asp Glu Gln Ser Val Pro Tyr Lys Tyr Ala Val Arg Ala Cys Asn
        355                 360                 365

Leu Ile Gly Leu Thr Gly Leu Arg Gly Ile Thr Val Leu Glu Ser Ser
    370                 375                 380

Gly Asp Leu Gly Val Gly Ala Gly Cys Leu Ser Asn Asp Gly Lys Asn
385                 390                 395                 400

Lys Thr Gln Phe Asp Ala Ile Phe Pro Ala Thr Cys Pro Tyr Ile Thr
                405                 410                 415

Ala Val Gly Gly Thr Gln Ala Val Thr Pro Glu Ile Ala Trp Thr Ala
            420                 425                 430

Ser Ser Gly Gly Phe Ser Tyr Tyr Phe Pro Arg Pro Trp Tyr Gln Arg
        435                 440                 445

Lys Ala Ile Glu Thr Tyr Leu Gly Leu Leu Asp Asp Ser Thr Lys Gln
    450                 455                 460
```

```
Tyr Tyr Ser Gln Tyr Thr Asn Phe Glu Gly Arg Gly Phe Pro Asp Val
465                 470                 475                 480

Ala Ala His Ser Leu Leu Pro Asp Tyr Gln Val Val Gly Gly Gly Glu
                485                 490                 495

Leu Gln Arg Ser Gly Gly Thr Ser Ala Ala Ser Pro Val Phe Ala Gly
            500                 505                 510

Ile Ile Ala Leu Leu Asn Asp Ala Arg Leu Ser Ala Gly Lys Pro Thr
        515                 520                 525

Leu Gly Phe Leu Asn Pro Phe Ile Tyr Tyr Ala Gly Tyr Lys Gly Leu
    530                 535                 540

Asn Asp Ile Thr Gly Gly Lys Ser Ile Gly Cys Asn Gly Val Asn Gly
545                 550                 555                 560

Gln Thr Gly Gly Thr Val Pro Gly Gly Gly Val Val Pro Gly Ala Ala
                565                 570                 575

Trp Asn Cys Thr Thr Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr Pro
            580                 585                 590

Asp Phe Gln Lys Leu Lys Glu Leu Val Leu Ser Phe
        595                 600
```

<210> 161
<211> 600
<212> PRT
<213> Gibberella zeae

<400> 161

```
Met Tyr Ile Thr Ser Ser Arg Leu Val Leu Ala Leu Ala Ala Leu Pro
1               5                   10                  15

Thr Ala Phe Gly Lys Ser Tyr Ser His His Ala Glu Ala Pro Lys Gly
            20                  25                  30

Trp Lys Val Asp Asp Thr Ala Arg Val Ala Ser Thr Gly Lys Gln Gln
        35                  40                  45

Val Phe Ser Ile Ala Leu Thr Met Gln Asn Val Asp Gln Leu Glu Ser
    50                  55                  60

Lys Leu Leu Asp Leu Ser Ser Pro Asp Ser Lys Asn Tyr Gly Gln Trp
65                  70                  75                  80

Met Ser Gln Lys Asp Val Thr Thr Ala Phe Tyr Pro Ser Lys Glu Ala
                85                  90                  95
```

```
Val Ser Ser Val Thr Lys Trp Leu Lys Ser Lys Gly Val Lys His Tyr
            100                 105                 110

Asn Val Asn Gly Gly Phe Ile Asp Phe Ala Leu Asp Val Lys Gly Ala
        115                 120                 125

Asn Ala Leu Leu Asp Ser Asp Tyr Gln Tyr Tyr Thr Lys Glu Gly Gln
    130                 135                 140

Thr Lys Leu Arg Thr Leu Ser Tyr Ser Ile Pro Asp Asp Val Ala Glu
145                 150                 155                 160

His Val Gln Phe Val Asp Pro Ser Thr Asn Phe Gly Gly Thr Leu Ala
                165                 170                 175

Phe Ala Pro Val Thr His Pro Ser Arg Thr Leu Thr Glu Arg Lys Asn
            180                 185                 190

Lys Pro Thr Lys Ser Thr Val Asp Ala Ser Cys Gln Thr Ser Ile Thr
        195                 200                 205

Pro Ser Cys Leu Lys Gln Met Tyr Asn Ile Gly Asp Tyr Thr Pro Lys
    210                 215                 220

Val Glu Ser Gly Ser Thr Ile Gly Phe Ser Ser Phe Leu Gly Glu Ser
225                 230                 235                 240

Ala Ile Tyr Ser Asp Val Phe Leu Phe Glu Glu Lys Phe Gly Ile Pro
                245                 250                 255

Thr Gln Asn Phe Thr Thr Val Leu Ile Asn Asn Gly Thr Asp Asp Gln
            260                 265                 270

Asn Thr Ala His Lys Asn Phe Gly Glu Ala Asp Leu Asp Ala Glu Asn
        275                 280                 285

Ile Val Gly Ile Ala His Pro Leu Pro Phe Thr Gln Tyr Ile Thr Gly
    290                 295                 300

Gly Ser Pro Pro Phe Leu Pro Asn Ile Asp Gln Pro Thr Ala Ala Asp
305                 310                 315                 320

Asn Gln Asn Glu Pro Tyr Val Pro Phe Phe Arg Tyr Leu Leu Ser Gln
                325                 330                 335

Lys Glu Val Pro Ala Val Val Ser Thr Ser Tyr Gly Asp Glu Glu Asp
            340                 345                 350

Ser Val Pro Arg Glu Tyr Ala Thr Met Thr Cys Asn Leu Ile Gly Leu
        355                 360                 365
```

```
Leu Gly Leu Arg Gly Ile Ser Val Ile Phe Ser Ser Gly Asp Ile Gly
    370                 375                 380

Val Gly Ala Gly Cys Leu Gly Pro Asp His Lys Thr Val Glu Phe Asn
385                 390                 395                 400

Ala Ile Phe Pro Ala Thr Cys Pro Tyr Leu Thr Ser Val Gly Gly Thr
                405                 410                 415

Val Asp Val Thr Pro Glu Ile Ala Trp Glu Gly Ser Ser Gly Gly Phe
            420                 425                 430

Ser Lys Tyr Phe Pro Arg Pro Ser Tyr Gln Asp Lys Ala Val Lys Thr
        435                 440                 445

Tyr Met Lys Thr Val Ser Lys Gln Thr Lys Lys Tyr Tyr Gly Pro Tyr
    450                 455                 460

Thr Asn Trp Glu Gly Arg Gly Phe Pro Asp Val Ala Gly His Ser Val
465                 470                 475                 480

Ser Pro Asn Tyr Glu Val Ile Tyr Ala Gly Lys Gln Ser Ala Ser Gly
                485                 490                 495

Gly Thr Ser Ala Ala Ala Pro Val Trp Ala Ala Ile Val Gly Leu Leu
            500                 505                 510

Asn Asp Ala Arg Phe Arg Ala Gly Lys Pro Ser Leu Gly Trp Leu Asn
        515                 520                 525

Pro Leu Val Tyr Lys Tyr Gly Pro Lys Val Leu Thr Asp Ile Thr Gly
    530                 535                 540

Gly Tyr Ala Ile Gly Cys Asp Gly Asn Asn Thr Gln Ser Gly Lys Pro
545                 550                 555                 560

Glu Pro Ala Gly Ser Gly Ile Val Pro Gly Ala Arg Trp Asn Ala Thr
                565                 570                 575

Ala Gly Trp Asp Pro Val Thr Gly Tyr Gly Thr Pro Asp Phe Gly Lys
            580                 585                 590

Leu Lys Asp Leu Val Leu Ser Phe
        595                 600
```

<210> 162
<211> 599
<212> PRT
<213> Fusarium oxysporum

<400> 162

```
Met Tyr Ile Ser Ser Gln Asn Leu Val Leu Ala Leu Ser Ala Leu Pro
1               5                  10                  15

Ser Ala Phe Gly Lys Ser Phe Ser His His Ala Glu Ala Pro Gln Gly
            20                  25                  30

Trp Gln Val Gln Lys Ala Ala Lys Val Ala Ser Asn Thr Gln His Val
        35                  40                  45

Phe Ser Leu Ala Leu Thr Met Gln Asn Val Asp Gln Leu Glu Ser Lys
    50                  55                  60

Leu Leu Asp Leu Ser Ser Pro Asp Ser Ala Asn Tyr Gly Asn Trp Leu
65                  70                  75                  80

Ser His Asp Glu Leu Thr Ser Thr Phe Ser Pro Ser Lys Glu Ala Val
                85                  90                  95

Ala Ser Val Thr Lys Trp Leu Lys Ser Lys Gly Ile Lys His Tyr Lys
            100                 105                 110

Val Asn Gly Ala Phe Ile Asp Phe Ala Ala Asp Val Glu Lys Ala Asn
        115                 120                 125

Thr Leu Leu Gly Gly Asp Tyr Gln Tyr Tyr Thr Lys Asp Gly Gln Thr
    130                 135                 140

Lys Leu Arg Thr Leu Ser Tyr Ser Ile Pro Asp Asp Val Ala Gly His
145                 150                 155                 160

Val Gln Phe Val Asp Pro Ser Thr Asn Phe Gly Gly Thr Val Ala Phe
                165                 170                 175

Asn Pro Val Pro His Pro Ser Arg Thr Leu Gln Glu Arg Lys Val Ser
            180                 185                 190

Pro Ser Lys Ser Thr Val Asp Ala Ser Cys Gln Thr Ser Ile Thr Pro
        195                 200                 205

Ser Cys Leu Lys Gln Met Tyr Asn Val Gly Asp Tyr Thr Pro Asp Ala
    210                 215                 220

Lys Ser Gly Ser Glu Ile Gly Phe Ser Ser Phe Leu Gly Gln Ala Ala
225                 230                 235                 240

Ile Tyr Ser Asp Val Phe Lys Phe Glu Glu Leu Phe Gly Ile Pro Lys
                245                 250                 255

Gln Asn Tyr Thr Thr Ile Leu Ile Asn Asn Gly Thr Asp Asp Gln Asn
            260                 265                 270
```

```
Thr Ala His Lys Asn Tyr Gly Glu Ala Asn Leu Asp Ala Glu Asn Ile
        275                 280                 285

Val Gly Ile Ala His Pro Leu Pro Phe Lys Gln Tyr Ile Thr Gly Gly
    290                 295                 300

Ser Pro Pro Phe Val Pro Asn Ile Asp Gln Pro Thr Glu Lys Asp Asn
305                 310                 315                 320

Gln Asn Glu Pro Tyr Val Pro Phe Phe Arg Tyr Leu Leu Gly Gln Lys
                325                 330                 335

Asp Leu Pro Ala Val Ile Ser Thr Ser Tyr Gly Asp Glu Glu Asp Ser
            340                 345                 350

Val Pro Arg Glu Tyr Ala Thr Leu Thr Cys Asn Met Ile Gly Leu Leu
        355                 360                 365

Gly Leu Arg Gly Ile Ser Val Ile Phe Ser Ser Gly Asp Ile Gly Val
    370                 375                 380

Gly Ser Gly Cys Leu Ala Pro Asp Tyr Lys Thr Val Glu Phe Asn Ala
385                 390                 395                 400

Ile Phe Pro Ala Thr Cys Pro Tyr Leu Thr Ser Val Gly Gly Thr Val
                405                 410                 415

Asp Val Thr Pro Glu Ile Ala Trp Glu Gly Ser Ser Gly Gly Phe Ser
            420                 425                 430

Lys Tyr Phe Pro Arg Pro Ser Tyr Gln Asp Lys Ala Ile Lys Lys Tyr
        435                 440                 445

Met Lys Thr Val Ser Lys Glu Thr Lys Lys Tyr Tyr Gly Pro Tyr Thr
    450                 455                 460

Asn Trp Glu Gly Arg Gly Phe Pro Asp Val Ala Gly His Ser Val Ala
465                 470                 475                 480

Pro Asp Tyr Glu Val Ile Tyr Asn Gly Lys Gln Ala Arg Ser Gly Gly
                485                 490                 495

Thr Ser Ala Ala Ala Pro Val Trp Ala Ala Ile Val Gly Leu Leu Asn
            500                 505                 510

Asp Ala Arg Phe Lys Ala Gly Lys Lys Ser Leu Gly Trp Leu Asn Pro
        515                 520                 525

Leu Ile Tyr Lys His Gly Pro Lys Val Leu Thr Asp Ile Thr Gly Gly
    530                 535                 540
```

```
Tyr Ala Ile Gly Cys Asp Gly Asn Asn Thr Gln Ser Gly Gln Pro Glu
545                 550                 555                 560


Pro Ala Gly Ser Gly Leu Val Pro Gly Ala Arg Trp Asn Ala Thr Ala
                565                 570                 575


Gly Trp Asp Pro Thr Thr Gly Tyr Gly Thr Pro Asn Phe Gln Lys Leu
            580                 585                 590


Lys Asp Leu Val Leu Ser Phe
        595


<210>  163
<211>  637
<212>  PRT
<213>  Grosmannia clavigera

<400>  163

Met Ala Thr Glu His His Ala Arg Thr Arg Ala Ala Val Val Leu His
1               5                   10                  15


Thr Leu Arg Gly Ser Met Ala Thr Leu Ala Leu Ala Val Ser Ser Leu
            20                  25                  30


Leu Leu Leu Pro Ala Ala Glu Ala Ala Val Ile Ser Ser Ile Asp Thr
        35                  40                  45


Val Pro Lys Gly Trp Ser Val Ala Pro Ala Ala Lys Ile Asn Ala Arg
    50                  55                  60


Thr Ser Ser Ala Gln Val Phe Thr Ile Ala Leu Ala Leu Gln Asn Ile
65                  70                  75                  80


Asp Gln Leu Glu Ser His Leu Leu Ser Val Ser Ser Pro Asn Ser Ala
                85                  90                  95


Ser Tyr Gly Ala His Glu Asp Val Glu Gly Ile Thr Ala Lys Tyr Gly
            100                 105                 110


Pro Ser Asp Glu Ala Val Gln Val Val Thr Ala Trp Leu Lys Ser Ser
        115                 120                 125


Ser Ala Val Gln Thr Phe Ser Val Arg Asp Gly Phe Val Asp Val Ala
    130                 135                 140


Ala Thr Val Asp Gly Ala Asn Thr Leu Phe Asn Ala Ser Tyr Asp Phe
145                 150                 155                 160


Tyr Thr His Glu Ala Asn Ala Ala Thr Thr Lys Leu Arg Thr Leu Ser
                165                 170                 175


Tyr Ser Val Pro Asp His Val Ala Ala His Val Ala Leu Val Asp Pro
```

```
            180                 185                 190

Gly Asn Tyr Phe Gly Lys Thr Ala Ala Phe Ala Pro Arg Arg Gly Ala
        195                 200                 205

Pro Ala Pro Val Pro Ala Ser Lys Thr Ala Arg Ser Pro Ser Leu Val
    210                 215                 220

Lys Ala Arg Gly Thr Ser Thr Thr Ile Asp Ala Ala Cys Ser Thr Ser
225                 230                 235                 240

Ile Thr Pro Ala Cys Leu Lys Gln Leu Tyr Asn Val Gly Asn Tyr Thr
                245                 250                 255

Pro Asp Ala Ser Ser Gly Ser Arg Val Gly Phe Gly Ser Phe Leu Asn
            260                 265                 270

Gln Ser Ala Leu Tyr Ala Asp Val Phe Thr Tyr Glu Glu Arg Asn Gly
        275                 280                 285

Ile Ala Ala Gln Asn Phe Thr Val Glu Leu Ile Ala Asn Ala Thr Asn
    290                 295                 300

Asp Gln Asp Lys Trp Thr Ala Ser Val Asp Glu Ala Asn Leu Asp Val
305                 310                 315                 320

Gln Asn Ile Ile Gly Val Ser His Pro Leu Pro Val Ile Glu Tyr Ile
                325                 330                 335

Thr Gly Gly Ser Pro Pro Phe Val Ala Asp Ile Asp Leu Pro Ser Ala
            340                 345                 350

Ala Glu Asn Gln Asn Glu Pro Tyr Leu Pro Tyr Leu Ser Tyr Leu Leu
        355                 360                 365

Ala Lys Ser Asn Ser Glu Leu Pro Gln Ala Ile Ser Asn Ser Tyr Gly
    370                 375                 380

Asp Glu Glu Asp Ser Val Pro Tyr Asn Tyr Ala Asn Tyr Thr Cys Asn
385                 390                 395                 400

Leu Ile Gly Met Leu Gly Leu Arg Gly Ile Thr Val Leu His Ser Ser
                405                 410                 415

Gly Asp Met Gly Val Gly Ala Gly Cys Leu Ala Pro Asp Asn Thr Thr
            420                 425                 430

Val Glu Phe Asn Pro Ile Tyr Pro Ala Thr Cys Pro Tyr Val Thr Ala
        435                 440                 445

Val Gly Gly Thr Val Asn Val Ser Pro Glu Ile Ala Trp Lys Gly Ser
```

450 455 460

Ser Gly Gly Phe Ser Lys Tyr Phe Pro Arg Pro Ser Tyr Gln Asp Lys
465 470 475 480

Ala Val Ser Glu Tyr Leu Ser Asp His Val Asn Ala Ser Thr Val Lys
485 490 495

Tyr Tyr Ala Pro Tyr Thr Asn Phe Ser Gly Arg Gly Phe Pro Asp Val
500 505 510

Ser Ala His Ser Val Ser Pro Ala Tyr Glu Ile Ile Tyr Phe Asp Gln
515 520 525

Pro Gly Pro Ser Gly Gly Thr Ser Ala Ala Ala Pro Val Trp Ala Gly
530 535 540

Ile Val Gly Leu Leu Asn Asp Ala Arg Leu Arg Ser Gly Lys Ser Thr
545 550 555 560

Leu Gly Trp Leu Asn Pro Leu Ile Tyr Thr Tyr Gly Pro Ser Val Leu
565 570 575

Asn Asp Ile Thr Asp Gly Tyr Ser Val Gly Cys Asn Gly Val Asn Tyr
580 585 590

Gln Thr Asp Gln Tyr Glu Pro Ala Gly Ala Gly Ile Val Pro Gly Ala
595 600 605

His Trp Asn Ala Thr Val Gly Trp Asp Pro Val Thr Gly Tyr Gly Thr
610 615 620

Pro Asn Phe Glu Glu Leu Lys Lys Val Val Leu Gly Leu
625 630 635

<210> 164
<211> 594
<212> PRT
<213> Verticillium albo-atrum

<400> 164

Met Val Leu Pro Lys Leu His Ala Cys Val Ser Arg Ala Ala Thr Leu
1 5 10 15

Pro Ala Ser Ile Gln Leu Ile Arg Gln Ala Pro Ala Gly Asp Glu Ile
20 25 30

Gln Leu Gln Ile Ala Leu Lys His Gln Asn Ile His Lys Leu Glu Ser
35 40 45

Thr Leu Arg Ser Val Ser Asp Pro Ser Ser Ser His Tyr Gly Gln Tyr
50 55 60

```
Leu Ser Lys Asp Glu Val Asn Ala Leu Phe Ala Pro Ser Asn His Ser
65                  70                  75                  80

Arg Thr Ala Val Glu Ser Trp Leu Lys Asp Ala Gly Ile Thr Ala Val
                85                  90                  95

Ser Thr Arg Gly Pro Leu Val Asp Phe Val Thr Thr Val Ala Lys Ala
            100                 105                 110

Asn Glu Leu Leu Gly Ala Asp Phe Ala Trp Phe Asp Val Glu Gly His
        115                 120                 125

Lys Lys Leu Arg Thr Thr Glu Tyr Ser Ile Pro Asp Thr Leu Thr Ala
    130                 135                 140

His Ile Asp Leu Val Ala Pro Thr Thr Phe Phe Gly Arg Thr Lys Ser
145                 150                 155                 160

His Arg Met Ile Pro Asp Asp Glu Thr Ser Glu Leu Asp Ala Arg Gln
                165                 170                 175

Ala Arg Asn Thr Thr Thr Cys Leu Ser Val Ile Thr Pro Asp Cys Leu
            180                 185                 190

Glu Glu Ala Tyr Asn Tyr Gly Ser Tyr Lys Ala Asp Pro Ala Ala Gly
        195                 200                 205

Ser Arg Val Ala Phe Ala Ser Phe Leu Asn Gln Ser Ala Arg Gln Glu
    210                 215                 220

Asp Leu Thr Gln Tyr Leu Asn Thr Phe Lys Leu Pro Pro Arg Asn Phe
225                 230                 235                 240

Thr Thr Val Leu Ile Asn Gly Gly Glu Asp His Gln Asp Pro Asn Gly
                245                 250                 255

Asp Ile Gly Glu Ala Asn Leu Asp Ala Gln Phe Leu Ala Ala Val Thr
            260                 265                 270

Lys Asn Leu Pro Leu Lys Gln Phe Ile Thr Gly Gly Ser Pro Pro Phe
        275                 280                 285

Val Pro Asn Leu Arg Ile Thr Asn Ala Ser Thr Asn Ser Asn Glu Pro
    290                 295                 300

Tyr Leu Asp Phe Tyr Glu Thr Leu Leu Ala Thr Asp Asp Glu Gly Val
305                 310                 315                 320

Pro Gln Val Leu Ser Ser Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro
                325                 330                 335
```

```
Val Glu Tyr Ala Lys Arg Val Cys Asn Leu Ile Gly Met Met Gly Leu
            340                 345                 350

Arg Gly Val Thr Val Leu Glu Ser Ser Gly Asp Ala Gly Val Gly Ala
        355                 360                 365

Pro Cys Arg Ala Asn Asp Gly Ser Gly Arg Ala Glu Phe Thr Pro Thr
    370                 375                 380

Phe Pro Gly Thr Cys Pro Tyr Leu Thr Ala Val Gly Gly Thr Gln Ala
385                 390                 395                 400

Trp Ala Pro Glu Val Ala Trp Val Gly Ser Ala Gly Gly Phe Ser Asn
                405                 410                 415

Tyr Phe Glu Arg Ala Trp Tyr Gln Lys Ala Ala Val Lys Thr Tyr Leu
            420                 425                 430

Lys Glu Ser Ile Pro Ala Glu Val Lys Ser Tyr Tyr Lys His Gly Gly
        435                 440                 445

Phe Val Asp Phe Gly Gly Arg Gly Phe Pro Asp Ile Ser Ala His Ser
    450                 455                 460

Leu Glu Pro Trp Tyr Gln Phe Val Asn Ala Gly Arg Pro Arg Arg Thr
465                 470                 475                 480

Gly Gly Thr Ser Ala Ala Ala Pro Val Val Ala Gly Ile Ile Gly Leu
                485                 490                 495

Leu Asn Asp Ala Arg Leu Arg Ala Gly Gln Pro Thr Met Gly Phe Leu
            500                 505                 510

Asn Pro Trp Leu Tyr Ala Arg Gly Val Asp Gly Leu Leu Asp Val Thr
        515                 520                 525

Glu Gly Lys Ala Glu Gly Cys Gly Gly Ile Asp Leu Gln Ser Gly Asn
    530                 535                 540

Pro Val Pro Gly Ala Gly Val Ile Pro Trp Ala Ser Trp Asn Ala Thr
545                 550                 555                 560

Lys Gly Ala Ala Thr Asp Cys Gly Gln Trp His Gln Gly Met Ile Trp
                565                 570                 575

Cys Cys Trp Val Pro Val Val Ala Met Tyr Leu Glu Met Leu Arg Glu
            580                 585                 590

Gln Gly
```

<210> 165
<211> 566
<212> PRT
<213> Verticillium dahliae

<400> 165

```
Met Val Leu Leu Lys Leu His Ala Cys Val Ala Ala Thr Leu Val Ala
1               5                   10                  15

Leu Thr Glu Ala Leu Leu Val Ser Arg Ala Ala Thr Leu Pro Ala Ser
            20                  25                  30

Ile Gln Leu Ile Arg Gln Ala Pro Ala Gly Asp Glu Ile Gln Leu Gln
        35                  40                  45

Ile Ala Leu Lys His Gln Asn Ile His Lys Leu Glu Ser Lys Leu Arg
    50                  55                  60

Ser Val Ser Asp Pro Ser Ser Ser His Tyr Gly Gln Tyr Leu Ser Lys
65                  70                  75                  80

Asp Glu Val Asn Ala Leu Phe Ala Pro Ser Asn His Ser Arg Thr Ala
                85                  90                  95

Val Glu Ser Trp Leu Lys Asp Ala Gly Ile Thr Ala Val Ser Ser Arg
            100                 105                 110

Gly Pro Leu Val Asp Phe Val Thr Thr Val Ala Lys Ala Asn Glu Leu
        115                 120                 125

Leu Gly Ala Asp Phe Ala Trp Phe Asp Val Glu Gly His Lys Lys Leu
    130                 135                 140

Arg Thr Thr Glu Tyr Ser Ile Pro Asp Thr Leu Thr Ala His Ile Asp
145                 150                 155                 160

Leu Val Ala Pro Thr Thr Phe Phe Gly Arg Thr Lys Ser His Arg Met
                165                 170                 175

Ile Pro Asp Asp Glu Thr Ser Glu Leu Asp Ser Arg Gln Ala Arg Asn
            180                 185                 190

Thr Thr Thr Cys Leu Ser Val Ile Thr Pro Asp Cys Leu Glu Glu Ala
        195                 200                 205

Tyr Asn Tyr Gly Ser Tyr Lys Ala Asp Pro Ala Ala Gly Ser Arg Val
    210                 215                 220

Ala Phe Ala Ser Phe Leu Asn Gln Ser Ala Arg Gln Glu Asp Leu Thr
225                 230                 235                 240
```

```
Gln Tyr Leu Asn Thr Phe Lys Leu Pro Pro Arg Asn Phe Thr Thr Val
                245                 250                 255

Leu Ile Asn Gly Gly Glu Asp His Gln Asp Pro Asn Gly Asp Ile Gly
            260                 265                 270

Glu Ala Asn Leu Asp Ala Gln Phe Leu Ala Ala Val Thr Lys Asn Leu
        275                 280                 285

Pro Leu Lys Gln Phe Ile Thr Gly Gly Ser Pro Pro Phe Val Pro Asn
    290                 295                 300

Leu Arg Ile Thr Asn Ala Ser Thr Asn Ser Asn Glu Pro Tyr Leu Asp
305                 310                 315                 320

Phe Tyr Glu Thr Leu Leu Ala Thr Asp Asp Glu Gly Val Pro Gln Val
                325                 330                 335

Leu Ser Ser Ser Tyr Gly Asp Asp Glu Gln Thr Val Pro Val Glu Tyr
            340                 345                 350

Ala Lys Arg Val Cys Asn Leu Ile Gly Met Met Gly Leu Arg Gly Val
        355                 360                 365

Thr Val Leu Glu Ser Ser Gly Asp Ala Gly Ala Trp Ala Pro Glu Val
    370                 375                 380

Ala Trp Val Gly Ser Ala Gly Gly Phe Ser Asn Tyr Phe Glu Arg Ala
385                 390                 395                 400

Trp Tyr Gln Lys Ala Ala Val Lys Thr Tyr Leu Glu Glu Ser Ile Pro
                405                 410                 415

Val Glu Val Lys Ser Tyr Tyr Lys Arg Gly Gly Phe Val Asp Phe Gly
            420                 425                 430

Gly Arg Gly Phe Pro Asp Ile Ser Ala His Ser Leu Glu Pro Trp Tyr
        435                 440                 445

Gln Phe Val Asn Ala Gly Arg Pro Arg Arg Thr Gly Gly Thr Ser Ala
    450                 455                 460

Ala Ala Pro Val Val Ala Gly Ile Ile Gly Leu Leu Asn Asp Ala Arg
465                 470                 475                 480

Leu Arg Ala Gly Gln Pro Thr Met Gly Phe Leu Asn Pro Trp Leu Tyr
                485                 490                 495

Ala Arg Gly Val Asp Gly Leu Leu Asp Val Thr Glu Gly Lys Ala Glu
            500                 505                 510
```

```
Gly Cys Gly Gly Ile Asp Leu Gln Ser Gly Asn Pro Val Pro Gly Ala
        515                 520                 525

Gly Val Ile Pro Trp Ala Ser Trp Asn Ala Thr Lys Gly Trp Asp Pro
    530                 535                 540

Val Thr Gly Leu Gly Leu Pro Asp Phe Glu Ala Leu Arg Gln Ile Ala
545                 550                 555                 560

Val Asn Gly Thr Lys Ala
                565
```

<210> 166
<211> 391
<212> PRT
<213> Trichoderma reesei

<400> 166

```
Met Arg Leu Ser Val Leu Leu Ser Val Leu Pro Leu Val Leu Ala Ala
1               5                   10                  15

Pro Ala Ile Glu Lys Arg Ala Glu Pro Ala Pro Leu Leu Val Pro Thr
            20                  25                  30

Thr Lys His Gly Leu Val Ala Asp Lys Tyr Ile Val Lys Phe Lys Asp
        35                  40                  45

Gly Ser Ser Leu Gln Ala Val Asp Glu Ala Ile Ser Gly Leu Val Ser
    50                  55                  60

Asn Ala Asp His Val Tyr Gln His Val Phe Arg Gly Phe Ala Ala Thr
65                  70                  75                  80

Leu Asp Lys Glu Thr Leu Glu Ala Leu Arg Asn His Pro Glu Val Asp
                85                  90                  95

Tyr Ile Glu Gln Asp Ala Val Val Lys Ile Asn Ala Tyr Val Ser Gln
            100                 105                 110

Thr Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Lys Ala Arg Gly
        115                 120                 125

Ser Thr Thr Tyr Val Tyr Asp Asp Ser Ala Gly Ala Gly Thr Cys Ser
    130                 135                 140

Tyr Val Ile Asp Thr Gly Val Asp Ala Thr His Pro Asp Phe Glu Gly
145                 150                 155                 160

Arg Ala Thr Leu Leu Arg Ser Phe Val Ser Gly Gln Asn Thr Asp Gly
                165                 170                 175
```

```
Asn Gly His Gly Thr His Val Ser Gly Thr Ile Gly Ser Arg Thr Tyr
            180                 185                 190

Gly Val Ala Lys Lys Thr Gln Ile Tyr Gly Val Lys Val Leu Asp Asn
        195                 200                 205

Ser Gly Ser Gly Ser Phe Ser Thr Val Ile Ala Gly Met Asp Tyr Val
    210                 215                 220

Ala Ser Asp Ser Gln Thr Arg Asn Cys Pro Asn Gly Ser Val Ala Asn
225                 230                 235                 240

Met Ser Leu Gly Gly Gly Tyr Thr Ala Ser Val Asn Gln Ala Ala Ala
                245                 250                 255

Arg Leu Ile Gln Ala Gly Val Phe Leu Ala Val Ala Ala Gly Asn Asp
            260                 265                 270

Gly Val Asp Ala Arg Asn Thr Ser Pro Ala Ser Glu Pro Thr Val Cys
        275                 280                 285

Thr Val Gly Ala Ser Thr Ser Ser Asp Ala Arg Ala Ser Phe Ser Asn
    290                 295                 300

Tyr Gly Ser Val Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser
305                 310                 315                 320

Thr Trp Pro Asn Arg Gln Thr Asn Thr Ile Ser Gly Thr Ser Met Ala
                325                 330                 335

Thr Pro His Ile Val Gly Leu Gly Ala Tyr Leu Ala Gly Leu Glu Gly
            340                 345                 350

Phe Ser Asp Pro Gln Ala Leu Cys Ala Arg Ile Gln Ser Leu Ala Asn
        355                 360                 365

Arg Asn Leu Leu Ser Gly Ile Pro Ser Gly Thr Ile Asn Ala Ile Ala
    370                 375                 380

Phe Asn Gly Asn Pro Ser Gly
385                 390


<210>  167
<211>  371
<212>  PRT
<213>  Trichoderma atroviride

<400>  167

Met Ala Ala Pro Ser Arg Arg Ala Ser Pro Ala Pro Val Leu Val Pro
1               5                   10                  15

Arg Gly Ala Gln Val Leu Glu Gly Arg Tyr Ile Val Lys Met Lys Thr
```

```
            20                  25                  30

Glu Ala Gln Val Ser Ala Val Glu Ser Ala Leu Ser Gly Val Ser Ala
        35                  40                  45

Gly Ala Ser His Arg Tyr Ser His Ser Phe Ser Gly Phe Ala Ala Ser
    50                  55                  60

Leu Thr Pro Gly Glu Leu Glu Ile Leu Gln Asn Asp Pro Asn Val Asp
65                  70                  75                  80

Phe Ile Glu Gln Asp Ala Thr Val Ser Thr Lys Ala Ile Val Thr Glu
                85                  90                  95

Gly Ser Ala Asp Trp Gly Leu Ser Arg Ile Ser Asn Lys Lys Pro Asp
            100                 105                 110

Thr Thr Arg Tyr Ser Tyr Asp Ser Ser Ala Gly Glu Gly Thr Cys Ala
        115                 120                 125

Phe Val Ile Asp Thr Gly Ile Asp Val His His Pro Glu Phe Glu Gly
    130                 135                 140

Arg Ala Lys Phe Leu Glu Asn Phe Val Gly Asp Gly Ser Asp Ala Asp
145                 150                 155                 160

Leu Phe Gly His Gly Thr His Val Ser Gly Ile Ile Ala Gly Lys Thr
                165                 170                 175

Phe Gly Val Ala Lys Lys Ala Ser Leu Phe Ala Val Lys Val Leu Asp
            180                 185                 190

Val Asn Gly Gln Gly Asn Asn Ser Val Ile Ile Ala Gly Met Asp Tyr
        195                 200                 205

Val Ala Lys Asn Ala Ser Ser Gln His Cys Pro Lys Gly Ile Val Val
    210                 215                 220

Asn Met Ser Leu Gly Gly Ile Lys Thr Asp Ala Val Asn Gln Ala Ala
225                 230                 235                 240

Ile Ser Ile Thr Asn Ala Gly Leu Phe Leu Ala Ala Ala Ala Gly Asn
                245                 250                 255

Asp Ala Leu Asp Ala Ala Asp Phe Ser Pro Ala Cys Val Pro Ala Val
            260                 265                 270

Cys Thr Val Gly Ala Thr Asp Arg Asn Asp Thr Phe Ala Leu Tyr Ser
        275                 280                 285

Asn Arg Gly Ser Ala Val Asp Ile Leu Ala Pro Gly Thr Asn Ile Thr
```

290 295 300

Ser Ser Trp Pro Gly Asn Leu Thr Lys Val Met Ser Gly Thr Ser Met
305 310 315 320

Ala Ser Pro His Val Ala Gly Leu Gly Ala Tyr Leu Leu Gly Leu Gly
325 330 335

Gln Lys Ile Gly Gly Leu Cys Gly Thr Ile Ser Ser Ser Ala Leu Lys
340 345 350

Gly Ala Ile Lys Gly Val Pro Glu Ser Thr Val Asn Leu Leu Val Gln
355 360 365

Asn Gly Ala
370

<210> 168
<211> 391
<212> PRT
<213> Trichoderma virens

<400> 168

Met Arg Leu Ser Val Leu Leu Ser Leu Leu Pro Met Val Leu Ala Ala
1 5 10 15

Pro Ala Ile Glu Lys Arg Ala Glu Pro Ala Pro Leu Phe Lys Pro Thr
20 25 30

Ser Lys His Gly Leu Val Ala Asp Gln Tyr Ile Val Lys Phe Lys Glu
35 40 45

Gly Ser Ser Leu Gln Ala Val Asp Glu Thr Leu Thr Arg Ile Ala Ser
50 55 60

Asp Ala His His Val Tyr Gln His Val Phe Asn Gly Phe Ala Gly Lys
65 70 75 80

Leu Asp Gln Glu Thr Leu Glu Ala Leu Arg Asn His Pro Asp Val Glu
85 90 95

Tyr Ile Glu Gln Asp Ala Ile Val Lys Val Asn Ala Phe Val Gln Gln
100 105 110

Thr Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Lys Ala Arg Gly
115 120 125

Ser Thr Thr Tyr Val Tyr Asp Asp Ser Ala Gly Ala Gly Thr Cys Ala
130 135 140

Tyr Ile Ile Asp Thr Gly Val Asp Ala Thr His Pro Glu Phe Glu Gly
145 150 155 160

```
Arg Ala Thr Phe Leu Lys Thr Tyr Val Ser Gly Gln Asn Thr Asp Gly
                165                 170                 175

Asn Gly His Gly Thr His Val Ala Gly Thr Ile Gly Ser Arg Ser Tyr
            180                 185                 190

Gly Val Ala Lys Lys Thr Gln Leu Phe Gly Val Lys Val Leu Asp Asn
        195                 200                 205

Ser Gly Ser Gly Thr Phe Ala Asn Val Ile Ala Gly Met Asp Phe Val
    210                 215                 220

Ala Ser Asp Ser Lys Thr Arg Asn Cys Pro Asn Gly Ser Val Ala Asn
225                 230                 235                 240

Met Ser Leu Gly Gly Gly Val Ser Ser Ala Val Asn Glu Ala Ala Ala
                245                 250                 255

Ala Leu Ile Ala Ala Asp Val Phe Leu Ala Val Ala Ala Gly Asn Asp
            260                 265                 270

Gly Thr Asp Ala Arg Asn Thr Ser Pro Ala Ser Glu Pro Thr Val Cys
        275                 280                 285

Thr Val Gly Ala Thr Thr Ser Ala Asp Ala Arg Ala Ser Phe Ser Asn
    290                 295                 300

Tyr Gly Ser Val Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser
305                 310                 315                 320

Thr Trp Pro Ser Gly Arg Thr Asn Thr Ile Ser Gly Thr Ser Met Ala
                325                 330                 335

Thr Pro His Ile Val Gly Leu Gly Ala Tyr Leu Leu Ser Leu Glu Gly
            340                 345                 350

His Ile Ala Pro Gln Ala Leu Cys Ser Arg Ile Gln Ser Leu Ala Gly
        355                 360                 365

Lys Ser Leu Leu Ser Gly Ile Pro Ser Gly Thr Ile Asn Ala Val Ala
    370                 375                 380

Phe Asn Gly Asn Pro Ser Gly
385                 390
```

<210> 169
<211> 391
<212> PRT
<213> Hypocrea koningii

<400> 169

```
Met Arg Leu Ser Val Leu Leu Ser Val Leu Pro Leu Val Leu Val Ala
1               5                  10                  15

Pro Ala Thr Glu Lys Arg Ala Glu Pro Ala Pro Leu Leu Val Pro Thr
            20                  25                  30

Thr Lys His Gly Leu Val Ala Asp Lys Tyr Ile Val Lys Phe Lys Asp
        35                  40                  45

Gly Ser Ser Leu Gln Ala Val Asp Glu Ala Ile Ser Gly Leu Val Ser
    50                  55                  60

Asn Ala Asp His Val Tyr Gln His Val Phe Arg Gly Phe Ala Ala Thr
65                  70                  75                  80

Leu Asp Lys Lys Thr Leu Glu Thr Leu Arg Asn His Pro Glu Val Asp
                85                  90                  95

Tyr Ile Glu Gln Asp Ala Val Val Lys Ile Asn Ser Tyr Val Ser Gln
            100                 105                 110

Ser Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Lys Ala Arg Gly
        115                 120                 125

Ser Thr Thr Tyr Val Tyr Asp Asp Ser Ala Gly Ala Gly Thr Cys Ser
    130                 135                 140

Tyr Val Ile Asp Thr Gly Val Asp Ala Ala His Pro Asp Phe Glu Gly
145                 150                 155                 160

Arg Ala Thr Leu Leu Arg Ser Phe Val Ser Gly Gln Asn Thr Asp Gly
                165                 170                 175

Asn Gly His Gly Thr His Val Ser Gly Thr Ile Gly Ser Arg Thr Tyr
            180                 185                 190

Gly Val Ala Lys Lys Thr Gln Ile Tyr Gly Ile Lys Val Leu Asp Asn
        195                 200                 205

Ser Gly Ser Gly Ser Phe Ser Thr Val Ile Ala Gly Met Asp Tyr Val
    210                 215                 220

Ala Ser Asp Ser Gln Thr Arg Asn Cys Pro Asn Gly Ser Val Ala Asn
225                 230                 235                 240

Met Ser Leu Gly Gly Gly Tyr Thr Ala Ser Val Asn Gln Ala Ala Ala
                245                 250                 255

Arg Leu Ile Gln Ala Gly Val Phe Leu Ala Val Ala Ala Gly Asn Asp
            260                 265                 270
```

```
Gly Val Asp Ala Arg Asn Thr Ser Pro Ala Ser Glu Pro Ser Val Cys
        275                 280                 285

Thr Val Gly Ala Ser Thr Ser Ser Asp Ala Arg Ala Ser Phe Ser Asn
    290                 295                 300

Tyr Gly Ser Val Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser
305                 310                 315                 320

Thr Trp Pro Asn Arg Gln Thr Asn Ala Ile Ser Gly Thr Ser Met Ala
                325                 330                 335

Thr Pro His Ile Val Gly Leu Gly Ala Tyr Leu Ala Gly Leu Glu Gly
            340                 345                 350

Phe Ser Asp Pro Gln Ala Leu Cys Ala Arg Ile Gln Ala Leu Ala Gly
        355                 360                 365

Arg Asn Leu Leu Ser Gly Ile Pro Ser Gly Thr Ile Asn Ala Ile Ala
    370                 375                 380

Phe Asn Gly Asn Pro Ser Gly
385                 390


<210>  170
<211>  390
<212>  PRT
<213>  Purpureocillium lilacinum

<400>  170

Met Lys Leu Ser Leu Leu Phe Ala Ile Leu Pro Ala Val Leu Ala Ala
1               5                   10                  15

Pro Ala Val Lys Arg Asp Glu Pro Ala Pro Leu Leu Thr Pro Arg Gly
            20                  25                  30

Ala Ser Gln Leu Ile Asn Gly Lys Tyr Ile Val Lys Phe Lys Asp Gly
        35                  40                  45

Met Ser Ile Ala Ser Val Asp Lys Thr Val Ser Ala Leu Ser Ser Lys
    50                  55                  60

Ala Asp Arg Val Tyr Asn His Ile Phe Arg Gly Phe Ala Gly Asn Leu
65                  70                  75                  80

Asn Ala Asn Asp Leu Lys Thr Leu Arg Asp His Pro Asp Val Glu Tyr
                85                  90                  95

Ile Glu Gln Asp Ala Ile Ile Thr Ile Asn Ala Tyr Thr Gln Gln Pro
            100                 105                 110
```

```
Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Arg Ser Lys Gly Ser
        115                 120                 125

Thr Thr Tyr Glu Tyr Asp Thr Ser Gly Gly Ser Gly Thr Cys Ala Tyr
    130                 135                 140

Val Ile Asp Thr Gly Val Glu Ala Ser His Pro Glu Phe Glu Gly Arg
145                 150                 155                 160

Ala Ser Gln Ile Lys Ser Phe Ile Ser Gly Gln Asn Thr Asp Gly Asn
                165                 170                 175

Gly His Gly Thr His Cys Ala Gly Thr Ile Gly Ser Lys Thr Tyr Gly
            180                 185                 190

Val Ala Lys Lys Thr Lys Ile Tyr Gly Val Lys Val Leu Asp Asn Ser
        195                 200                 205

Gly Ser Gly Ser Tyr Ser Gly Ile Ile Ser Gly Met Asp Phe Ala Val
    210                 215                 220

Gln Asp Ser Lys Thr Arg Ser Cys Pro Lys Gly Val Val Ala Asn Met
225                 230                 235                 240

Ser Leu Gly Gly Gly Lys Ala Gln Ser Val Asn Asp Gly Ala Ala Ala
                245                 250                 255

Met Ile Arg Ala Gly Val Phe Leu Ala Val Ala Ala Gly Asn Asp Asn
            260                 265                 270

Ala Asn Ala Ala Asn Tyr Ser Pro Ala Ser Glu Pro Thr Val Cys Thr
        275                 280                 285

Val Gly Ala Thr Thr Ser Ser Asp Ala Arg Ser Ser Phe Ser Asn Tyr
    290                 295                 300

Gly Ser Leu Val Asp Ile Phe Ala Pro Gly Ser Asn Ile Leu Ser Thr
305                 310                 315                 320

Trp Ile Gly Gly Thr Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
                325                 330                 335

Pro His Ile Val Gly Leu Gly Ala Tyr Leu Ala Gly Leu Glu Gly Phe
            340                 345                 350

Pro Gly Ala Gln Ala Leu Cys Lys Arg Ile Gln Thr Leu Ser Thr Lys
        355                 360                 365

Asn Val Leu Thr Gly Ile Pro Ser Gly Thr Val Asn Tyr Leu Ala Phe
    370                 375                 380
```

Asn Gly Asn Pro Ser Gly
385 390

<210> 171
<211> 388
<212> PRT
<213> Metarhizium anisopliae

<400> 171

Met His Leu Ser Ala Leu Leu Thr Leu Leu Pro Ala Val Leu Ala Ala
1 5 10 15

Pro Ala Thr Ile Gly Arg Arg Ala Glu Pro Ala Pro Leu Phe Thr Pro
20 25 30

Gln Ala Glu Ser Ile Ile Ala Asp Lys Tyr Ile Val Lys Phe Lys Asp
35 40 45

Asp Ile Ala Arg Ile Ala Thr Asp Asp Thr Val Ser Ala Leu Thr Ser
50 55 60

Lys Ala Asp Phe Val Tyr Glu His Ala Phe His Gly Phe Ala Gly Ser
65 70 75 80

Leu Thr Lys Glu Glu Leu Lys Met Leu Arg Glu His Pro Gly Val Asp
85 90 95

Phe Ile Glu Lys Asp Ala Val Met Arg Ile Ser Gly Ile Thr Glu Gln
100 105 110

Ser Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Arg Ser Lys Gly
115 120 125

Ser Thr Thr Tyr Arg Tyr Asp Asp Ser Ala Gly Gln Gly Thr Cys Val
130 135 140

Tyr Ile Ile Asp Thr Gly Ile Glu Ala Ser His Pro Glu Phe Glu Gly
145 150 155 160

Arg Ala Thr Phe Leu Lys Ser Phe Ile Ser Gly Gln Asn Thr Asp Gly
165 170 175

His Gly His Gly Thr His Cys Ala Gly Thr Ile Gly Ser Lys Thr Tyr
180 185 190

Gly Val Ala Lys Lys Ala Lys Leu Tyr Gly Val Lys Val Leu Asp Asn
195 200 205

Gln Gly Ser Gly Ser Tyr Ser Gly Ile Ile Ser Gly Met Asp Tyr Val
210 215 220

Ala Gln Asp Ser Lys Thr Arg Gly Cys Pro Asn Gly Ala Ile Ala Ser

225 230 235 240

Met Ser Leu Gly Gly Gly Tyr Ser Ala Ser Val Asn Gln Gly Ala Ala
245 250 255

Ala Leu Val Asn Ser Gly Val Phe Leu Ala Val Ala Ala Gly Asn Asp
260 265 270

Asn Arg Asp Ala Gln Asn Thr Ser Pro Ala Ser Glu Pro Ser Ala Cys
275 280 285

Thr Val Gly Ala Ser Ala Glu Asn Asp Ser Arg Ser Ser Phe Ser Asn
290 295 300

Tyr Gly Arg Val Val Asp Ile Phe Ala Pro Gly Ser Asn Val Leu Ser
305 310 315 320

Thr Trp Ile Gly Gly Arg Thr Asn Thr Ile Ser Gly Thr Ser Met Ala
325 330 335

Thr Pro His Ile Ala Gly Leu Ala Ala Tyr Leu Ser Ala Leu Gln Gly
340 345 350

Lys Thr Thr Pro Ala Ala Leu Cys Lys Lys Ile Gln Asp Thr Ala Thr
355 360 365

Lys Asn Val Leu Thr Gly Val Pro Ser Gly Thr Val Asn Tyr Leu Ala
370 375 380

Tyr Asn Gly Ala
385

<210> 172
<211> 389
<212> PRT
<213> Hirsutella rhossiliensis

<400> 172

Met Lys Leu Ser Leu Ile Leu Ala Ile Leu Pro Ala Val Leu Ala Ala
1 5 10 15

Pro Ala Thr Lys Arg Asp Glu Pro Ala Pro Leu Leu Ile Pro Arg Gly
20 25 30

Ser Lys Gln Leu Ile Ala Asp Lys Tyr Ile Val Lys Phe Lys Asp Ser
35 40 45

Met Ser Ile Ala Ala Val Asp Lys Thr Val Lys Ala Leu Ser Asn Lys
50 55 60

Ala Asp His Val Tyr Thr Asn Thr Phe Arg Gly Phe Ala Gly Gln Leu
65 70 75 80

```
Ser Ala Lys Asp Val Lys Ala Leu Arg Glu Arg Pro Asp Val Glu Tyr
                85                  90                  95

Val Glu Gln Asp Ser Ile Val Thr Ile Asn Ala Leu Lys Gln Gln Pro
            100                 105                 110

Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser His Arg Glu Pro Gly Ser
        115                 120                 125

Thr Thr Tyr Val Tyr Asp Ser Ser Ala Gly Gln Gly Thr Cys Ala Tyr
    130                 135                 140

Val Ile Asp Thr Gly Val Glu Ala Ser His Pro Glu Phe Glu Gly Arg
145                 150                 155                 160

Ala Thr Met Val Arg Ser Phe Ile Asn Gly Gln Ala Thr Asp Gly His
                165                 170                 175

Gly His Gly Thr His Cys Ala Gly Thr Ile Gly Ser Lys Thr Tyr Gly
            180                 185                 190

Val Ala Lys Lys Thr Lys Ile Tyr Gly Val Lys Val Leu Ser Asn Gln
        195                 200                 205

Gly Ser Gly Ala Val Ser Val Ile Ile Ala Gly Met Asp Phe Ala Val
    210                 215                 220

Gln Asp Ser Arg Lys Arg Ser Cys Pro Lys Gly Val Val Ala Asn Met
225                 230                 235                 240

Ser Leu Gly Gly Gly Phe Ser Ala Ala Ile Asn Asn Ala Ala Ala Ser
                245                 250                 255

Met Ile Arg Ser Gly Val Phe Leu Ala Val Ala Ala Gly Asn Asp Asn
            260                 265                 270

Thr Asp Ala Ser Gly Ser Ser Pro Ala Ser Glu Pro Thr Val Cys Thr
        275                 280                 285

Val Gly Ala Ser Thr Ile Ser Asp Gln Arg Ser Ser Phe Ser Asn Tyr
    290                 295                 300

Gly Ser Val Val Asp Ile Phe Ala Pro Gly Ser Asp Ile Leu Ser Thr
305                 310                 315                 320

Trp Ile Gly Gly Arg Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
                325                 330                 335

Pro His Ile Ala Gly Leu Gly Ala Tyr Leu Ala Gly Leu Glu Gly Phe
            340                 345                 350
```

```
Ser Asp Pro Gln Ala Leu Cys Ser Arg Ile Gln Glu Leu Ala Thr Ser
        355                 360                 365

Asp Val Leu Thr Asp Ile Pro Asp Gly Thr Val Asn Lys Leu Ala Phe
    370                 375                 380

Asn Gly Ala Ser Gln
385

<210>  173
<211>  389
<212>  PRT
<213>  Tolypocladium inflatum

<400>  173

Met Arg Leu Ser Ile Leu Leu Ser Ile Leu Pro Met Val Leu Ala Ala
1               5                   10                  15

Pro Ala Ala Lys Arg Asp Glu Pro Ala Pro Leu Leu Val Pro Arg Gly
            20                  25                  30

Asn His Glu Leu Ile Ala Asp Lys Tyr Ile Val Lys Phe Lys Glu Gly
        35                  40                  45

Ser Ala Leu Ser Val Leu Glu Asp Thr Met Ser Ser Leu Thr Gly Asn
    50                  55                  60

Ala Asp His Val Tyr Asp Val Val Phe Lys Gly Phe Ala Gly His Leu
65                  70                  75                  80

Asp Lys Val Met Leu Asp Val Leu Arg Gly His Pro Asp Val Glu Tyr
                85                  90                  95

Ile Glu Gln Asp Ala Met Val Thr Ile Asn Gly Phe Val Ser Gln Pro
            100                 105                 110

Gly Ala Thr Trp Gly Leu Gly Arg Val Ser His Arg Gln Pro Gly Ala
        115                 120                 125

Thr Ser Tyr Asp His Asp Ser Ser Ala Gly Ala Gly Thr Cys Ala Tyr
    130                 135                 140

Val Ile Asp Thr Gly Val Glu Ala Ser His Pro Glu Phe Glu Gly Arg
145                 150                 155                 160

Ala Ala Gln Val Lys Ser Phe Ile Asn Gly Gln Asn Ser Asp Gly Asn
                165                 170                 175

Gly His Gly Thr His Val Ser Gly Thr Ile Gly Ser Lys Ser Tyr Gly
            180                 185                 190
```

```
Ile Ala Lys Lys Thr Lys Ile Tyr Gly Val Lys Val Leu Asp Asn Gln
        195                 200                 205

Gly Ser Gly Ser Phe Ser Ser Ile Ile Ala Gly Met Asp Phe Val Ala
    210                 215                 220

Lys Asp Ala Lys Thr Arg Gly Cys Pro Lys Gly Ala Val Ala Asn Met
225                 230                 235                 240

Ser Leu Gly Gly Gly Tyr Ala Ala Ser Val Asn Gln Ala Ala Ala Ala
                245                 250                 255

Leu Val Asn Ser Gly Val Phe Leu Gly Val Ala Ala Gly Asn Ser Asn
            260                 265                 270

Thr Asp Ala Gly Ser Thr Ser Pro Ala Ser Glu Thr Ser Ala Cys Thr
        275                 280                 285

Val Gly Ala Thr Asp Arg Asn Asp Asn Arg Ser Ser Phe Ser Asn Tyr
    290                 295                 300

Gly Ser Val Val Asp Ile Phe Gly Pro Gly Ser Asp Ile Leu Ser Thr
305                 310                 315                 320

Trp Ile Gly Gly Arg Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
                325                 330                 335

Pro His Ile Val Gly Leu Ala Ala Tyr Ile Gly Gly Leu Glu Gly Arg
            340                 345                 350

Thr Gly Gly Ala Val Cys Asn Arg Leu Gln Glu Leu Ala Thr Arg Asn
        355                 360                 365

Ala Ile Arg Gly Val Pro Ser Gly Thr Lys Asn Leu Leu Ala Phe Asn
    370                 375                 380

Gly Asn Pro Ser Gly
385


<210>  174
<211>  387
<212>  PRT
<213>  Metacordyceps chlamydosporia

<400>  174

Met Gln Leu Ser Val Leu Leu Thr Leu Leu Pro Ala Val Leu Ala Ala
1               5                   10                  15

Pro Ala Ile Val Glu Gln Arg Ala Glu Pro Ala Pro Leu Phe Thr Pro
            20                  25                  30
```

```
Lys Ser Ser Ile Ile Ala Gly Lys Tyr Ile Val Lys Phe Lys Asp Gly
        35                  40                  45

Val Ala Arg Ile Ala Ala Asp Glu Ala Thr Ser Ala Leu Ser Ala Lys
    50                  55                  60

Ala Asp His Val Tyr Ser His Leu Phe Asn Gly Phe Ala Gly Ser Leu
65                  70                  75                  80

Thr Lys Glu Glu Leu Gln Thr Leu Arg Asn His Pro Asp Val Asp Phe
                85                  90                  95

Ile Glu Lys Asp Ala Val Met Thr Ala Asn Ala Ile Val Glu Gln Gln
            100                 105                 110

Gly Ala Pro Trp Gly Leu Gly Arg Ile Ser Asn Arg Gln Lys Gly Ser
        115                 120                 125

Thr Thr Tyr Arg Tyr Asp Asp Ser Ala Gly Asn Gly Ala Cys Val Tyr
    130                 135                 140

Val Leu Asp Thr Gly Ile Glu Thr Thr His Pro Glu Phe Glu Gly Arg
145                 150                 155                 160

Ala Thr Trp Leu Lys Ser Phe Ile Asp Gly Glu Asn Asn Asp Gly His
                165                 170                 175

Gly His Gly Thr His Cys Ala Gly Thr Val Gly Ser Lys Thr Tyr Gly
            180                 185                 190

Val Ala Lys Lys Ala Lys Leu Leu Ala Val Lys Val Leu Asp Asn Gly
        195                 200                 205

Gly Ser Gly Ser Tyr Ala Gly Val Ile Ala Gly Met Glu Phe Val Ser
    210                 215                 220

Gln Asp Tyr Lys Thr Arg Gly Cys Pro Asn Gly Ala Ile Ala Ser Met
225                 230                 235                 240

Ser Leu Gly Gly Pro Phe Ser Ala Ser Val Asn Gln Ala Ala Ala Ala
                245                 250                 255

Met Val Ser Ser Gly Val Phe Leu Ser Val Ala Ala Gly Asn Asp Gly
            260                 265                 270

Ala Asp Ala Ala Arg Tyr Ser Pro Ala Ser Glu Pro Ser Ala Cys Thr
        275                 280                 285

Val Gly Ala Thr Thr Ser Thr Asp Ala Arg Ser Ser Phe Ser Asn Phe
    290                 295                 300
```

```
Gly Lys Leu Val Asp Ile Phe Ala Pro Gly Ser Ala Ile Leu Ser Thr
305                 310                 315                 320

Trp Ile Asn Gly Gly Thr Arg Ser Ile Ser Gly Thr Ser Met Ala Thr
                325                 330                 335

Pro His Val Ala Gly Leu Ala Ala Tyr Leu Asn Ala Leu Gln Gly Val
            340                 345                 350

Val Ser Pro Ala Ala Leu Cys Lys Lys Ile Gln Asp Thr Ala Ile Lys
        355                 360                 365

Asn Ala Leu Thr Gly Val Pro Ala Ser Thr Val Asn Phe Leu Ala Tyr
    370                 375                 380

Asn Gly Ala
385
```

<210> 175
<211> 387
<212> PRT
<213> Cordyceps militaris

<400> 175

```
Met Arg Leu Ser Leu Leu Leu Ala Ile Leu Pro Val Ala Leu Ala Ala
1               5                   10                  15

Pro Ala Thr Lys Arg Asp Glu Pro Ala Pro Leu His Ala Ala Ala Val
            20                  25                  30

Glu Ser Ala Ala Ile Pro Gly Lys Tyr Ile Val Lys Phe Lys Lys Gly
        35                  40                  45

Ser Ala Ser Ala Asp Asn Arg Met His Ile Met Ala Glu His Ala Glu
    50                  55                  60

His Val Tyr Thr Asn Val Met Gln Gly Phe Ala Gly Ser Leu Asp Ala
65                  70                  75                  80

Glu Thr Leu Lys Ala Leu Arg Asn His Pro Asp Val Glu Tyr Ile Glu
                85                  90                  95

Gln Asp Ala Arg Val Ser Ile Asn Gly Trp Val Thr Gln Pro Gln Ser
            100                 105                 110

Thr Trp Gly Leu Ser Arg Ile Ser His Arg Ala Lys Thr Ala Lys Gly
        115                 120                 125

Tyr Thr Tyr Asp Ser Ser Ser Gly Glu Gly Thr Cys Val Tyr Val Ile
    130                 135                 140

Asp Thr Gly Ile Asp Asp Ser His Pro Asp Phe Gly Gly Arg Ala Leu
```

145 150 155 160

Gln Val Lys Ser Phe Val Asp Gly Glu Pro Ala Asp Gly His Gly His
165 170 175

Gly Thr His Cys Ala Gly Thr Ile Ala Ser Asn Thr Tyr Gly Val Ala
180 185 190

Lys Lys Thr Lys Val Phe Gly Val Lys Val Leu Asp Asn Asn Gly Ser
195 200 205

Gly Ser Trp Ser Asn Val Ile Ala Gly Met Asp Phe Val Val Asn Asp
210 215 220

Ser Arg Glu Arg Asp Cys Pro Ser Gly Thr Leu Ala Ser Met Ser Leu
225 230 235 240

Gly Gly Gly Tyr Ser Ala Ala Ile Asn Gly Gly Ala Ala Glu Leu Val
245 250 255

Ser Ser Gly Val Phe Val Ser Val Ala Ala Gly Asn Asp Asn Arg Asp
260 265 270

Ala Ala Asn Tyr Ser Pro Ala Ser Glu Glu Ser Ala Cys Thr Val Gly
275 280 285

Ala Thr Thr Ser Ala Asp Ala Arg Ser Ala Phe Ser Asn Tyr Gly Arg
290 295 300

Ile Val Asp Ile Phe Ala Pro Gly Ser Asn Ile Leu Ser Leu Ala Pro
305 310 315 320

Gly Gly Gly Thr Ala Thr Met Ser Gly Thr Ser Met Ala Ala Pro His
325 330 335

Ile Ala Gly Leu Ala Ala Tyr Ile Gly Gly Leu Glu Gly Leu Thr Gly
340 345 350

Gly Ser Ile Cys Asn Arg Leu Val Gln Leu Ala Thr Arg Gly Thr Leu
355 360 365

Ala Gly Ile Pro Gly Gly Thr Val Asn Leu Leu Ala Phe Asn Gly Asn
370 375 380

Pro Ser Gly
385

<210> 176
<211> 379
<212> PRT
<213> Fusarium sp.

<400> 176

```
Met Arg Leu Ser Ile Ile Ala Val Leu Pro Leu Ala Leu Ala Ala Pro
1               5                  10                  15

Val Leu Glu Pro Ala Pro Leu Leu Glu Ala Arg Gly Ser Gln Pro Ile
            20                  25                  30

Ala Gly Lys Tyr Ile Val Lys Leu Lys Asp Thr Ala Lys Ile Gly Ile
        35                  40                  45

Met Glu Ala Thr Ala Lys Val Ala Asn Pro Glu Arg Val Tyr Gln Asn
    50                  55                  60

Val Ile Lys Gly Phe Ser Ala Ser Leu Cys Lys Glu Glu Val Glu Arg
65                  70                  75                  80

Leu Arg His Asp Pro Asp Val Glu Ser Ile Glu Gln Asp Ala Ile Ile
                85                  90                  95

Ser Ile Asn Ala Ile Thr Gln Gln Gln Gly Ala Thr Trp Gly Leu Thr
            100                 105                 110

Arg Ile Ser His Arg Gln Arg Gly Ser Thr Ala Tyr Ala Tyr Asp Thr
        115                 120                 125

Thr Ala Gly Gln Gly Ala Cys Ala Tyr Val Ile Asp Thr Gly Val Glu
    130                 135                 140

Asp Thr His Pro Glu Phe Glu Gly Arg Ala Lys Gln Ile Lys Thr Phe
145                 150                 155                 160

Ala Ser Thr Ala Arg Asp Gly Asn Gly His Gly Thr His Cys Ser Gly
                165                 170                 175

Thr Ile Gly Ser Lys Thr Tyr Gly Val Ala Lys Lys Val Ser Ile Phe
            180                 185                 190

Gly Val Lys Val Leu Asp Asp Asn Gly Ser Gly Ser Leu Ser Asn Val
        195                 200                 205

Ile Ala Gly Met Asp Phe Val Ala Ser Asp Tyr Arg Ser Arg Asn Cys
    210                 215                 220

Pro Arg Gly Val Val Ala Ser Met Ser Leu Gly Gly Gly Tyr Ser Ala
225                 230                 235                 240

Thr Val Asn Gln Ala Ala Ala Arg Leu Gln Ser Ser Gly Val Phe Val
                245                 250                 255

Ala Val Ala Ala Gly Asn Asp Asn Arg Asp Ala Ala Asn Thr Ser Pro
            260                 265                 270
```

```
Ala Ser Glu Pro Ser Val Cys Thr Val Gly Ala Thr Asp Ser Ser Asp
        275                 280                 285

Arg Arg Ser Ser Phe Ser Asn Tyr Gly Arg Ala Leu Asp Ile Phe Ala
    290                 295                 300

Pro Gly Thr Asp Ile Thr Ser Thr Trp Ile Gly Gly Arg Thr Asn Thr
305                 310                 315                 320

Ile Ser Gly Thr Ser Met Ala Thr Pro His Ile Ala Gly Leu Gly Ala
                325                 330                 335

Tyr Leu Leu Ala Leu Glu Gly Gly Ser Ala Ser Thr Ile Cys Ala Arg
            340                 345                 350

Ile Gln Thr Leu Ser Thr Lys Asn Ala Ile Ser Gly Val Pro Ser Gly
        355                 360                 365

Thr Val Asn Tyr Leu Ala Phe Asn Asn Ala Thr
    370                 375


<210>  177
<211>  383
<212>  PRT
<213>  Neurospora tetrasperma

<400>  177

Met Ala Ala Pro Ser Ala Pro Ile Asp Lys Arg Ala Pro Ile Leu Glu
1               5                   10                  15

Ala Arg Ala Gly Thr Gln Ala Val Pro Gly Lys Tyr Ile Val Lys Leu
            20                  25                  30

Arg Glu Thr Ala Ser Asp Asp Asp Leu Asp Lys Ala Val Lys Lys Leu
        35                  40                  45

Gly Asn Ser Lys Ala Asp His Val Tyr Lys His Ala Phe Arg Gly Phe
    50                  55                  60

Ala Gly Arg Ile Asp Asp Lys Thr Leu Asp Glu Ile Arg Ser Ile Pro
65                  70                  75                  80

Glu Val Glu Tyr Val Glu Gln Glu Ala Val Phe Thr Ile Asn Thr Tyr
                85                  90                  95

Thr Ser Gln Ser Ser Val Pro Ser Trp Gly Leu Ala Arg Leu Ser Ser
            100                 105                 110

Lys Thr Lys Gly Lys Thr Thr Tyr Val Tyr Asp Ser Ser Ala Gly Ala
        115                 120                 125
```

```
Gly Thr Cys Ala Tyr Ile Ile Asp Thr Gly Ile Asn Thr Ala His Ser
    130                 135                 140

Asp Phe Gly Gly Arg Ala Thr Trp Leu Ala Asn Tyr Ala Gly Asp Gly
145                 150                 155                 160

Ile Asn Ser Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
                165                 170                 175

Gly Gly Thr Thr Tyr Gly Val Ala Lys Lys Thr Asn Leu Tyr Ala Val
            180                 185                 190

Lys Val Leu Asp Ser Asn Gly Ser Gly Ser Asn Ser Gly Val Ile Ala
        195                 200                 205

Gly Met Asn Phe Val Ala Gln Asp Ala Gln Ser Arg Asn Cys Pro Asn
    210                 215                 220

Gly Thr Val Ala Asn Met Ser Leu Gly Gly Gly Tyr Ser Ala Ser Thr
225                 230                 235                 240

Asn Ser Ala Ala Ala Ala Met Val Arg Ala Gly Val Phe Leu Ala Val
                245                 250                 255

Ala Ala Gly Asn Asp Gly Ala Asn Ala Ala Asn Tyr Ser Pro Ala Ser
            260                 265                 270

Glu Pro Thr Val Cys Thr Val Gly Ala Thr Thr Ser Ala Asp Ala Ile
        275                 280                 285

Ala Tyr Tyr Ser Asn Tyr Gly Thr Ile Val Asp Ile Phe Ala Pro Gly
    290                 295                 300

Thr Ser Ile Thr Ser Ala Trp Ile Gly Ser Thr Thr Ala Lys Asn Thr
305                 310                 315                 320

Ile Ser Gly Thr Ser Met Ala Thr Pro His Ile Thr Gly Leu Gly Ala
                325                 330                 335

Tyr Leu Leu Thr Leu Leu Gly Lys Lys Ser Pro Ala Ala Leu Cys Ser
            340                 345                 350

Tyr Ile Ala Ser Thr Ala Asn Ser Gly Val Ile Ser Gly Ile Pro Ser
        355                 360                 365

Gly Thr Val Asn Lys Leu Ala Phe Asn Gly Asn Pro Ser Ala Ser
    370                 375                 380


<210>  178
<211>  393
<212>  PRT
```

<213> Chaetomium globosum

<400> 178

```
Met His Phe Ser Val Ala Leu Leu Ala Leu Leu Pro Ala Ala Ile Ala
1               5                  10                  15

Ala Pro Thr Ala Glu Pro Ile Gln Lys Arg Ala Pro Ile Ile Ala Ala
            20                  25                  30

Arg Val Gly Gln Val Val Pro Asn Lys Tyr Leu Ile Lys Leu Arg Glu
        35                  40                  45

Gly Thr Ser Asp Asp Ala Leu Glu Ala Ala Ile Gly Lys Leu Gly Lys
    50                  55                  60

Ser Lys Ala Asp His Ile Tyr Arg Gly Lys Lys Phe Arg Gly Phe Ala
65                  70                  75                  80

Gly Lys Leu Glu Ala Asp Leu Leu Asp Gln Ile Arg Leu Leu Pro Glu
                85                  90                  95

Val Glu Tyr Val Glu Glu Asp Ala Ile Phe Ser Ile Asn Ala Tyr Val
            100                 105                 110

Ser Gln Ser Gly Ala Pro Trp Gly Ile Ser Arg Leu Ser His Lys Ser
        115                 120                 125

Ala Gly Ser Thr Thr Tyr Val Tyr Asp Ser Ser Ala Gly Glu Gly Thr
    130                 135                 140

Cys Ser Tyr Val Ile Asp Thr Gly Ile Tyr Thr Ala His Ser Asp Phe
145                 150                 155                 160

Gly Gly Arg Ala Thr Phe Ala Ala Asn Phe Val Asp Ser Ser Asn Thr
                165                 170                 175

Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile Gly Ser Thr
            180                 185                 190

Thr Tyr Gly Val Ala Lys Lys Thr Lys Leu Tyr Ala Val Lys Val Leu
        195                 200                 205

Gly Ser Asp Gly Ser Gly Ser Thr Ser Gly Val Val Ala Gly Ile Asn
    210                 215                 220

Phe Val Ala Thr Asp Ala Pro Lys Arg Ser Cys Pro Lys Gly Val Val
225                 230                 235                 240

Ala Asn Met Ser Leu Gly Gly Gly Tyr Ser Ala Ser Ile Asn Gln Ala
                245                 250                 255
```

```
Ala Ala Ala Leu Val Asp Ala Gly Ile Phe Leu Ala Val Ala Ala Gly
            260                 265                 270

Asn Asp Asn Ala Asn Ser Ala Asn Tyr Ser Pro Ala Ser Glu Ala Ser
        275                 280                 285

Val Cys Thr Val Gly Ala Thr Asp Ser Ser Asp Arg Lys Ala Ser Tyr
    290                 295                 300

Ser Asn Tyr Gly Ser Val Val Asp Ile Gln Ala Pro Gly Thr Asn Ile
305                 310                 315                 320

Leu Ser Thr Trp Ile Gly Gly Arg Thr Asn Thr Ile Ser Gly Thr Ser
                325                 330                 335

Met Ala Ser Pro His Ile Ala Gly Leu Ala Ala Tyr Leu Leu Ala Leu
            340                 345                 350

Glu Gly Ser Lys Thr Pro Ala Ala Leu Cys Asn Tyr Ile Lys Ser Thr
        355                 360                 365

Ala Leu Ser Gly Ala Val Ser Gly Leu Pro Ser Gly Thr Thr Asn Arg
    370                 375                 380

Leu Ala Phe Asn Gly Asn Pro Ser Ala
385                 390
```

<210> 179
<211> 396
<212> PRT
<213> Neurospora crassa

<400> 179

```
Met Lys Leu Ser Ala Val Leu Ala Leu Leu Pro Leu Ala Met Ala Ala
1               5                   10                  15

Pro Ser Ala Pro Ile Asp Lys Arg Ala Pro Ile Leu Glu Ala Arg Ala
            20                  25                  30

Gly Thr Gln Ala Val Pro Gly Lys Tyr Ile Val Lys Leu Arg Glu Thr
        35                  40                  45

Ala Ser Asp Asp Asp Leu Asp Lys Ala Val Lys Lys Leu Gly Asn Ser
    50                  55                  60

Lys Ala Asp His Val Tyr Lys His Ala Phe Arg Gly Phe Ala Gly Arg
65                  70                  75                  80

Ile Asp Asp Lys Thr Leu Asp Asp Ile Arg Ser Leu Pro Glu Val Glu
                85                  90                  95

Tyr Val Glu Gln Glu Ala Val Phe Thr Ile Asn Thr Tyr Thr Ser Gln
```

```
            100                 105                 110

Ser Ser Val Pro Ser Trp Gly Leu Ala Arg Leu Ser Ser Lys Thr Thr
        115                 120                 125

Gly Lys Thr Thr Tyr Val Tyr Asp Ser Ser Ala Gly Ala Gly Thr Cys
    130                 135                 140

Ala Tyr Ile Ile Asp Thr Gly Ile Asn Thr Ala His Ser Asp Phe Gly
145                 150                 155                 160

Gly Arg Ala Thr Trp Leu Ala Asn Tyr Ala Gly Asp Gly Ile Asn Ser
                165                 170                 175

Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val Gly Gly Thr
            180                 185                 190

Thr Tyr Gly Val Ala Lys Lys Thr Gln Leu Tyr Ala Val Lys Val Leu
        195                 200                 205

Asp Ser Asn Gly Ser Gly Ser Asn Ser Gly Val Ile Ala Gly Met Asn
    210                 215                 220

Phe Val Ala Gln Asp Ala Gln Ser Arg Asn Cys Pro Asn Gly Thr Val
225                 230                 235                 240

Ala Asn Met Ser Leu Gly Gly Gly Tyr Ser Ala Ser Thr Asn Ser Ala
                245                 250                 255

Ala Ala Ala Met Val Arg Ala Gly Val Phe Leu Ala Val Ala Ala Gly
            260                 265                 270

Asn Asp Gly Ala Asn Ala Ala Asn Tyr Ser Pro Ala Ser Glu Pro Thr
        275                 280                 285

Val Cys Thr Val Gly Ala Thr Thr Ser Ala Asp Ala Ile Ala Tyr Tyr
    290                 295                 300

Ser Asn Tyr Gly Thr Ile Val Asp Ile Phe Ala Pro Gly Thr Ser Ile
305                 310                 315                 320

Thr Ser Ala Trp Ile Gly Ser Thr Thr Ala Lys Asn Thr Ile Ser Gly
                325                 330                 335

Thr Ser Met Ala Thr Pro His Ile Thr Gly Leu Gly Ala Tyr Leu Leu
            340                 345                 350

Thr Leu Leu Gly Lys Lys Ser Pro Ala Ala Leu Cys Ser Tyr Ile Ala
        355                 360                 365

Ser Thr Ala Asn Ser Gly Val Ile Ser Gly Ile Pro Arg Gly Thr Val
```

370 375 380

Asn Lys Leu Ala Phe Asn Gly Asn Pro Ser Ala Tyr
385 390 395

<210> 180
<211> 397
<212> PRT
<213> Fusarium oxysporum

<400> 180

Met Arg Ser Ala Thr Leu Leu Ala Leu Leu Pro Phe Ala Leu Ala Ala
1 5 10 15

Pro Ser Arg Arg Ala Glu Pro Ala Pro Ile Leu Arg Pro Arg Gly Val
20 25 30

Lys Leu Val Asp Gly Lys Tyr Ile Val Lys Met Lys Asn Gly Phe Gln
35 40 45

Ala Ser Ser Ile Glu Ser Trp Val Asp Lys Met Ile Asp Ser Ile Glu
50 55 60

Ala Asp Ala Asp Tyr Thr Tyr Ser Lys Gly Phe Gly Gly Phe Ala Ala
65 70 75 80

Ser Leu Lys Asp Asp Glu Leu Asn Lys Leu Lys His Asp Pro Asn Val
85 90 95

Glu Tyr Ile Glu Gln Asp Ala Tyr Ile Ser Ile Thr Ala Thr Thr Gln
100 105 110

Gln Ser Asn Ala Pro Trp Gly Ile Ala Arg Val Ser Ser Gln Ser Pro
115 120 125

Gly Gly Ser Thr Tyr Thr Tyr Asp Asp Ser Ala Gly Glu Gly Thr Cys
130 135 140

Ala Tyr Val Ile Asp Thr Gly Ile Asp Val Asp His Pro Asp Phe Asp
145 150 155 160

Gly Arg Ala Lys Phe Leu Lys Asn Phe Ala Gly Gly Ser Asp Ser Asp
165 170 175

Gly Gln Gly His Gly Thr His Val Ala Gly Thr Ile Gly Ser Thr Thr
180 185 190

Tyr Gly Val Ala Lys Lys Thr Ser Leu Phe Ala Val Lys Val Leu Gly
195 200 205

Asp Asp Gly Ser Gly Thr Asn Ser Ala Val Ile Ala Gly Met Asp Phe
210 215 220

```
Val Ser Gly His Ala Lys Asp Glu Asn Cys Pro Asn Gly Val Val Val
225                 230                 235                 240

Asn Met Ser Leu Gly Gly Glu Thr Ser Asp Ala Val Asn Gln Ala Ala
                245                 250                 255

Lys Ala Ile Val Asp Ala Gly Leu Phe Leu Ala Val Ala Ala Gly Asn
            260                 265                 270

Asp Gly Lys Asp Ala Ser Gly Ser Ser Pro Ala Ser Glu Glu Ser Ala
        275                 280                 285

Cys Thr Val Gly Ala Thr Thr Arg Asp Asp Thr Leu Ala Asp Tyr Ser
    290                 295                 300

Asn Phe Gly Ser Val Val Asp Val Leu Ala Pro Gly Thr Asp Ile Leu
305                 310                 315                 320

Ser Thr Trp Pro Asn Gly Lys Thr Asn Thr Ile Ser Gly Thr Ser Met
                325                 330                 335

Ala Ser Pro His Val Ala Gly Leu Ala Ala Tyr Phe Leu Gly Leu Gly
            340                 345                 350

Gln Lys Ala Glu Gly Leu Cys Asp Tyr Ile Ala Ser Lys Ala Leu Asp
        355                 360                 365

Gly Val Ile Ser Asn Val Pro Ser Gly Thr Val Asn Lys Leu Ile Asn
    370                 375                 380

Asn Gly Val Gly Gly Ser Asn Ser Ser Ser Ile Arg His
385                 390                 395


<210>  181
<211>  389
<212>  PRT
<213>  Gibberella zeae

<400>  181

Met Arg Ser Ala Thr Leu Leu Ala Leu Leu Pro Phe Ala Leu Ala Ala
1               5                   10                  15

Pro Ser Ala Ser Val Ser Arg Arg Thr Glu Pro Ala Pro Val Ile Arg
            20                  25                  30

Pro Arg Gly Val Lys Leu Val Asp Gly Lys Tyr Ile Val Lys Met Lys
        35                  40                  45

Ala Gly Val Arg Ala Ala Ser Val Asp Ser Ala Val Ser Thr Ile Gln
    50                  55                  60
```

```
Ala Asp Ala Asp Tyr Thr Tyr Thr Lys Ser Phe Ser Gly Phe Ala Ala
65                  70                  75                  80

Ser Leu Lys Asp Glu Glu Ile Glu Thr Leu Lys His Asp Pro Asn Val
                85                  90                  95

Glu Tyr Ile Glu Gln Asp Ala Val Ile Thr Ile Lys Ala Thr Val Asp
            100                 105                 110

Gln Asp Asn Ala Pro Trp Gly Ile Ala Arg Leu Ser Ser Ser Lys Pro
        115                 120                 125

Gly Ser Lys Thr Tyr Thr Tyr Asp Glu Ser Ala Gly Glu Gly Thr Cys
    130                 135                 140

Ser Tyr Val Ile Asp Thr Gly Ile Asp Val Glu His Pro Asp Phe Asp
145                 150                 155                 160

Gly Arg Ala Lys Phe Leu Lys Asn Phe Ala Gly Gly Arg Asp Gly Asp
                165                 170                 175

Gly Gln Gly His Gly Thr His Val Ala Gly Thr Ile Gly Ser Thr Thr
            180                 185                 190

Tyr Gly Val Ala Lys Lys Thr Thr Leu Tyr Ala Val Lys Val Leu Gly
        195                 200                 205

Asp Asp Gly Ser Gly Thr Asn Ser Ala Val Ile Ala Gly Met Asp Phe
    210                 215                 220

Val Ala Gly His Ala Asp Asp Glu Asn Cys Pro Asn Gly Ala Val Val
225                 230                 235                 240

Asn Met Ser Leu Gly Gly Glu Ala Ser Asp Ala Val Asn Ser Ala Ala
                245                 250                 255

Lys Ser Ile Val Asp Ala Gly Leu Phe Leu Ala Val Ala Ala Gly Asn
            260                 265                 270

Glu Ala Val Asp Ala Ser Gly Ser Ser Pro Ala Ser Glu Ala Ser Ala
        275                 280                 285

Cys Thr Val Gly Ala Thr Thr Arg Asn Asp Thr Leu Ser Tyr Phe Ser
    290                 295                 300

Asn Phe Gly Asp Leu Val Asp Val Leu Ala Pro Gly Thr Asp Ile Leu
305                 310                 315                 320

Ser Thr Trp Pro Gly Gly Lys Thr Asn Thr Ile Ser Gly Thr Ser Met
                325                 330                 335
```

```
Ala Ser Pro His Val Ala Gly Leu Gly Ala Tyr Phe Leu Gly Leu Gly
            340                 345                 350

Lys Lys Ala Glu Gly Leu Cys Glu Tyr Ile Ala Ser Gln Ala Leu Glu
        355                 360                 365

Gly Val Val Ala Gln Val Pro Arg Asp Thr Val Asn Lys Leu Ile Asn
    370                 375                 380

Asn Gly Val Ser Lys
385
```

<210> 182
<211> 399
<212> PRT
<213> Trichoderma reesei

<400> 182

```
Met Gln Pro Ser Phe Gly Ser Phe Leu Val Thr Val Leu Ser Ala Ser
1               5                   10                  15

Met Ala Ala Gly Ser Val Ile Pro Ser Thr Asn Ala Asn Pro Gly Ser
            20                  25                  30

Phe Glu Ile Lys Arg Ser Ala Asn Lys Ala Phe Thr Gly Arg Asn Gly
        35                  40                  45

Pro Leu Ala Leu Ala Arg Thr Tyr Ala Lys Tyr Gly Val Glu Val Pro
    50                  55                  60

Lys Thr Leu Val Asp Ala Ile Gln Leu Val Lys Ser Ile Gln Leu Ala
65                  70                  75                  80

Lys Arg Asp Ser Ala Thr Val Thr Ala Thr Pro Asp His Asp Asp Ile
                85                  90                  95

Glu Tyr Leu Val Pro Val Lys Ile Gly Thr Pro Pro Gln Thr Leu Asn
            100                 105                 110

Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Asp
        115                 120                 125

Val Asp Pro Thr Ser Ser Gln Gly His Asp Ile Tyr Thr Pro Ser Lys
    130                 135                 140

Ser Thr Ser Ser Lys Lys Leu Glu Gly Ala Ser Trp Asn Ile Thr Tyr
145                 150                 155                 160

Gly Asp Arg Ser Ser Ser Ser Gly Asp Val Tyr His Asp Ile Val Ser
                165                 170                 175
```

```
Val Gly Asn Leu Thr Val Lys Ser Gln Ala Val Glu Ser Ala Arg Asn
            180                 185                 190

Val Ser Ala Gln Phe Thr Gln Gly Asn Asn Asp Gly Leu Val Gly Leu
        195                 200                 205

Ala Phe Ser Ser Ile Asn Thr Val Lys Pro Thr Pro Gln Lys Thr Trp
    210                 215                 220

Tyr Asp Asn Ile Val Gly Ser Leu Asp Ser Pro Val Phe Val Ala Asp
225                 230                 235                 240

Leu Arg His Asp Thr Pro Gly Ser Tyr His Phe Gly Ser Ile Pro Ser
                245                 250                 255

Glu Ala Ser Lys Ala Phe Tyr Ala Pro Ile Asp Asn Ser Lys Gly Phe
            260                 265                 270

Trp Gln Phe Ser Thr Ser Ser Asn Ile Ser Gly Gln Phe Asn Ala Val
        275                 280                 285

Ala Asp Thr Gly Thr Thr Leu Leu Leu Ala Ser Asp Asp Leu Val Lys
    290                 295                 300

Ala Tyr Tyr Ala Lys Val Gln Gly Ala Arg Val Asn Val Phe Leu Gly
305                 310                 315                 320

Gly Tyr Val Phe Asn Cys Thr Thr Gln Leu Pro Asp Phe Thr Phe Thr
                325                 330                 335

Val Gly Glu Gly Asn Ile Thr Val Pro Gly Thr Leu Ile Asn Tyr Ser
            340                 345                 350

Glu Ala Gly Asn Gly Gln Cys Phe Gly Gly Ile Gln Pro Ser Gly Gly
        355                 360                 365

Leu Pro Phe Ala Ile Phe Gly Asp Ile Ala Leu Lys Ala Ala Tyr Val
    370                 375                 380

Ile Phe Asp Ser Gly Asn Lys Gln Val Gly Trp Ala Gln Lys Lys
385                 390                 395


<210>  183
<211>  401
<212>  PRT
<213>  Trichoderma atroviride

<400>  183

Met Gln Pro Thr Thr Ser Phe Gly Thr Phe Leu Val Thr Phe Leu Ser
1               5                   10                  15

Ala Ser Met Ala Ala Gly Ser Ala Ile Pro Tyr Met Ala Pro Gln Pro
```

```
            20                  25                  30

Gly Ser Phe Glu Ile Lys Arg Ala Ala Asn Asn Gly Phe Thr Gly Arg
        35                  40                  45

Asn Gly Ala Leu Ala Leu Ala Arg Ala Tyr Ala Lys Tyr Gly Val Pro
    50                  55                  60

Val Thr Asp Thr Leu Leu Glu Ala Val Glu Thr Leu Lys Ser Ala His
65                  70                  75                  80

Leu Ile Lys Arg Ser Ser Gly Asn Val Thr Ala Thr Pro Asp Gly Asp
                85                  90                  95

Asp Leu Glu Tyr Leu Val Pro Val Gln Ile Gly Thr Pro Pro Gln Thr
            100                 105                 110

Leu Asn Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser
        115                 120                 125

Ser Glu Thr Asp Thr Ser Ser Ser Gln Gly His Ser Val Tyr Ser Pro
    130                 135                 140

Ser Lys Ser Thr Ser Ala Gln Lys Leu Asp Gly Ala Thr Trp Ser Ile
145                 150                 155                 160

Thr Tyr Gly Asp Gln Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Val
                165                 170                 175

Val Thr Leu Gly Ser Leu Thr Val Lys Ser Gln Ala Val Glu Ser Ala
            180                 185                 190

Gln Gln Val Ser Ala Gln Phe Ala Gln Gly Asn Asn Asp Gly Leu Leu
        195                 200                 205

Gly Leu Ala Phe Ser Ser Ile Asn Thr Val Lys Pro Thr Gln Gln Lys
    210                 215                 220

Thr Trp Phe Asp Asn Ile Ser Gly Ser Leu Asp Ser Pro Leu Phe Val
225                 230                 235                 240

Ala Asp Leu Arg His Glu Thr Pro Gly Ser Tyr Ile Phe Gly Thr Ile
                245                 250                 255

Pro Ser Asp Ala Ser Asn Val Leu Tyr Ala Pro Val Asp Asn Ser Gln
            260                 265                 270

Gly Phe Trp Gln Phe Ser Thr Ser Ser Asp Ile Gly Gly Ser Phe Ser
        275                 280                 285

Ala Ile Ala Asp Thr Gly Thr Thr Leu Leu Leu Ala Ser Asp Asp Leu
```

290 295 300

Val Ser Ala Tyr Tyr Lys Asn Val Gln Gly Ala Arg Glu Asp Gln Gln
305 310 315 320

Gln Gly Gly Tyr Val Phe Asp Cys Ser Thr Thr Leu Pro Asp Phe Thr
325 330 335

Phe Thr Val Gly Asp Gly Lys Ile Thr Val Pro Gly Ser Leu Ile Asn
340 345 350

Tyr Gly Gln Ala Ser Gly Ser Glu Cys Phe Gly Gly Ile Gln Ser Ser
355 360 365

Gly Gly Leu Pro Phe Ala Ile Phe Gly Asp Ile Ala Leu Lys Ala Ala
370 375 380

Tyr Val Val Phe Asp Ser Gly Asn Thr Gln Val Gly Trp Ala Gln Lys
385 390 395 400

Lys

<210> 184
<211> 400
<212> PRT
<213> Trichoderma virens

<400> 184

Met Gln Pro Val Ser Phe Gly Ser Phe Leu Val Thr Phe Leu Thr Ala
1 5 10 15

Ser Leu Ala Ala Gly Ser Ala Leu Pro Asn Thr Val Ser Ser Pro Gly
20 25 30

Ser Phe Glu Ile Lys Arg Thr Pro Asn Lys Gly Phe Thr Gly Arg Asn
35 40 45

Gly Pro Leu Ala Leu Ala Arg Ala Tyr Val Lys Tyr Gly Val Pro Val
50 55 60

Ser Lys Ser Leu Val Glu Ala Ile Asp Leu Val Lys Ser Ala Gln Leu
65 70 75 80

Ile Lys Arg Ser Asn Gly Asn Val Thr Ala Thr Pro Asp Gly Asp Asp
85 90 95

Leu Gln Tyr Leu Val Pro Val Gln Ile Gly Thr Pro Pro Gln Thr Leu
100 105 110

His Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser
115 120 125

```
Glu Thr Asp Pro Ser Ser Ser Lys Gly His Ser Leu Tyr Asn Pro Ser
    130                 135                 140

Thr Ser Thr Ser Ser Lys Lys Val Asp Gly Ala Ser Trp Asn Ile Thr
145                 150                 155                 160

Tyr Gly Asp Gln Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Val Val
                165                 170                 175

Thr Val Gly Ser Leu Thr Val Asn Ser Gln Ala Val Glu Ser Ala Gln
            180                 185                 190

Gln Val Ser Ala Gln Phe Ala Gln Gly Asn Asn Asp Gly Leu Val Gly
        195                 200                 205

Leu Ala Phe Ser Ser Ile Asn Thr Val Lys Pro Thr Pro Gln Lys Thr
    210                 215                 220

Trp Phe Asp Asn Ile Ala Ser Thr Leu Asp Ala Pro Leu Phe Val Ala
225                 230                 235                 240

Asp Leu Arg His Glu Thr Pro Gly Ser Tyr Ile Phe Gly Ala Ile Pro
                245                 250                 255

Ser Ala Ala Ser Asn Ile Leu Tyr Ala Pro Val Asp Asn Ser Lys Gly
            260                 265                 270

Phe Trp Gln Phe Ser Thr Ser Ser Asp Thr Gly Gly Glu Phe Asp Ala
        275                 280                 285

Ile Ala Asp Thr Gly Thr Thr Leu Ile Leu Ala Ser Asp Ala Leu Val
    290                 295                 300

Lys Ser Tyr Tyr Gln Lys Val Gln Gly Ala His Leu Asp Ala Leu Gln
305                 310                 315                 320

Gly Gly Tyr Val Phe Gly Cys Asn Thr Thr Leu Pro Asp Phe Lys Phe
                325                 330                 335

Ala Val Gly Glu Gly Glu Ile Thr Val Pro Gly Ser Leu Ile Asn Tyr
            340                 345                 350

Ala Pro Ala Gly Asn Asn Glu Cys Phe Gly Gly Ile Gln Pro Ser Gly
        355                 360                 365

Gly Leu Pro Phe Ala Ile Phe Gly Asp Ile Ala Leu Lys Ala Ala His
    370                 375                 380

Val Val Phe Asp Ser Gly Lys Thr Gln Val Gly Trp Ala Gln Lys Lys
385                 390                 395                 400
```

<210> 185
<211> 398
<212> PRT
<213> Cordyceps militaris

<400> 185

```
Met Tyr Lys Asp Val Phe Pro Cys Ser Gly Phe Lys Ser Phe Gly Ser
1               5                   10                  15

Phe Leu Val Ala Ala Leu Val Ala Gly Phe Ala Ser Gly Asn Pro Met
            20                  25                  30

Pro Arg Ala Ser Gly Ser Phe Glu Leu Lys Gln Thr Ala Asn Pro Asn
        35                  40                  45

Phe Ser Ser Arg Asn Gly Pro Gln Ala Leu Ala Asn Ala Tyr Lys Lys
    50                  55                  60

Tyr Gly Lys Ala Val Pro Asp His Ile Ala Val Ala Ala Asp Lys Asn
65                  70                  75                  80

Thr Asn Ala Lys Arg Ala Ala Gly Thr Ala Thr Ala Asn Ser Ile Arg
                85                  90                  95

Gly Asp Leu Glu Tyr Leu Val Asp Val Gln Ile Gly Ala Gly Gln Thr
            100                 105                 110

Leu Lys Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser
        115                 120                 125

Thr Gln Thr Glu Gly Ala Gly Phe Gln Thr Lys Tyr Asp Pro Ser Arg
    130                 135                 140

Ser Ser Ser Ala Lys Arg Leu Ser Gly Ala Thr Trp Glu Ile Ser Tyr
145                 150                 155                 160

Gly Asp Gly Ser Asn Cys Ser Gly Asp Val Tyr Thr Asp Asp Val Thr
                165                 170                 175

Val Gly Gly Leu Thr Val Lys Gly Gln Ala Val Glu Ala Ala Gln Glu
            180                 185                 190

Val Ser Gln Gln Phe Ala Gln Gly Gln Ser Asp Gly Leu Leu Gly Leu
        195                 200                 205

Ala Phe Ser Gln Leu Asn Thr Val Thr Pro Gln Lys Gln Lys Thr Trp
    210                 215                 220

Phe Asp Asn Val Lys Pro Gln Leu Asp Ser Pro Leu Phe Val Ala Asp
225                 230                 235                 240
```

```
Leu Lys His Asn Ala Pro Gly Ser Tyr Ile Phe Gly Lys Ile Pro Ser
                245                 250                 255

Gly Ala Glu Gln Ala Ser Tyr Val Asp Val Asp Ser Ser Gln Gly Phe
            260                 265                 270

Trp Gly Phe Ser Ala Thr Thr Met Tyr Gly Asp Val Gln Ala Ile Ala
        275                 280                 285

Asp Thr Gly Thr Thr Leu Leu Leu Leu Asp Asn Gln Ser Val Gln Ser
    290                 295                 300

Tyr Tyr Ala Asn Val Gln Ser Ala Glu Tyr Asp Gln Gln Glu Gly Gly
305                 310                 315                 320

Phe Val Phe Asn Cys Gly Glu Gln Leu Pro Asp Phe Pro Phe Arg Val
                325                 330                 335

Gly Gly Gly Ile Ile Thr Ile Pro Gly Ala Ile Ile Lys Tyr Ala Gln
            340                 345                 350

Gly Ser Asp Gly Arg Cys Phe Gly Gly Ile Gln Ala Ala Gly Asn Ile
        355                 360                 365

Pro Leu Asn Ile Phe Gly Asp Ile Ala Leu Lys Ala Ala Tyr Val Ile
    370                 375                 380

Phe Asp Gly Gly Asn Asn Arg Leu Gly Trp Ala Gln Lys Asn
385                 390                 395


<210>  186
<211>  446
<212>  PRT
<213>  Trichoderma reesei

<400>  186

Met Thr Leu Pro Val Pro Leu Arg Glu His Asp Leu Pro Phe Leu Lys
1               5                   10                  15

Glu Lys Arg Lys Leu Pro Ala Asp Asp Ile Pro Ser Gly Thr Tyr Thr
            20                  25                  30

Leu Pro Ile Ile His Ala Arg Arg Pro Lys Leu Ala Ser Arg Ala Ile
        35                  40                  45

Glu Val Gln Val Glu Asn Arg Ser Asp Val Ser Tyr Tyr Ala Gln Leu
    50                  55                  60

Asn Ile Gly Thr Pro Pro Gln Thr Val Tyr Ala Gln Ile Asp Thr Gly
65                  70                  75                  80
```

```
Ser Phe Glu Leu Trp Val Asn Pro Asn Cys Ser Asn Val Gln Ser Ala
                85                  90                  95

Asp Gln Arg Phe Cys Arg Ala Ile Gly Phe Tyr Asp Pro Ser Ser Ser
            100                 105                 110

Ser Thr Ala Asp Val Thr Ser Gln Ser Ala Arg Leu Arg Tyr Gly Ile
        115                 120                 125

Gly Ser Ala Asp Val Thr Tyr Val His Asp Thr Ile Ser Leu Pro Gly
    130                 135                 140

Ser Gly Ser Gly Ser Lys Ala Met Lys Ala Val Gln Phe Gly Val Ala
145                 150                 155                 160

Asp Thr Ser Val Asp Glu Phe Ser Gly Ile Leu Gly Leu Gly Ala Gly
                165                 170                 175

Asn Gly Ile Asn Thr Glu Tyr Pro Asn Phe Val Asp Glu Leu Ala Ala
            180                 185                 190

Gln Gly Val Thr Ala Thr Lys Ala Phe Ser Leu Ala Leu Gly Ser Lys
        195                 200                 205

Ala Glu Glu Glu Gly Val Ile Ile Phe Gly Gly Val Asp Thr Ala Lys
    210                 215                 220

Phe His Gly Glu Leu Ala His Leu Pro Ile Val Pro Ala Asp Asp Ser
225                 230                 235                 240

Pro Asp Gly Val Ala Arg Tyr Trp Val Lys Met Lys Ser Ile Ser Leu
                245                 250                 255

Thr Pro Pro Pro Pro Ser Ser Ser Gly Ser Thr Asp Asp Asn Asn Asn
            260                 265                 270

Lys Pro Val Ala Phe Pro Gln Thr Ser Met Thr Val Phe Leu Asp Ser
        275                 280                 285

Gly Ser Thr Leu Thr Leu Leu Pro Pro Ala Leu Val Arg Gln Ile Ala
    290                 295                 300

Ser Ala Leu Gly Ser Thr Gln Thr Asp Glu Ser Gly Phe Phe Val Val
305                 310                 315                 320

Asp Cys Ala Leu Ala Ser Gln Asp Gly Thr Ile Asp Phe Glu Phe Asp
                325                 330                 335

Gly Val Thr Ile Arg Val Pro Tyr Ala Glu Met Ile Arg Gln Val Ser
            340                 345                 350
```

```
Thr Leu Pro Pro His Cys Tyr Leu Gly Met Met Gly Ser Thr Gln Phe
        355                 360                 365

Ala Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Ala Val Phe Asp
    370                 375                 380

Leu Thr Ser Asn Val Val His Leu Ala Pro Tyr Ala Asn Cys Gly Thr
385                 390                 395                 400

Asn Val Lys Ser Ile Thr Ser Thr Ser Ser Leu Ser Asn Leu Val Gly
                405                 410                 415

Thr Cys Asn Asp Pro Ser Lys Pro Ser Ser Ser Pro Ser Pro Ser Gln
            420                 425                 430

Thr Pro Ser Ala Ser Pro Ser Ser Thr Ala Thr Gln Lys Ala
        435                 440                 445
```

<210> 187
<211> 608
<212> PRT
<213> Trichoderma atroviride

<400> 187

```
Met Ala Ile Arg Ser Phe Leu Thr Leu Ser Leu Ala Leu Leu Ala His
1               5                   10                  15

Ala Arg Pro Arg His Val Phe Asp Pro Glu Asp Val Gly Thr Lys Ile
            20                  25                  30

Thr Leu Pro Val Ile Ser Ala Pro Arg Ala Val Glu Ala Val Ala Gly
        35                  40                  45

Arg Ser Ala Gly Asp Asp Glu Asp Lys Pro Phe His Ile Leu Pro Phe
    50                  55                  60

Pro Tyr Thr Gly Asn Gly Lys Arg Ala Ile Leu Glu Asp Asp Asp Gly
65                  70                  75                  80

Ala Ala Gly Ala Val Thr Leu Pro Val Pro Arg Pro Ala Ser Arg Arg
                85                  90                  95

Ser Ala Gly Asp Glu Asn Glu Asp Glu Glu Asp Lys Pro Phe His Ile
            100                 105                 110

Leu Pro Phe Asn Glu Lys Arg Lys Leu Pro Val Glu Glu Gly Pro Ile
        115                 120                 125

Gly Thr Ile Thr Leu Pro Val Ile His Ala Ala Arg Pro Val Leu Asp
    130                 135                 140

Lys Arg Ala Val Glu Val Gln Val Glu Asn Arg Ser Asp Val Ser Tyr
```

```
145                 150                 155                 160

Tyr Ala Gln Leu Asn Ile Gly Thr Pro Pro Gln Thr Val Tyr Ala Gln
                165                 170                 175

Ile Asp Thr Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys Ser Asn
            180                 185                 190

Val Ala Ser Ser Asp Arg Arg Phe Cys Gln Ala Ile Gly Ser Tyr Asn
        195                 200                 205

Pro Arg Ser Ser Ser Ser Ala Ala Thr Thr Asp Glu Ser Ala Met Leu
    210                 215                 220

Arg Tyr Gly Ile Gly Ser Ala Asn Val Ser Tyr Phe Lys Asp Thr Ile
225                 230                 235                 240

Ala Leu Ser Gly Ala Pro Ala Met Lys Gln Val Gln Phe Gly Val Ala
                245                 250                 255

Ser Ala Ser Val Asp Glu Phe Ser Gly Ile Leu Gly Ile Gly Ala Gly
            260                 265                 270

Glu Gly Val Asn Thr Asp Tyr Pro Asn Phe Ile Asp Ala Leu Ala Ala
        275                 280                 285

Gln Gly Val Thr Lys Thr Lys Ala Phe Ser Leu Ala Leu Gly Ser Lys
    290                 295                 300

Ala Glu Glu Glu Gly Val Ile Ile Phe Gly Gly Val Asp Thr Ala Lys
305                 310                 315                 320

Phe Gln Gly Lys Leu Ala Thr Leu Pro Ile Val Pro Ala Lys Glu Ser
                325                 330                 335

Pro Asp Gly Val Ala Arg Tyr Trp Val Arg Met Asn Ser Ile Ala Leu
            340                 345                 350

Ser Pro Pro Gln Gly Lys Ala Thr Thr Phe Ser Gln Thr Asp Met Thr
        355                 360                 365

Val Phe Leu Asp Ser Gly Ser Thr Leu Thr Leu Leu Pro Glu Gln Val
    370                 375                 380

Val Glu Glu Ile Ala Thr Gly Leu Gly Ser Ser Gly Met Asp Ser Thr
385                 390                 395                 400

Gly Tyr Tyr Ala Ile Asn Cys Asn Leu Ala Ser Gln Lys Gly Thr Ile
                405                 410                 415

Asp Phe Ala Phe Asp Gly Val Thr Ile Ser Val Pro Tyr Ser Glu Val
```

420 425 430

Ile Arg Gln Val Ser Ser Ser Pro Pro Gln Cys Tyr Leu Gly Met Met
435 440 445

Gly Ser Thr Glu Phe Ala Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala
450 455 460

Tyr Ala Val Phe Asp Leu Thr Gly Asn Ser Ile His Leu Ala Gln Tyr
465 470 475 480

Ala Asn Cys Gly Thr Lys Val Leu Thr Ile Thr Pro Asp Ser Ala Leu
485 490 495

Gln Gly Leu Ser Ser Ser Cys Gly Gly Gly Ser Glu Ser Pro Ala Asn
500 505 510

Pro Pro Ala Ser Ser Ser Ser Ser Ala Ala Pro Ala Ala Pro Ser Lys
515 520 525

Ser Ala Ala Ser Lys Pro Ser Ala Pro Ala Ser Ser Ser Val Gln Pro
530 535 540

Val His Ser Pro Thr Pro Ala Ala Ser Lys Pro Ala Asp Gln Thr Pro
545 550 555 560

Pro Ala Thr Thr Thr Ala Ala Ser Thr Pro Lys Ser Thr Pro Ser Ser
565 570 575

Val Ser Asp Ala Ala Gly Lys Ser Ser Ala Gly Arg Val Asn Val Gln
580 585 590

Ala Val Gly Trp Ser Met Val Ser Ala Ala Met Gly Leu Leu Leu Leu
595 600 605

<210> 188
<211> 655
<212> PRT
<213> Trichoderma virens

<400> 188

Met Gly Ile Ser Ser Phe Leu Val Leu Ser Leu Ala Val Leu Ala Gln
1 5 10 15

Ala Arg Pro Arg His Ala Phe Glu Pro Glu Asp Val Gly Asp Arg Ile
20 25 30

Thr Leu Pro Val Ile Ser Ala Arg Ala Val Asp Val Lys Gly Asp Leu
35 40 45

Ser Gln Arg Ser Ala Ala Asp Glu Glu Asp Lys Pro Phe His Ile Leu
50 55 60

```
Pro Phe Pro Tyr Pro Ser Lys Arg Asp Val Glu Ser Arg Glu Glu Glu
65                  70                  75                  80

Asp Lys Pro Trp His Ile Leu Pro Phe Pro Tyr Pro Ser Lys Arg Asp
                85                  90                  95

Val Glu Ser Arg Glu Glu Glu Asp Lys Pro Trp His Ile Leu Pro Phe
            100                 105                 110

Pro Gly Pro Ser Lys Arg Lys Ile Leu Glu Asp Asp Asp Gly Ala Asp
        115                 120                 125

Gly Arg Ile Thr Leu Pro Val Pro Gln Arg Ala Arg Arg Ser Glu Gly
    130                 135                 140

Glu Glu Asp Lys Pro Phe His Ile Leu Pro Phe Asn Asp Lys Arg Lys
145                 150                 155                 160

Leu Pro Val Glu Asp Val Pro Ser Gly Thr Ile Thr Leu Pro Ile Ile
                165                 170                 175

His Arg His Arg Ser Phe Leu Asp Lys Arg Ala Val Glu Val Gln Val
            180                 185                 190

Glu Asn Arg Ser Asp Val Ser Tyr Tyr Ala Gln Leu Asn Ile Gly Thr
        195                 200                 205

Pro Pro Gln Thr Val Tyr Ala Gln Ile Asp Thr Gly Ser Phe Glu Leu
    210                 215                 220

Trp Val Asn Pro Asp Cys Ser Asn Val Gln Thr Gly Asp Gln Arg Phe
225                 230                 235                 240

Cys Arg Ala Ile Gly Val Tyr Asp Pro Lys Ser Ser Ser Thr Ser Phe
                245                 250                 255

Val Thr Gly Ser Ala Ala Gln Leu Arg Tyr Gly Ile Gly Ser Ala Asn
            260                 265                 270

Val Ser Tyr Val Gln Asp Ser Ile Ser Leu Pro Gly Ser Ala Thr Met
        275                 280                 285

Lys Gln Val Gln Phe Gly Val Ala Leu Ser Ser Val Asp Glu Phe Ser
    290                 295                 300

Gly Ile Leu Gly Ile Gly Ala Gly Asp Gly Phe Asn Thr Leu Tyr Pro
305                 310                 315                 320

Asn Phe Ile Asp Glu Leu Ala Ser Gln Gly Val Thr Lys Thr Lys Ala
                325                 330                 335
```

```
Phe Ser Leu Ala Leu Gly Ser Lys Ala Glu Glu Glu Gly Val Ile Ile
            340                 345                 350

Phe Gly Gly Val Asp Thr Gly Lys Phe Thr Gly Lys Leu Ala Asn Leu
        355                 360                 365

Pro Ile Val Pro Ala Asp Asp Ser Pro Asp Gly Val Ala Arg Tyr Trp
    370                 375                 380

Val Gly Met Asn Ser Ile Ser Leu Ser Pro Pro Asn Gly Lys Ser Thr
385                 390                 395                 400

Thr Phe Ala Gln Thr Lys Met Thr Val Phe Leu Asp Ser Gly Ser Thr
                405                 410                 415

Leu Thr Leu Leu Pro Gln Ser Leu Val Asn Glu Ile Ala Asp Gly Leu
            420                 425                 430

Gly Ser Thr Gly Thr Asp Asp Ser Gly Phe Ala Ile Val Asp Cys Asp
        435                 440                 445

Leu Ala Asn Gln Pro Gly Thr Ile Asp Phe Ala Phe Asp Gly Val Thr
    450                 455                 460

Ile Lys Val Pro Tyr Ser Glu Met Ile Arg Ser Val Asn Ser Leu Pro
465                 470                 475                 480

Pro His Cys Tyr Leu Gly Met Met Gly Ser Thr Gln Phe Ala Leu Leu
                485                 490                 495

Gly Asp Thr Phe Leu Arg Ser Ala Tyr Ala Val Phe Asp Leu Thr Gly
            500                 505                 510

Asn Met Ile His Leu Ala Gln Tyr Val Asn Cys Gly Thr Asn Val Lys
        515                 520                 525

Ser Ile Thr Ser Thr Ser Ser Leu Leu Gly Leu Ala Gly Ser Cys Ser
    530                 535                 540

Ser Asp Gly Ser Glu Ser Pro Ser Ser Pro Ser Ser Ser Ser Thr Ser
545                 550                 555                 560

Ser Ser Pro Ser Lys Thr Ala Ser Lys Ala Ala Pro Ser Ala Thr Ala
                565                 570                 575

Pro Ser Ser Ser Thr Val Gln Pro Pro Ser Ser Ala Gln Ser Thr Ala
            580                 585                 590

Ala Ser Pro Ser Ala Ala Arg Ser Ser Asp Ala Ala Ser Thr Thr Ala
        595                 600                 605
```

```
Ala Asn Thr Ala Lys Ser Ser Ala Thr Gly Gly Ala Asp Ala Glu Ser
    610                 615                 620

Ala Gln Ser Gly Asp Lys Asn Gly Ala Gly Lys Thr Gly Val His Ser
625                 630                 635                 640

Leu Ala Ile Ser Met Val Phe Ala Ala Met Gly Leu Leu Leu Ile
                645                 650                 655

<210>  189
<211>  545
<212>  PRT
<213>  Glomerella graminicola

<400>  189

Met Thr Leu Pro Val Ile Pro Tyr Thr Thr Gln Asp Lys Thr Asn Val
1               5                   10                  15

Ala Pro Arg Gly Leu Ser Leu Pro Ala Asp Glu Asp Ala Glu Thr Ser
            20                  25                  30

Met Met Met Thr Leu Pro Val Thr Ser His Gln Arg Arg Lys Arg Arg
        35                  40                  45

Thr Arg Ser Pro Arg Lys Val Leu Leu Asp Asp Ile Leu Asp Ser Asn
    50                  55                  60

Leu Ala Pro Leu Pro Ala Ala Pro Val Val Lys Pro Pro Ile Ser Met
65                  70                  75                  80

Arg Gly Leu Pro Val Val Asp Gly Ala Asp Ala Asn Gly Ala Phe Val
                85                  90                  95

Thr Leu Pro Val Ile His Ser Thr Lys Arg Gly Val Phe Ser Arg Gln
            100                 105                 110

Val Glu Ala Lys Leu Ala Asn Arg Ser Asp Val Ala Tyr Tyr Ala Gln
        115                 120                 125

Leu Asn Ile Gly Thr Pro Pro Gln Ala Val Tyr Ala Gln Leu Asp Thr
    130                 135                 140

Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys Asn Val Leu Ala Ala
145                 150                 155                 160

Ser Asp Gln Arg Phe Cys Glu Ala Val Gly Phe Tyr Asp Pro Ala Arg
                165                 170                 175

Ser Thr Thr Ser Val Gln Met Gln Thr Thr Lys Thr Leu Arg Tyr Gly
            180                 185                 190
```

```
Ile Gly Ala Ala Asn Ile Ser Tyr Val Arg Asp Ser Leu Ala Leu Ala
        195                 200                 205

Gly Ser Ser Ser Thr Met Arg Gln Val Gln Phe Gly Val Ala Thr Ser
    210                 215                 220

Ser Glu Asp Gln Phe Ala Gly Ile Leu Gly Ile Gly Ala Gly Glu Gly
225                 230                 235                 240

Val Asn Thr Arg Tyr Lys Asn Leu Ile Asp Glu Leu Ala Ala Gln Gly
                245                 250                 255

Val Thr Arg Thr Lys Ala Phe Ser Leu Gly Leu Gly Ser Lys Asp Glu
            260                 265                 270

Gln Glu Gly Ala Ile Ile Phe Gly Gly Ile Asp Thr Ser Lys Phe Ser
        275                 280                 285

Gly Pro Leu Ala Arg Leu Pro Ile Ile Pro Ala Asp Glu Ala Pro Asp
    290                 295                 300

Gly Val Ala Arg Tyr Trp Val Asn Met Gln Ser Leu Ser Leu Thr Pro
305                 310                 315                 320

Pro Ser Arg Arg Thr Arg Leu Tyr Ala Asn Ser Ser Met Pro Val Phe
                325                 330                 335

Leu Asp Ser Gly Ala Thr Leu Thr Leu Leu Pro Glu Glu Leu Ala Asn
            340                 345                 350

Met Ile Ala Ala Asp Phe Gly Ser Ser Gly Ile Asp Ala Asn Gly Phe
        355                 360                 365

Tyr Pro Val Ser Cys Asn Leu Val Gly Leu Asn Gly Thr Val Asp Phe
    370                 375                 380

Asp Phe Asp Gly Met Lys Ile Gln Val Pro Tyr Ser Glu Ile Ile Arg
385                 390                 395                 400

Glu Leu Arg Thr Thr Pro Pro Thr Cys Tyr Leu Gly Ile Val Pro Asn
                405                 410                 415

Ala Asp Phe Thr Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Ala
            420                 425                 430

Val Phe Asp Leu Asp Ser Asn Val Ala Tyr Leu Ala Gln Tyr Thr Asn
        435                 440                 445

Cys Gly Thr Arg Thr Met Pro Ile Asn Gln Pro Gln Asp Ile Ala Ala
    450                 455                 460
```

```
Ile Arg Gly Leu Cys Pro Ser Pro Ala Gly Pro Gly Gly Ser Leu Pro
465                 470                 475                 480

Ala Ala Asn Gly Thr Thr Asn Ser Pro Ser Ser Ser Ser Gly Ser Asn
                485                 490                 495

Arg Val Pro Ser Thr Gly Ser Asn Val Pro Gly Ser Pro Thr Pro Glu
            500                 505                 510

Thr Ser Gly Val Pro Ala Gly Thr Ala Ser Ala Ala Arg Ala Thr Gly
        515                 520                 525

Arg Ser Met Leu Ala Thr Val Ser Ala Leu Leu Leu Ala Ala Met Phe
    530                 535                 540

Trp
545


<210>  190
<211>  544
<212>  PRT
<213>  Metarhizium acridum

<400>  190

Met Val Ser Phe Leu Ile Thr Thr Ala Val Leu Ser Leu Ser Leu Ser
1               5                   10                  15

Val His Gly Trp Pro Gln Val Arg Asn Glu Ser Arg Phe Phe Gly Glu
            20                  25                  30

Glu Ile Arg Ala Glu Asn Ile Val Ala Asp Ile Ser Ser Arg Glu Leu
        35                  40                  45

Pro Phe Val Gly Glu Ala Leu Ser Val Gly Thr Leu Pro Val Pro Gln
    50                  55                  60

Leu Ser Gln Arg Asp Asp Ala Val Gly Ser Leu Glu Ala Thr Glu Asp
65                  70                  75                  80

Asp Gln Asp Ser Ser Ser Asn Asn Ser Phe Gln Glu Asp Ala Lys Arg
                85                  90                  95

Gly Pro Pro Glu Gly Asp Ile Ser Pro Gly His Leu Thr Leu Pro Val
            100                 105                 110

Leu His Val Glu Arg Arg Leu Asp Lys Arg Asp Val Glu Val Arg Leu
        115                 120                 125

Glu Asn Arg Ser Asp Val Ala Tyr Tyr Val Gln Pro Asn Leu Gly Thr
    130                 135                 140
```

```
Asn Pro Asp Pro Lys Lys Phe Lys Val Asn Ile Gly Asn Pro Val Gln
145                 150                 155                 160

Lys Val Phe Ala Gln Leu Asp Thr Gly Ser Phe Glu Leu Trp Val Asn
                165                 170                 175

Pro Asp Cys Thr Ser Leu Pro Ser Ser Ala Asp Lys Gln Phe Cys Gln
            180                 185                 190

Ala Val Gly Gln Tyr Asn Pro Leu Arg Ser Ser Ser Ser Lys Gly Ser
        195                 200                 205

Asn Leu Ser Thr Glu Leu Arg Tyr Gly Ile Gly Ser Ala Gln Ile Thr
    210                 215                 220

Tyr Phe Leu Asp Asp Ile Ala Leu Val Asp Ser Arg Gln Met Lys Gln
225                 230                 235                 240

Val Gln Phe Gly Val Ala Arg Ser Thr Lys Asp Gln Phe Ser Gly Ile
                245                 250                 255

Leu Gly Ile Gly His Gly Val Gly Val Asn Thr Gly Tyr Arg Asn Phe
            260                 265                 270

Val Asp Gln Leu Ala Asp Gln Gly Ile Thr Lys Thr Lys Ala Tyr Ser
        275                 280                 285

Val Ala Leu Gly Ser Lys Ala Asp Arg Ala Gly Val Val Val Met Gly
    290                 295                 300

Gly Val Asp Thr Ala Lys Phe Ala Gly Arg Leu Thr Pro Leu Pro Leu
305                 310                 315                 320

Ile Pro Gly Asp Lys Ser Pro Asp Gly Val Thr Arg Phe Trp Val Asn
                325                 330                 335

Leu Thr Ser Val Gln His Asn Ser Glu Ser Gly Arg Thr Ala Asn Leu
            340                 345                 350

Thr Gly Ala Thr Met Pro Val Phe Met Asp Thr Gly Ala Thr Leu Thr
        355                 360                 365

Leu Leu Pro Pro Arg Leu Ala Asn Asp Ile Ala Arg Arg Val Gly Ala
    370                 375                 380

Arg Gly Leu Asp Arg Asn Gly Leu Tyr Met Val Asp Cys Gly Val Ala
385                 390                 395                 400

Gly Lys Asn Gly Ser Leu Asp Phe Asn Phe Asp Gly Val Thr Ile Arg
                405                 410                 415
```

```
Val Pro Tyr Ser Glu Met Val Arg Glu Ile Ala Thr Leu Pro Pro Ser
            420                 425                 430

Cys Tyr Leu Gly Ile Met Pro Ser Thr Ser Phe Thr Leu Leu Gly Asp
        435                 440                 445

Thr Phe Leu Arg Ser Ala Tyr Val Leu Phe Asp Ile Ser Asn Asn Met
    450                 455                 460

Thr Tyr Met Ala Pro Tyr Ala Asn Cys Gly Ser Lys Thr Gln Ser Ile
465                 470                 475                 480

Asp Ser Ser Thr Asp Leu Thr Ser Ile Val Gly Thr Cys Ser Pro Gln
                485                 490                 495

Gln Val Asn Glu Leu Ser Lys Pro Val Gly Gly Gly Ser Ser Asp Gly
            500                 505                 510

Asn Ser Gly Asn Lys Asp Asn Gly Ala Gly Leu Ala Arg Met Ser Trp
        515                 520                 525

Ser Trp Phe Gly Val Leu Gly Ala Phe Ala Ile Gly Ala Leu Thr Leu
    530                 535                 540


<210>  191
<211>  506
<212>  PRT
<213>  Thielavia terrestris

<400>  191

Met Ala Phe Ser Phe Leu Leu Leu Pro Thr Val Leu Leu Ile Pro Leu
1               5                   10                  15

Phe Cys Arg His Val Thr Ala Leu Gln Ala Thr Ala Leu Arg Gln Thr
            20                  25                  30

Ala His Asp Pro Gly Cys Val His Leu Pro Val Ile His Ser Thr Asn
        35                  40                  45

Val Asn Tyr Phe Ser Ser Lys Arg Ala Val Gln Leu Gln Leu Ala Asn
    50                  55                  60

Arg Ser Asp Val Ala Tyr Tyr Ala Gln Leu Ser Ile Gly Thr Pro Pro
65                  70                  75                  80

Gln Pro Val Phe Val Gln Leu Asp Thr Gly Ser Phe Glu Leu Trp Val
                85                  90                  95

Asn Pro Asp Cys Thr Ser Ile Thr Gly Ala Asp Ala Ala Phe Cys Glu
            100                 105                 110

Arg Thr Gly Gln Phe Asp Thr Lys Lys Ser Ser Thr Ala Ile Ser Leu
```

```
        115                 120                 125

Gly Ala Thr Lys Thr Leu Gln Tyr Gly Ile Gly Ser Ala Asn Ile Thr
    130                 135                 140

Tyr Phe Thr Asp Thr Ile Thr Leu Ala Gly Ser Ser Ala Ala Leu Gln
145                 150                 155                 160

Ala Val Gln Phe Gly Val Ala Thr Ala Ser Gln Asp Ala Ser Ser Gly
                165                 170                 175

Ile Leu Gly Ile Gly Tyr Gly Lys Gly Ile Ala Thr Asn Tyr Pro Asn
            180                 185                 190

Phe Ile Asp Gln Leu Arg Ala Gln Asn Val Thr Arg Val Lys Ala Tyr
        195                 200                 205

Thr Leu Ala Leu Gly Ser Lys Asp Val Glu Glu Gly Val Ile Val Phe
    210                 215                 220

Gly Gly Val Asp Thr Ser Lys Phe Ala Gly Lys Leu Ala Lys Leu Pro
225                 230                 235                 240

Ile Ile Pro Ala Ala Gln Ser Pro Asp Gly Val Pro Arg Phe Trp Val
                245                 250                 255

Glu Met Gln Ser Val Ser Met Thr Pro Pro Asn Gly Val Ser His Val
            260                 265                 270

Tyr Asn Ala Ser Ser Thr Pro Leu Phe Phe Asp Ser Gly Ser Thr Met
        275                 280                 285

Thr Leu Leu Pro Pro Asp Leu Thr Asn Ala Ile Ala Arg Asp Phe Gly
    290                 295                 300

Ala Gln Gly Pro Asp Ala Asn Gly Phe Phe Arg Ile Asp Cys Ala Leu
305                 310                 315                 320

Thr Thr Leu Asn Gly Thr Val Asp Phe Ala Phe Asp Gly Val Thr Ile
                325                 330                 335

Lys Val Pro Tyr Lys Glu Leu Ala Arg Glu Val Ala Ser Ser Pro Pro
            340                 345                 350

Val Cys Phe Leu Gly Ile Met Ser Ser Asp Arg Phe Thr Leu Leu Gly
        355                 360                 365

Asp Thr Phe Leu Arg Ser Ala Tyr Ala Val Phe Asp Leu Glu Thr Asn
    370                 375                 380

Ala Ile Trp Leu Ser Gln Ala Glu Asn Cys Gly Ser Ser Pro Ala Ala
```

385 390 395 400

Leu Asn Asn Ile Gln Asp Leu Ala Ala Val Thr Gly Lys Cys Gly Val
405 410 415

Thr Glu Ala Ala Asp Lys Asp Thr Ser Ser Thr Ala Val Ser Ser Val
420 425 430

Ala Pro Glu Ser Ala Glu Ala Leu Pro Ala Pro Thr Ala Ser Thr Val
435 440 445

Gly Leu Ala Ala Thr Gly Thr Thr Ser Pro Gly Arg Thr Thr Pro Thr
450 455 460

Ala Pro Thr Ala Ser Thr Thr Pro Thr Thr Pro Ser Ser Ser Ala Gly
465 470 475 480

Ser Cys Phe Arg Gly Gln Ala Gly Ile Val Trp Val Val Gly Val Met
485 490 495

Met Leu Leu His Met Leu Lys Leu Val Leu
500 505

<210> 192
<211> 524
<212> PRT
<213> Podospora anserina

<400> 192

Met Ala Phe Ser Leu Leu Leu Ser Ala Ser Val Leu Leu Leu Ser Ser
1 5 10 15

Thr Phe Ser Gly His Ala Val Ala Ser Ser Leu Pro Phe Thr Asn Thr
20 25 30

Thr Ile Pro Pro Thr Asn Val Ser Ile Pro His Thr His Ala Pro Ile
35 40 45

Lys Leu Ile Asn Ser Ser Val Ile Ala His Asp Asp Gly Cys Val His
50 55 60

Leu Pro Ile Val His Ser Thr Asn Ala Asn His Phe Ser Lys Lys Arg
65 70 75 80

Gly Val Gln Leu Gln Leu Ala Asn Arg Ser Asp Ile Ala Tyr Tyr Ala
85 90 95

Gln Leu Ser Ile Gly Thr Pro Pro Gln Pro Val Phe Val Gln Leu Asp
100 105 110

Thr Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys Thr Thr Val Gln
115 120 125

```
Gly Ala Asp Ala Ala Phe Cys Gln Gln Val Gly Arg Tyr Asp Gly Asn
    130                 135                 140

Thr Ser Ser Thr Ala Lys Ser Leu Gly Thr Thr Lys Thr Leu Lys Tyr
145                 150                 155                 160

Gly Ile Gly Thr Ala Asn Ile Thr Tyr Phe Glu Asp Thr Ile Thr Leu
                165                 170                 175

Ala Gly Thr Ala Thr Ala Leu Gln Ala Val Gln Phe Gly Val Ala Thr
            180                 185                 190

Ala Thr Glu Asp Thr Phe Ser Gly Ile Leu Gly Ile Gly Tyr Gly Lys
        195                 200                 205

Gly Ile Ala Thr Lys Tyr Lys Asn Phe Val Asp Gln Leu Val Ala Gln
    210                 215                 220

Asn Ala Ile Arg Ala Lys Ala Tyr Thr Leu Ala Leu Gly Ser Lys Glu
225                 230                 235                 240

Glu Lys Glu Gly Val Ile Val Phe Gly Gly Val Asp Pro Ser Lys Phe
                245                 250                 255

Ala Gly Pro Leu Ala Lys Leu Pro Ile Ile Asp Ala Asn Asn Ser Pro
            260                 265                 270

Asp Gln Val Pro Arg Phe Trp Val Asp Met Asn Ser Ile Ala Ile Thr
        275                 280                 285

Pro Pro Asn Asn Asp Thr Lys Val Tyr Glu Gly Ser Lys Met Pro Val
    290                 295                 300

Phe Leu Asp Ser Gly Ser Thr Met Thr Leu Leu Pro Pro Asp Leu Ala
305                 310                 315                 320

Ala Thr Ile Ala Lys Asp Phe Gly Ala Asp Lys Glu Asp Asp Asn Gly
                325                 330                 335

Phe Tyr Arg Ile Asp Cys Gly Leu Thr Ser Met Asn Gly Thr Leu Asp
            340                 345                 350

Phe Ser Phe Asn Gly Leu Asn Ile Arg Val Pro Tyr Lys Glu Met Ile
        355                 360                 365

Arg Glu Val Pro Ser Asn Pro Pro Ala Cys Phe Leu Gly Ile Thr Pro
    370                 375                 380

Ser Lys Lys Phe Thr Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr
385                 390                 395                 400
```

```
Val Val Phe Asp Leu Glu Thr Asn Ser Ile Trp Met Thr Gln Ala Thr
                405                 410                 415

Ser Cys Gly Ser Thr Pro Ala Ala Leu Gly Ser Val Asn Asp Leu Ser
            420                 425                 430

Met Val Val Gly Ala Cys Gly Leu Thr Ala Glu Pro Ala Val Thr Val
        435                 440                 445

Ser Ser Ala Gly Gly Thr Thr Ala Thr Pro Gly Val Gly Val Gly Gly
    450                 455                 460

Gly Gly Thr Gly Ser Asp Thr Asn Gly Ala Ser Ala Thr Val Ser Thr
465                 470                 475                 480

Val Val Val Pro Glu Ser Pro Pro Gly Ala Thr Ser Thr Ala Gly Ser
                485                 490                 495

Pro Val Thr Ser Ser Ser Ser Arg Cys His Pro Met Ala Val Val Ala
            500                 505                 510

Met Ala Phe Ala Leu Leu Ala Leu Ala Asn Met Gly
        515                 520


<210>  193
<211>  496
<212>  PRT
<213>  Chaetomium thermophilum

<400>  193

Met Ala Val Pro Phe Leu Ser Ser Cys Leu Val Leu Ser Thr Val Trp
1               5                   10                  15

Leu Ser Ser Leu Val Thr Ala Gln His Leu Pro His Glu Lys Gly Cys
            20                  25                  30

Val His Leu Pro Ile Val His Ser Thr Asn Ala Arg Leu Phe Gly Lys
        35                  40                  45

Arg Gly Val Gln Leu Gln Leu Ala Asn Arg Ser Asp Val Ala Tyr Tyr
    50                  55                  60

Ala Gln Leu Ser Ile Gly Thr Pro Pro Gln Pro Val Phe Val Gln Leu
65                  70                  75                  80

Asp Thr Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys Thr Thr Val
                85                  90                  95

Glu Gly Ala Asp Ala Val Phe Cys Glu Arg Val Gly Gln Tyr Asp Ala
            100                 105                 110
```

```
Ser Lys Ser Ser Thr Ala Val Ser Leu Gly Thr Ser Arg Thr Leu Arg
        115                 120                 125

Tyr Gly Ile Gly Thr Ala Asn Ile Thr Tyr Val Thr Asp Thr Ile Thr
    130                 135                 140

Leu Ala Gly Thr Gly Thr Thr Leu Gln Gly Val Gln Phe Gly Val Ala
145                 150                 155                 160

Thr Ala Thr Glu Asp Ala Phe Ser Gly Ile Leu Gly Ile Gly Tyr Gly
                165                 170                 175

Lys Gly Ile Ala Thr Arg Tyr Leu Asn Phe Val Asp Gln Leu Lys Glu
            180                 185                 190

Gln Asn Ala Thr Lys Val Lys Ala Phe Ser Leu Ser Leu Gly Ser Lys
        195                 200                 205

Asp Ala Gln Glu Gly Val Val Val Phe Gly Gly Val Asp Thr Ser Lys
    210                 215                 220

Phe Ala Gly His Leu Thr Gln Val Pro Ile Ile Pro Ala Ser Gln Ser
225                 230                 235                 240

Pro Asp Gly Val Pro Arg Phe Trp Val Ser Met Arg Ser Leu Ala Met
                245                 250                 255

Thr Pro Pro Ser Gly Ile Ser Lys His Tyr Ser Gly Ser Glu Met Pro
            260                 265                 270

Val Phe Leu Asp Ser Gly Ser Thr Met Thr Leu Leu Pro Pro Asn Leu
        275                 280                 285

Thr Glu Ala Ile Ala Arg Asp Phe Gly Ser Lys Ser Glu Asp Ala Tyr
    290                 295                 300

Gly Phe His Gln Ile Asp Cys Ser Leu Thr Lys Leu Asn Gly Thr Leu
305                 310                 315                 320

Asp Phe Tyr Phe Asp Gly Val Met Ile Lys Val Pro Tyr Lys Glu Leu
                325                 330                 335

Thr Arg Glu Val Pro Thr Asn Pro Pro Ala Cys Phe Leu Gly Ile Met
            340                 345                 350

Ala Ser Asp Gln Phe Thr Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala
        355                 360                 365

Tyr Ala Leu Phe Asp Leu Glu Thr Asp Ser Ile Trp Met Thr Gln Ala
    370                 375                 380
```

```
Ala Asn Cys Gly Ser Thr Pro Ala Ala Leu Asn Ser Val Glu Asp Ile
385                 390                 395                 400


Gln Arg Ile Thr Gly Leu Cys Asp Leu Ser Val Pro Ala Asp Asn Thr
                405                 410                 415


Thr Ser Ser Thr Glu Ala Phe Thr Pro Met Thr Glu Val Asp Gln Val
            420                 425                 430


Ser Met Thr Thr Val Thr Ser Val Thr Pro Ile His Thr Ser Thr Thr
        435                 440                 445


Ala Thr Ser Pro Thr Glu Glu Val Ser Ile Gln Ser Ser Ala Thr Ser
    450                 455                 460


Ile Ser Gly Ala Asn Lys Leu Gly Arg Gly Asn Met Glu Gly Ile Leu
465                 470                 475                 480


Phe Trp Gly Pro Gly Val Val Ile Ala Leu His Val Leu Ile Gly Val
                485                 490                 495


<210>  194
<211>  479
<212>  PRT
<213>  Verticillium dahliae

<400>  194

Met Thr Leu Pro Val Pro Val Thr Gly Gly Arg Gly Asp Gln His Asp
1               5                   10                  15


Gly Glu Ala Ser Arg Arg Gln Leu Pro Val Asp Asp Asp Asp Asp Asp
            20                  25                  30


Thr Gly Ala Phe Tyr Thr Leu Pro Ile Ile His Ser Thr Lys Arg Gly
        35                  40                  45


Val Phe Ser Arg Gln Ile Glu Val Glu Leu Ala Asn Arg Ser Asp Val
    50                  55                  60


Ala Tyr Tyr Ala Gln Leu Asn Ile Gly Thr Pro Pro Gln Pro Val Tyr
65                  70                  75                  80


Ala Gln Leu Asp Thr Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys
                85                  90                  95


Thr Val Leu Arg Pro Ala Asp Gln Arg Phe Cys Gln Ala Val Gly Val
            100                 105                 110


Tyr Asp Pro Ala Arg Ser Ser Ser Ser Ser Leu Leu Ser Ser Thr Ala
        115                 120                 125
```

```
Ser Leu Arg Tyr Gly Ile Gly Thr Ala Asn Ile Ser Tyr Val Arg Asp
    130                 135                 140

Asp Val Ser Phe Ala Gly Ser Pro Val Leu Ser His Val Arg Phe Gly
145                 150                 155                 160

Met Ala Thr Ala Thr Thr Asp Gln Phe Ala Gly Ile Leu Gly Leu Gly
                165                 170                 175

His Gly Lys Asn Tyr Thr Val Thr Tyr Pro Asn Met Met Asp Glu Leu
            180                 185                 190

Val Ala Gln Gly Ala Ile Arg Thr Lys Ala Tyr Ser Leu Ala Leu Gly
        195                 200                 205

Ser Lys Thr Glu Gln Gln Gly Leu Leu Val Leu Gly Gly Ile Asp Thr
    210                 215                 220

Ala Lys Tyr Ser Gly His Leu Ala Ala Leu Pro Val Ile Pro Ala Gln
225                 230                 235                 240

Gln Ala Pro Asp Arg Val Ala Arg Phe Trp Val Asn Leu Arg Ser Leu
                245                 250                 255

Ala Leu Thr Pro Pro Ser Gly Val Thr Arg Ala Pro Tyr Val Ala Ala
            260                 265                 270

Ala Gly Leu Pro Val Phe Leu Asp Ser Gly Ala Thr Met Thr Leu Leu
        275                 280                 285

Pro Arg Ala Leu Ala Asp Ala Ile Ala Ala Asp Phe Gly Ala Pro Pro
    290                 295                 300

Ser Ser Ser Pro Asp Asp Pro Glu Thr Ser His Thr Phe Tyr Glu Val
305                 310                 315                 320

Asp Cys Ser Met Ala Asp Ala Pro Gly Thr Leu Asp Phe Ser Phe Gly
                325                 330                 335

Arg Ser Leu Thr Ile Arg Val Pro Tyr Ala Glu Met Val Arg Arg Thr
            340                 345                 350

Arg Ala Asp Pro Pro Arg Cys Val Leu Gly Phe Val Pro Asp Asp Asp
        355                 360                 365

Phe Ala Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Ala Val Phe
    370                 375                 380

Asp Leu Glu Ser Asp Val Val Tyr Met Ala Gln Tyr Arg Asn Cys Gly
385                 390                 395                 400
```

Glu Arg Pro Met Ala Val Arg Arg Val Gln Asp Ile His Ala Ile Val
405 410 415

Gly Leu Cys Glu Ala Pro Ala Arg Pro Ser Gln Ala Val Ala Ala Pro
420 425 430

Asp Thr Ala Pro Thr Glu Ala Ala Thr Phe Ala Ser Gly Pro Val Pro
435 440 445

Gly Leu Val Asp Val Ser Ala Ala Ala Gly Leu Ser Leu Ser Arg Ala
450 455 460

Trp Val Trp Ser Ile Ala Phe Ala Met Val Leu Val His Val Ala
465 470 475

<210> 195
<211> 489
<212> PRT
<213> Myceliophthora thermophila

<400> 195

Met Ala Ile Pro Val Leu Phe Ser Ala Leu Val Leu Leu Val Ala Leu
1 5 10 15

Leu Cys Cys His Ala Thr Ala Ala Leu Gln Gln Leu Ala His Asp Val
20 25 30

Gly Cys Val His Leu Pro Val Val His Ser Thr Lys Val Asp Arg Phe
35 40 45

Ser Asp Lys Arg Gly Ile Gln Leu Gln Leu Ala Asn Arg Ser Asp Val
50 55 60

Ala Tyr Tyr Ala Gln Leu Ser Ile Gly Thr Pro Pro Gln Pro Val Phe
65 70 75 80

Val Gln Leu Asp Thr Gly Ser Phe Glu Leu Trp Val Asn Pro Asp Cys
85 90 95

Thr Thr Val Ser Gly Ser Asp Ala Val Phe Cys Glu Arg Ala Gly Arg
100 105 110

Tyr Asp Val Thr Lys Ser Ser Thr Ala Thr Ser Leu Gly Thr Asn Arg
115 120 125

Thr Leu Arg Tyr Gly Ile Gly Ala Ala Asn Ile Ser Tyr Phe Thr Asp
130 135 140

Thr Ile Ser Leu Ala Gly Ser Pro Met Met Leu Gln Asp Val Gln Phe
145 150 155 160

Gly Val Ala Thr Ala Ser Glu Asp Ala Phe Ser Gly Ile Leu Gly Ile

165 170 175

Gly Tyr Gly Lys Gly Ile Gly Thr Gly Tyr Pro Asn Phe Val Asp Gln
180 185 190

Leu Trp Glu Gln Asn Val Thr Arg Val Lys Ala Tyr Thr Leu Ala Leu
195 200 205

Gly Ser Lys Asp Ser Gln Glu Gly Val Ile Val Phe Gly Gly Val Asp
210 215 220

Thr Ser Lys Phe Ala Gly Lys Leu Ala Arg Leu Pro Val Ile Pro Pro
225 230 235 240

Ala Gln Ser Pro Asp Gly Val Pro Arg Phe Trp Val Glu Met Lys Ser
245 250 255

Leu Ser Ile Thr Arg Pro Ser Gly Leu Asn Thr Val Tyr Asp Gly Gly
260 265 270

Ala Met Pro Val Phe Leu Asp Ser Gly Ser Thr Met Thr Leu Leu Pro
275 280 285

Ala Asn Leu Thr Met Ala Val Ala Arg Asp Phe Gly Ala Gln Ala Pro
290 295 300

Asp Ala Asn Gly Phe Tyr Lys Ile Asp Cys Ala Leu Thr Ala Leu Asn
305 310 315 320

Gly Thr Leu Asp Phe Ala Phe Asp Gly Val Thr Val Arg Val Pro Tyr
325 330 335

Lys Glu Leu Thr Arg Glu Val Ala Ser Asn Pro Pro Ser Cys Phe Leu
340 345 350

Gly Ile Val Ala Ser Asp Arg Phe Thr Leu Leu Gly Asp Thr Phe Leu
355 360 365

Arg Ser Ala Tyr Thr Val Phe Asp Leu Glu Thr Asp Ser Ile Trp Met
370 375 380

Ala Pro Ala Val Asn Cys Gly Ser Ser Pro Ala Ala Leu Ser Asn Val
385 390 395 400

Gln Asp Leu Ser Ala Val Thr Gly Glu Cys Gly Val Arg Glu Ile Ala
405 410 415

Glu Ser Thr Ser Ser Thr Gln Val Pro Ser Thr Gly Val Asp Asp Thr
420 425 430

Glu Ala Gly Ala Val Pro Thr Ser Thr Thr Thr Val Val Ser Gln Pro

435 440 445

Ser Gly Thr Thr Thr Gln Met Gly Ala Arg Pro Thr Leu Asp Asn Ala
450 455 460

Ser Asn Pro Leu Gly Ala His Arg Leu Thr Trp Val Leu Val Ile Thr
465 470 475 480

Ala Ala Leu His Leu Phe Thr Gly Ile
485

<210> 196
<211> 518
<212> PRT
<213> Neurospora crassa

<400> 196

Met Ala Ala Phe Pro Phe Leu Ser Ala Ser Phe Val Leu Leu Gln Leu
1 5 10 15

Ala Leu Thr Cys Leu Ala Gln His Leu Asn Leu Thr Thr Gly Pro Leu
20 25 30

His Leu Thr Gly His Thr Pro Gly Asp Gly Cys Val His Leu Pro Ile
35 40 45

Ile His Ser Thr Asn Thr Asp His Phe Ala Arg Arg Gly Ile Gln Leu
50 55 60

Ala Leu Asn Asn Arg Ser Asp Val Ala Tyr Tyr Ala Gln Leu Glu Ile
65 70 75 80

Gly Thr Pro Pro Gln Thr Val Tyr Thr Gln Leu Asp Thr Gly Ser Phe
85 90 95

Glu Leu Trp Val Asn Pro Asp Cys Thr Thr Val Ser Pro Ser Asp Ser
100 105 110

Ser Phe Cys Asp His Ile Gly Phe Tyr Asn Ala Ser Leu Ser Ser Thr
115 120 125

Ser Lys Ser Leu Gly Thr Ser Lys Thr Leu Arg Tyr Gly Ile Gly Ala
130 135 140

Ala Asn Ile Ser Tyr Val Thr Asp Thr Ile Ser Leu Ser Gly Ser Ser
145 150 155 160

Thr Ser Leu Lys Asp Ile Gln Phe Gly Val Ala Thr Ser Ser Lys Asp
165 170 175

Ala Phe Ser Gly Ile Leu Gly Ile Gly Tyr Gly Gln Gly Leu Ala Thr
180 185 190

```
Lys Tyr Pro Asn Phe Ile Asp Gln Leu Tyr Ala Gln Lys Ile Thr Lys
        195                 200                 205

Val Lys Ala Tyr Thr Leu Ala Leu Gly Ser Lys Thr Ala Gln Gln Gly
    210                 215                 220

Ser Ile Val Phe Gly Gly Val Asp Thr Ser Lys Phe Ala Gly Pro Leu
225                 230                 235                 240

Gly Arg Leu Pro Ile Ile Pro Ala Glu Asp Ser Pro Asp Gly Val Pro
                245                 250                 255

Arg Phe Trp Val Gln Met Asn Gly Ile Ser Leu Thr Pro Pro Ser Gly
            260                 265                 270

Gln Ser Met Gly Val Tyr Glu Gly Ser Lys Ile Pro Ala Phe Leu Asp
        275                 280                 285

Ser Gly Ser Thr Met Thr Ile Leu Pro Pro Ala Leu Ala Asn Lys Ile
    290                 295                 300

Ala Glu Asp Phe Gly Ser Pro Glu Met Asp Ala Asn Gly Phe Tyr Arg
305                 310                 315                 320

Val Gly Cys Gly Tyr Val Glu Met Asn Gly Thr Met Asp Phe Glu Phe
                325                 330                 335

Val Gly Ala Gly Gln Lys Val Thr Val Arg Val Pro Tyr Lys Glu Met
            340                 345                 350

Ile Arg Glu Val Gly Gln Gly Glu Ser Lys Met Cys Phe Leu Gly Ile
        355                 360                 365

Met Gly Ser Glu Ser Phe Thr Leu Leu Gly Asp Thr Phe Leu Arg Ser
    370                 375                 380

Ala Tyr Ala Thr Ser Cys Gly Asn Thr Pro Ala Ala Leu Arg Asp Val
385                 390                 395                 400

Thr Asp Leu Ser Arg Val Val Gly Asn Cys Gln Ile Gln Leu Gly Glu
                405                 410                 415

Lys Glu Ala Val Val Asp Val Val Ser Glu Thr Ser Ile Ala Pro Pro
            420                 425                 430

Thr Gly Ser Thr Gly Asp Thr Asp Gly Val Thr Gly Thr Gly Gly Asn
        435                 440                 445

Gly Ser Gly Asn Gly Gly Thr Arg Thr Ala Trp Gly Phe Val Thr Thr
    450                 455                 460
```

```
Thr Leu Ala Val Pro Met Ala Thr Gly Leu Ala Gly Val Gly Gly Ser
465                 470                 475                 480


Gly Ser Gly Ser Met Ser Ala Thr Ala Leu Asp Ser Ser Gly Arg Ser
                485                 490                 495


Met Ala Gly Asp Val Val Leu Ser Ala Ala Val Ala Val Gly Ala Ala
            500                 505                 510


Val Leu Gly Ser Leu Leu
        515


<210>  197
<211>  497
<212>  PRT
<213>  Magnaporthe oryzae

<400>  197

Met Ala Ala Thr Ser Ile Arg Gly Leu Leu Leu Leu Ala Val Ala Ala
1               5                   10                  15


Ala Ala Gly Pro Leu Glu Ala Ala Gln Glu Pro His Asp Pro Gly Cys
            20                  25                  30


Leu His Met Pro Ile Met His Met Ser Lys Ala Glu Gln Tyr Gln Lys
        35                  40                  45


Arg Ala Val Lys Val Pro Phe Asp Gln Arg Phe Asp Val Gly Tyr Tyr
    50                  55                  60


Thr Lys Leu Ser Phe Gly Thr Pro Ala Gln Glu Ala Leu Val His Leu
65                  70                  75                  80


Asp Thr Gly Ser Phe Glu Leu Trp Ile Asn Pro Thr Cys Asn Asn Leu
                85                  90                  95


Asp Gly Ala Gly Glu Gln Gln Phe Cys Arg Ala Gly Gly Ser Tyr Asp
            100                 105                 110


Pro Ala Gln Ser Thr Thr Val Gln Arg Leu Gly Thr Thr Asn Thr Leu
        115                 120                 125


Arg Tyr Gly Ile Gly Ser Ala Asn Ile Ser Tyr Val Lys Asp Thr Val
    130                 135                 140


Gly Ile Pro Gly Thr Asn Met Ser Val Arg Ser Ala Gln Phe Gly Val
145                 150                 155                 160


Ala Thr Ser Ser Glu Thr Gln Asn Ala Gly Ile Leu Gly Ile Gly His
                165                 170                 175
```

```
Gly Val Gly Gln Ala Ile Gly Tyr Arg Asn Phe Ile Asp Glu Leu Lys
            180                 185                 190

Ala Gln Asn Val Thr Lys Thr Arg Ala Phe Ser Val Ala Leu Gly Gly
        195                 200                 205

Lys Asp Glu Lys Gln Gly Thr Val Val Phe Gly Gly Val Asp Thr Ser
    210                 215                 220

Lys Phe Ala Gly Gly Leu Ala Arg Leu Pro Ile Ile Pro Ala Ala Gln
225                 230                 235                 240

Ser Pro Asp Gly Val Arg Arg Tyr Trp Val Asn Met Ser Ser Ile Ser
                245                 250                 255

Leu His Pro Pro Ser Gly Arg Asn Lys Thr Tyr Pro Gly Thr Asn Met
            260                 265                 270

Pro Val Phe Leu Asp Thr Gly Ser Thr Leu Thr Leu Leu Pro Glu Ala
        275                 280                 285

Leu Val Lys Ser Val Ala Ser Asp Phe Gly Ser Met Gln Gln Asp Ala
    290                 295                 300

Gly Gly Tyr Trp Pro Val Asp Cys Ser Leu Val Gly Ile Asn Gly Thr
305                 310                 315                 320

Met Asp Phe Ala Phe Asp Gly Val Thr Ile Lys Val Pro Tyr Lys Glu
                325                 330                 335

Leu Ile Arg Gln Phe Gly Asn Ser Cys Val Leu Gly Leu Ser Ser His
            340                 345                 350

Ser Ser Phe Thr Leu Leu Gly Asp Thr Phe Met Arg Ser Ala Tyr Phe
        355                 360                 365

Val Phe Asp Gln Asp Ser Asp Cys Val Trp Met Thr Gln Tyr Thr Asn
    370                 375                 380

Cys Gly Ser Thr Pro Ala Ala Leu Ala Ser Val Ala Ser Leu Arg Thr
385                 390                 395                 400

Leu Gln Gly Ala Cys Pro Leu Lys Gln Gly Ser Val Ser Ala Val Thr
                405                 410                 415

Ala Gly Thr Ala Gly Ala Ala Ala Pro Ser Thr Thr Ala Ser Pro Lys
            420                 425                 430

Ala Pro Gly Ala Gly Gly Gly Ser Gly Ser Asn Gly Gly Gly Gly Ala
        435                 440                 445
```

```
Lys Gly Ser Pro Pro Pro Gly Ala Ser Ala Ser Ala Pro Asp Ser Lys
    450                 455                 460

Leu Lys Asn Ala Gly Gly Arg Ala Met Gln Val Pro Ala Ile Ser Ser
465                 470                 475                 480

Ala Val Val Thr Leu Val Leu Thr Thr Leu Ala Ala Leu His Leu Ala
                485                 490                 495

Leu
```

<210> 198
<211> 434
<212> PRT
<213> Chaetomium globosum

<400> 198

```
Met Pro Gln His Ser Asn Lys Pro Ser Thr Thr Thr Val Ser Leu Gly
1               5                   10                  15

Thr Pro Pro Gln Pro Val Phe Val Gln Leu Asp Thr Gly Ser Phe Glu
            20                  25                  30

Leu Trp Val Asn Pro Asp Cys Thr Thr Val Ser Gly Gly Asp Ala Val
        35                  40                  45

Phe Cys Gln Arg Ala Gly Arg Tyr Glu Ser Thr Ala Ser Ser Thr Ala
    50                  55                  60

Thr Ser Leu Gly Thr Thr Arg Thr Leu Arg Tyr Gly Ile Gly Ala Ala
65                  70                  75                  80

Asn Ile Ser Tyr Phe Thr Asp Thr Ile Ser Leu Ala Gly Ser Pro Met
                85                  90                  95

Ser Leu Gln Asp Val Gln Phe Gly Val Ala Thr Ala Ser Val Asp Ala
            100                 105                 110

Phe Ser Gly Ile Leu Gly Ile Gly Tyr Gly Lys Gly Ile Ala Thr Arg
        115                 120                 125

Tyr Pro Asn Phe Val Asp Gln Leu Arg Glu Gln Asn Ala Thr Arg Val
    130                 135                 140

Lys Ala Tyr Thr Leu Ala Leu Gly Ser Lys Asp Ala Gln Glu Gly Val
145                 150                 155                 160

Ile Val Phe Gly Gly Val Asp Thr Ser Lys Phe Ala Gly Lys Leu Ala
                165                 170                 175
```

```
Lys Leu Pro Ile Leu Pro Ala Ala Gln Ala Pro Asp Gly Val Pro Arg
            180                 185                 190

Phe Trp Val Asp Met Gln Ala Leu Ser Ile Thr Pro Pro Asn Gly Val
        195                 200                 205

Thr Thr Val Tyr Glu Gly Ser Ser Met Pro Val Phe Leu Asp Ser Gly
    210                 215                 220

Ser Thr Met Thr Leu Leu Pro Ala Asn Leu Thr Ala Ala Val Ala Arg
225                 230                 235                 240

Asp Phe Gly Ala Glu Ser Pro Asp Ser Asn Gly Phe Tyr Met Ile Asp
                245                 250                 255

Cys Ala Leu Thr Ala Leu Asn Gly Thr Leu Asp Phe Val Phe Asp Gly
            260                 265                 270

Val Thr Val Lys Val Pro Tyr Lys Glu Leu Thr Arg Glu Val Ala Ser
        275                 280                 285

Thr Pro Pro Ser Cys Phe Leu Gly Ile Met Ala Ser Asp Arg Phe Thr
    290                 295                 300

Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Thr Val Phe Asp Leu
305                 310                 315                 320

Glu Thr Asp Ser Ile Trp Met Thr Gln Ala Thr Asn Cys Gly Ser Ser
                325                 330                 335

Pro Ala Ala Leu Ser Asn Ile Gln Asp Leu Ser Val Val Val Gly Glu
            340                 345                 350

Cys Gly Ala Gly Ala Ser Glu Asp Ile Asp Thr Thr Ser Ser Thr Gln
        355                 360                 365

Phe Pro Ser Thr Ala Val Glu Asp Phe Glu Ser Gly Ala Ile Pro Thr
    370                 375                 380

Ser Thr Gly Ser Phe Gly Pro Gln Val Ser Glu Val Ala Pro Pro Asp
385                 390                 395                 400

Gln Ala Arg Pro Leu Pro Glu Asn Ser Gly Pro Ser Leu Arg Ala Ala
                405                 410                 415

Gly Phe Ile Trp Asn Leu Gly Met Ala Gly Ala Val His Leu Leu Ala
            420                 425                 430

Gly Leu
```

<210> 199
<211> 467
<212> PRT
<213> Magnaporthe oryzae

<400> 199

```
Met Lys Asn Thr Ala Leu Leu Val Ala Thr Ala Ala Ala Ser Val Ala
1               5                  10                  15

Ala Val Gly Ile Ala Glu Ile Pro Arg Glu Gln Val Ser Thr Ser Ser
            20                  25                  30

Gln Pro Ser Thr Ser Asp Pro Gly Phe Val Ser Phe Pro Ile Tyr His
        35                  40                  45

Arg Ser Val Ser Lys Pro Ile Leu Lys Arg Asn Thr Asp Val Thr Ile
    50                  55                  60

Tyr Asn Ile Ser Ser Val Ser Tyr Leu Ile Gln Leu Ser Ile Gly Thr
65                  70                  75                  80

Pro Gly Gln Gln Val Lys Val Ala Ile Asp Thr Gly Ser Asp Glu Leu
                85                  90                  95

Trp Val Asn Pro Asn Cys Thr Ala Val Lys Ser Gln Asp Gln Arg Ala
            100                 105                 110

Glu Cys Ile Ala Asp Gly Gln Tyr Asn Pro Gly Gln Ser Ser Thr Ser
        115                 120                 125

Gln Val Ser Thr Thr Ser Asn Asn Ile Pro Tyr Gly Lys Gly Asp Val
    130                 135                 140

Asn Ile Thr Tyr Tyr Lys Asp Ser Ile Ser Met Ser Asn Ser Ser Ile
145                 150                 155                 160

Ser Leu Thr Asn Val Ile Phe Gly Val Ala Thr Ser Ser Lys Asp Leu
                165                 170                 175

Asn Glu Gly Ile Met Gly Leu Gly Tyr Gly Asp Gly Val Asn Leu Arg
            180                 185                 190

Tyr Asn Asn Met Val Asp Ser Leu Phe Leu Gln Asn Val Thr Lys Ser
        195                 200                 205

Arg Ala Phe Ser Val Ala Leu Gly Ser Ala Glu Ala Ser Asn Ser Gly
    210                 215                 220

Val Ile Ser Phe Gly Gly Val Asp Thr Lys Lys Phe Ser Gly Lys Leu
225                 230                 235                 240

Gly Gln Met Pro Ile Leu Gly Pro Gln Gly Lys Glu Glu Ile Arg Arg
```

245 250 255

Tyr Trp Val Pro Met Asp Ser Ile Ala Met Ser Lys Asn Gly Gly Asn
260 265 270

Lys Thr Tyr Ser Gly Gly Asn Ile Pro Ile Val Ile Asp Ser Gly Ser
275 280 285

Thr Leu Ser Tyr Leu Pro Ser Ser Val Val Thr Ala Met Ala Met Asp
290 295 300

Ala Asn Ala Leu Trp Asn Ser Glu Gly Gly Val Tyr Phe Val Lys Cys
305 310 315 320

Asp Lys Met Pro Ala Asp Ala Ser Phe Asp Phe Ser Phe Asn Asn Gly
325 330 335

Ser Phe Arg Ile Ser Val Pro Trp Arg Asn Phe Phe Trp Asn Thr Gly
340 345 350

Gly Asn Thr Cys Val Leu Gly Ala Val Pro Ile Lys Ser Gly Ser Val
355 360 365

Thr Ala Leu Leu Gly Asp Ser Phe Met Arg Ser Val Tyr Thr Val Phe
370 375 380

Asp Gln Thr Ser Asn Met Val Phe Met Ala Pro Tyr Ala Asn Cys Gly
385 390 395 400

Ser Asn Glu Gln Met Ile Pro Ala Ser Pro Ser Gly Ala Ala Ala Asn
405 410 415

Phe Thr Gly Glu Cys Ser Pro Gly Gln Gly Leu Pro Asp Pro Thr Pro
420 425 430

Gln Lys Asn Ala Ala Gly Lys Ala Ser Gly Glu Pro Ser Lys Phe Glu
435 440 445

Phe Trp Ala Cys Ala Ala Val Leu Val Val Gly His Leu Val Phe Gly
450 455 460

Met Leu Leu
465

<210> 200
<211> 387
<212> PRT
<213> Trichoderma reesei

<400> 200

Met Gly Leu Val Thr Asn Pro Phe Ala Lys Asn Ile Ile Pro Asn Arg
1 5 10 15

```
Tyr Ile Val Val Tyr Asn Asn Ser Phe Gly Glu Glu Ala Ile Ser Ala
            20                  25                  30

Lys Gln Ala Gln Phe Ala Ala Lys Ile Ala Lys Arg Asn Leu Gly Lys
        35                  40                  45

Arg Gly Leu Phe Gly Asn Glu Leu Ser Thr Ala Ile His Ser Phe Ser
    50                  55                  60

Met His Thr Trp Arg Ala Met Ala Leu Asp Ala Asp Asp Ile Met Ile
65                  70                  75                  80

Lys Asp Ile Phe Asp Ala Glu Glu Val Ala Tyr Ile Glu Ala Asp Thr
                85                  90                  95

Lys Val Gln His Ala Ala Leu Val Ala Gln Thr Asn Ala Ala Pro Gly
            100                 105                 110

Leu Ile Arg Leu Ser Asn Lys Ala Val Gly Gly Gln Asn Tyr Ile Phe
        115                 120                 125

Asp Asn Ser Ala Gly Ser Asn Ile Thr Ala Tyr Val Val Asp Thr Gly
    130                 135                 140

Ile Arg Ile Thr His Ser Glu Phe Glu Gly Arg Ala Thr Phe Gly Ala
145                 150                 155                 160

Asn Phe Val Asn Asp Asp Thr Asp Glu Asn Gly His Gly Ser His Val
                165                 170                 175

Ala Gly Thr Ile Gly Gly Ala Thr Phe Gly Val Ala Lys Asn Val Glu
            180                 185                 190

Leu Val Ala Val Lys Val Leu Asp Ala Asp Gly Ser Gly Ser Asn Ser
        195                 200                 205

Gly Val Leu Asn Gly Met Gln Phe Val Val Asn Asp Val Gln Ala Lys
    210                 215                 220

Lys Arg Ser Gly Lys Ala Val Met Asn Met Ser Leu Gly Gly Ser Phe
225                 230                 235                 240

Ser Thr Ala Val Asn Asn Ala Ile Thr Ala Leu Thr Asn Ala Gly Ile
                245                 250                 255

Val Pro Val Val Ala Ala Gly Asn Glu Asn Gln Asp Thr Ala Asn Thr
            260                 265                 270

Ser Pro Gly Ser Ala Pro Gln Ala Ile Thr Val Gly Ala Ile Asp Ala
        275                 280                 285
```

```
Thr Thr Asp Ile Arg Ala Gly Phe Ser Asn Phe Gly Thr Gly Val Asp
    290                 295                 300

Ile Tyr Ala Pro Gly Val Asp Val Leu Ser Val Gly Ile Lys Ser Asp
305                 310                 315                 320

Ile Asp Thr Ala Val Leu Ser Gly Thr Ser Met Ala Ser Pro His Val
                325                 330                 335

Ala Gly Leu Ala Ala Tyr Leu Met Ala Leu Glu Gly Val Ser Asn Val
            340                 345                 350

Asp Asp Val Ser Asn Leu Ile Lys Asn Leu Ala Ala Lys Thr Gly Ala
        355                 360                 365

Ala Val Lys Gln Asn Ile Ala Gly Thr Thr Ser Leu Ile Ala Asn Asn
    370                 375                 380

Gly Asn Phe
385
```

<210> 201
<211> 445
<212> PRT
<213> Trichoderma atroviride

<400> 201

```
Met Ala Pro Phe Asn Thr Met Leu Gly Tyr Leu Leu Leu Ala Val Ala
1               5                   10                  15

Pro Leu Ala Ala Ala Leu Pro Phe His Gly His Gly His Asn Thr Asn
            20                  25                  30

Asn His Asn Leu Asn Leu Asn Phe Asn Leu Thr Glu Thr Ile Asn Glu
        35                  40                  45

Ile Asn Glu Asn Leu Ala Gly Leu Val Gly Tyr Ile Thr Asn Pro His
    50                  55                  60

Ala Lys Asn Val Ile Ala Asn Arg Tyr Ile Val Val Tyr Asn Asn Thr
65                  70                  75                  80

Phe Gly Ser Glu Ala Ile Ala Ala Lys Gln Ala Glu Phe Ala Ala Thr
                85                  90                  95

Ile Gln Lys Arg Asn Leu Gly Lys Arg Ser Leu Gly Gly Asn Leu Leu
            100                 105                 110

Ser Thr Glu Ile His Ser Phe Gln Met His Asn Trp Arg Ala Met Ala
        115                 120                 125
```

```
Leu Asp Ala Asp Asp Glu Met Val Lys Ser Ile Phe Ser Ala Gln Glu
    130                 135                 140

Val Ala Tyr Ile Glu Ala Asp Ala Val Val Gln Thr Lys Gly Ala Leu
145                 150                 155                 160

Val Ala Gln Thr Asn Ala Thr Pro Gly Leu Ile Arg Leu Ser Asn Arg
                165                 170                 175

Asn Ala Gly Gly Lys Asn Tyr Ile Phe Asp Asn Thr Ala Gly Ala Gly
            180                 185                 190

Ile Thr Ala Tyr Val Val Asp Thr Gly Ile Arg Ile Thr His Ser Glu
        195                 200                 205

Phe Glu Gly Arg Ala Ser Phe Gly Ala Asn Phe Val Asn Ser Asn Asn
    210                 215                 220

Thr Asp Glu Asn Gly His Gly Ser His Val Ser Gly Thr Ile Gly Gly
225                 230                 235                 240

Ala Thr Phe Gly Val Ala Lys Asn Val Lys Leu Val Ala Val Lys Val
                245                 250                 255

Leu Asp Ala Thr Gly Ala Gly Ser Asn Ser Gly Val Leu Asn Gly Met
            260                 265                 270

Gln Phe Val Val Asn Asp Val Gln Ala Lys Gly Leu Ser Gly Lys Ala
        275                 280                 285

Val Met Asn Met Ser Leu Gly Gly Ser Leu Ser Ala Ala Val Asn Asn
    290                 295                 300

Ala Ile Ala Ala Ile Ala Asn Ala Gly Val Val Pro Val Val Ala Ala
305                 310                 315                 320

Gly Asn Glu Asn Gln Asp Thr Ala Asn Thr Ser Pro Gly Ser Ala Pro
                325                 330                 335

Gln Ala Ile Thr Val Gly Ala Ile Asp Ala Thr Asn Asp Val Arg Ala
            340                 345                 350

Ser Phe Ser Asn Phe Gly Pro Asp Val Asp Ile Tyr Ala Gln Gly Val
        355                 360                 365

Asn Val Leu Ser Val Gly Ile Lys Ser Asp Thr Asp Thr Ala Val Leu
    370                 375                 380

Ser Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Leu Ala Ala Tyr
385                 390                 395                 400
```

```
Leu Met Ala Leu Lys Gly Leu Thr Asn Val Asp Asp Val Thr Thr Leu
                405                 410                 415


Ile Lys Asn Leu Ala Thr Ala Thr Gly Ala Ser Val Gln Gln Asn Val
            420                 425                 430


Ala Gly Thr Thr Asn Leu Ile Ala Asn Asn Gly Glu Leu
        435                 440                 445


<210>  202
<211>  437
<212>  PRT
<213>  Trichoderma virens

<400>  202

Met Ala Pro Phe Asn Thr Met Leu Ala Tyr Leu Leu Leu Val Val Ala
1               5                   10                  15


Pro Leu Ala Ala Ala Val Pro Phe His Asn Arg His Ser Leu Gly Gly
            20                  25                  30


Pro Gln Thr His Ala His Asn Thr Val Asn Asn Ile Asn Leu Ala His
        35                  40                  45


Leu Met Asn Ile Val Val Asn Pro Thr Ala Lys Asn Ile Ile Pro Gly
    50                  55                  60


Arg Tyr Ile Val Val Tyr Asn Asn Thr Phe Gly Asp Glu Ala Ile Ser
65                  70                  75                  80


Ala Lys Gln Ala Gln Phe Ala Ser Thr Ile Ala Lys Arg Asn Leu Gly
                85                  90                  95


Lys Arg Asn Leu Val Gly Asn Leu Leu Ser Thr Glu Ile His Ser Phe
            100                 105                 110


Lys Met His Thr Trp Arg Ala Met Ala Leu Asp Ala Asp Asp Asp Met
        115                 120                 125


Ile Lys Asn Ile Phe Asp Ala Glu Glu Val Ala Tyr Ile Glu Ala Asp
    130                 135                 140


Thr Lys Val Gln Asn Thr Ala Leu Val Ala Gln Thr Asn Ala Thr Pro
145                 150                 155                 160


Gly Leu Ile Arg Ile Ser Asn Arg Asn Val Gly Ala Ala Asn Tyr Ile
                165                 170                 175


Phe Asp Thr Ser Ala Gly Thr Gly Ile Thr Ala Tyr Val Val Asp Thr
            180                 185                 190
```

```
Gly Ile Arg Val Thr His Thr Glu Phe Glu Gly Arg Ala Thr Phe Gly
        195                 200                 205

Ala Asn Phe Val Asn Thr Asn Asn Thr Asp Glu Asn Gly His Gly Ser
    210                 215                 220

His Val Ala Gly Thr Ile Gly Gly Ala Thr Phe Gly Val Ala Lys Asn
225                 230                 235                 240

Val Lys Leu Val Ala Val Lys Val Leu Asp Ala Ser Gly Ser Gly Ser
                245                 250                 255

Asn Ser Gly Val Leu Asn Gly Met Gln Phe Val Val Asn Asp Val Gln
            260                 265                 270

Ala Lys Lys Leu Gly Gly Lys Ala Val Met Asn Met Ser Leu Gly Gly
        275                 280                 285

Ser Phe Ser Thr Ala Val Asn Asn Ala Ile Thr Ala Leu Ala Asn Ala
    290                 295                 300

Gly Ile Val Pro Val Val Ala Ala Gly Asn Glu Asn Gln Asp Thr Ala
305                 310                 315                 320

Asn Thr Ser Pro Gly Ser Ala Pro Gln Ala Ile Thr Val Gly Ala Ile
                325                 330                 335

Asp Ala Thr Asn Asp Val Arg Ala Ser Phe Ser Asn Phe Gly Ala Gly
            340                 345                 350

Val Asp Ile Tyr Ala Pro Gly Val Asp Val Leu Ser Val Gly Ile Lys
        355                 360                 365

Ser Asp Ile Asp Thr Ala Ile Leu Ser Gly Thr Ser Met Ala Thr Pro
    370                 375                 380

His Val Ala Gly Leu Ala Ala Tyr Leu Met Ala Leu Gln Gly Val Ser
385                 390                 395                 400

Asn Val Asn Asp Val Thr Asn Leu Ile Lys Asn Leu Ala Ala Lys Thr
                405                 410                 415

Gly Ala Asp Val Gln Gln Asn Val Ala Gly Thr Thr Asn Leu Ile Ala
            420                 425                 430

Asn Asn Gly Asn Leu
        435
```

<210> 203
<211> 433
<212> PRT
<213> Hypocrea lixii

<400> 203

```
Met Ala Pro Phe Asn Thr Met Leu Ala Tyr Leu Leu Met Val Val Ala
1               5                  10                  15

Pro Leu Ala Ala Ala Met Pro Phe His Asn Arg His Ser Leu Ser Pro
            20                  25                  30

Gln Thr His Gln His Ser Ala Leu Asn Met Thr His Leu Met Ser Val
        35                  40                  45

Val Ile Asn Pro His Ala Lys Asn Ile Ile Pro Gly Arg Tyr Ile Val
    50                  55                  60

Val Tyr Asn Asn Thr Phe Gly Asp Ala Ala Ile Ser Ala Lys Gln Ala
65                  70                  75                  80

Gln Phe Ala Thr Ala Ile Ala Lys Arg Asn Leu Gly Lys Arg Asp Gly
                85                  90                  95

Leu Gly Asn Leu Leu Ser Thr Glu Ile His Ser Phe Gln Leu His Thr
            100                 105                 110

Trp Arg Ala Met Ala Leu Asp Ala Asp Asn Asp Met Ile Lys Ser Ile
        115                 120                 125

Phe Asp Ala Glu Glu Val Ala Tyr Ile Glu Ala Asp Thr Lys Val Gln
    130                 135                 140

Asn Thr Ala Leu Val Ala Gln Thr Asn Ala Thr Pro Gly Leu Ile Arg
145                 150                 155                 160

Leu Ser Asn Lys Asp Val Gly Gly Gln Asn Tyr Ile Phe Asp Asn Ser
                165                 170                 175

Ala Ala Ser Gly Met Thr Ala Tyr Val Val Asp Thr Gly Ile Arg Val
            180                 185                 190

Thr His Thr Glu Phe Glu Gly Arg Ala Thr Phe Gly Ala Asn Phe Val
        195                 200                 205

Asn Thr Asn Asp Thr Asp Glu Asn Gly His Gly Ser His Val Ala Gly
    210                 215                 220

Thr Ile Gly Gly Ala Thr Phe Gly Val Ala Lys Asn Ile Lys Leu Val
225                 230                 235                 240

Ala Val Lys Val Leu Asp Ala Ser Gly Ser Gly Ser Asn Ser Gly Val
                245                 250                 255

Leu Asn Gly Met Gln Phe Val Ile Asn Asp Val Gln Thr Lys Lys Leu
```

260 265 270

Ala Gly Lys Ala Val Met Asn Met Ser Leu Gly Gly Ser Phe Ser Thr
275 280 285

Ala Val Asn Asn Ala Ile Thr Ala Leu Ala Asn Ala Gly Ile Val Pro
290 295 300

Val Val Ala Ala Gly Asn Glu Asn Gln Asp Thr Ala Asn Thr Ser Pro
305 310 315 320

Gly Ser Ala Pro Gln Ala Ile Thr Val Gly Ala Ile Asp Ala Thr Asn
325 330 335

Asp Val Arg Ala Ser Phe Ser Asn Phe Gly Ala Gly Val Asp Ile Tyr
340 345 350

Ala Pro Gly Val Asn Val Leu Ser Val Gly Ile Lys Ser Asp Ile Asp
355 360 365

Thr Ala Thr Leu Ser Gly Thr Ser Met Ala Thr Pro His Val Ala Gly
370 375 380

Leu Ala Ala Tyr Leu Met Ala Leu Glu Gly Val Thr Asn Val Asp Asp
385 390 395 400

Val Ser Asn Leu Ile Lys Asn Leu Ala Thr Lys Thr Gly Ala Thr Val
405 410 415

Gln Gln Asn Val Ala Gly Thr Thr Asp Leu Ile Ala Asn Asn Ala Asn
420 425 430

Leu

<210> 204
<211> 442
<212> PRT
<213> Fusarium oxysporum

<400> 204

Met Ala Leu Leu Arg Thr Phe Leu Ala Ser Leu Leu Val Ala Ala Pro
1 5 10 15

Phe Ala Ala Ala Ala Pro Ile Asp Val Ala Glu Thr Leu Gly Asp Met
20 25 30

Ala Asp Ser Ile Gly Gly Gly Leu Gly Gly Glu Ala Asp Lys Lys Met
35 40 45

Gly Ile Ser Ala Phe Leu Arg Pro Met Leu Lys Asn Pro Asp Ala Leu
50 55 60

```
Asn Val Ile Pro Asn Arg Tyr Ile Val Val Tyr Asn Asp Thr Phe Asp
65                  70                  75                  80

Asp Asp Thr Ile Ser Ala Lys Glu Ala Ser Phe Ala Ala Ala Ile Lys
                85                  90                  95

Lys Arg Asn Leu Asn Lys Arg Ser Ser Ile Gly Lys Ala Met Ser Thr
            100                 105                 110

Ser Ile Gln Ser Phe Arg Met Asn Lys Trp Arg Ala Met Ser Leu Asp
        115                 120                 125

Ala Asp Asp Leu Met Val Gln Asp Leu Trp Asn Ser Asp Glu Val Ala
    130                 135                 140

Tyr Ile Glu Ala Asp Thr Lys Val Gln Leu Asn Ala Ala Ile Ala Gln
145                 150                 155                 160

Val Asn Ala Pro Pro Gly Leu Asp Arg Leu Ser His Ala Lys Val Asn
                165                 170                 175

Gln Asp Thr Tyr Val Phe Asp Asp Ser Ala Gly Glu Gly Ile Thr Ala
            180                 185                 190

Tyr Val Val Asp Thr Gly Ile Lys Ile Asp His Ser Glu Phe Glu Gly
        195                 200                 205

Arg Ala Thr Phe Gly Ala Asn Phe Ile Asn Asn Val Asp Asp Asp Glu
    210                 215                 220

Asn Gly His Gly Ser His Val Ala Gly Thr Ile Gly Gly Ala Thr Phe
225                 230                 235                 240

Gly Val Ala Lys Lys Val Asp Leu Val Ala Val Lys Val Leu Asp Ala
                245                 250                 255

Ser Gly Gly Gly Ser Asn Ser Gly Val Leu Gln Gly Met Gln Phe Val
            260                 265                 270

Ile Asp Asp Ala Lys Lys Lys Asn Arg Val Gly Lys Ala Val Met Asn
        275                 280                 285

Met Ser Leu Gly Gly Asp Phe Ser Gln Ala Ile Asn Arg Ala Ile Glu
    290                 295                 300

Ala Leu Phe Lys Ala Gly Ile Val Pro Val Val Ala Ala Gly Asn Glu
305                 310                 315                 320

Asn Arg Glu Thr Ala Leu Thr Ser Pro Gly Ser Ala Pro Asn Ala Ile
                325                 330                 335
```

```
Thr Val Gly Ala Ile Asp Ala Thr Thr Asp Glu Arg Ala Asp Phe Ser
            340                 345                 350

Asn Phe Gly Pro Glu Val Asp Val Tyr Ala Pro Gly Val Asn Val Leu
        355                 360                 365

Ser Val Gly Ile Lys Ser Asn Thr Asp Thr Ala Thr Leu Ser Gly Thr
    370                 375                 380

Ser Met Ala Ser Pro His Val Ala Gly Leu Ala Ala Tyr Leu Met Gly
385                 390                 395                 400

Phe Gln Gln Leu Asp Gly Pro Ala Gln Val Ala Ser Leu Ile Lys Ser
                405                 410                 415

Leu Ala Gly Gln Thr Gly Ala Lys Val Gln Asn Asn Val Gln Gly Thr
            420                 425                 430

Thr Asp Ser Ile Ala Asn Asn Gly Asn Gln
        435                 440


<210>  205
<211>  446
<212>  PRT
<213>  Gibberella zeae

<400>  205

Met Ala Phe Leu Lys Thr Phe Leu Ala Ser Leu Leu Ile Ala Ala Pro
1               5                   10                  15

Leu Ala Thr Ala Ala Pro Val Asp Val Ala Gln Thr Ile Gly Asn Met
            20                  25                  30

Ala Glu Ala Val Gly Ser Asp Ile Gly Gly Gly Leu Gly Glu Glu Leu
        35                  40                  45

Asp Lys Lys Met Gly Ile Ser Ala Phe Leu Arg Pro Met Leu Ser Asn
    50                  55                  60

Pro Asp Ser Leu Asn Ile Ile Pro Asn Arg Tyr Ile Val Val Tyr Asn
65                  70                  75                  80

Asp Thr Phe Asp Asp Asp Ala Ile Ala Ala Lys Glu Phe Ser Ile Ala
                85                  90                  95

Ser Ala Ile Lys Lys Arg Asn Leu Asn Lys Arg Ser Ser Ile Gly Gln
            100                 105                 110

Ala Met Ser Thr Ser Ile Lys Ser Phe Arg Met Asn Thr Trp Arg Ala
        115                 120                 125
```

```
Met Ser Leu Asp Ala Asp Asp Met Met Val Gln Asp Leu Phe Lys Ser
    130                 135                 140

Asp Glu Val Ala Tyr Ile Glu Ala Asp Thr Arg Val Gln Leu Asn Ala
145                 150                 155                 160

Ala Ile Ala Gln Val Asn Ala Pro Pro Gly Leu Asn Arg Leu Ser His
                165                 170                 175

Ala Gln Ala Asp Gln Glu Asn Tyr Ile Phe Asp Asp Ser Ala Gly Glu
            180                 185                 190

Gly Ile Thr Ala Tyr Val Val Asp Thr Gly Ile Lys Val Asp His Ser
        195                 200                 205

Glu Phe Glu Gly Arg Ala Thr Phe Gly Gly Asn Phe Ile Asp Asn Val
    210                 215                 220

Asp Asp Asp Glu Asn Gly His Gly Ser His Val Ala Gly Thr Ile Gly
225                 230                 235                 240

Gly Ala Thr Phe Gly Val Ala Lys Lys Val Asp Leu Val Ala Val Lys
                245                 250                 255

Val Leu Asp Ala Ser Gly Gly Gly Ser Asn Ser Gly Val Leu Gln Gly
            260                 265                 270

Met Gln Phe Val Val Asp Asp Val Lys Lys Asn Asn Arg Ala Gly Lys
        275                 280                 285

Ala Val Met Asn Met Ser Leu Gly Gly Asp Lys Ser Glu Ala Ile Asn
    290                 295                 300

Arg Ala Ile Glu Ala Leu Phe Lys Ala Gly Val Val Pro Val Val Ala
305                 310                 315                 320

Ala Gly Asn Glu Asn Arg Glu Thr Ala Leu Thr Ser Pro Gly Ser Ala
                325                 330                 335

Pro Asn Ala Ile Thr Val Gly Ala Ile Asp Ala Thr Ser Asp Gln Arg
            340                 345                 350

Ala Asp Phe Ser Asn Phe Gly Pro Glu Val Asp Ile Tyr Ala Pro Gly
        355                 360                 365

Val Asp Val Leu Ser Val Gly Ile Lys Ser Asn Thr Asp Thr Ala Thr
    370                 375                 380

Leu Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly Leu Ala Ala
385                 390                 395                 400
```

```
Tyr Leu Met Gly Phe Gln Lys Leu Asp Gly Pro Ala Gln Val Ala Ser
                405                 410                 415


Leu Ile Lys Ser Leu Ala Ala Glu Ser Gly Ala Lys Val Arg Asn Asn
            420                 425                 430


Val Arg Gly Thr Thr Asp Gly Ile Ala Asn Asn Gly Asn Gln
        435                 440                 445


<210>  206
<211>  423
<212>  PRT
<213>  Glomerella graminicola

<400>  206

Met Val Arg Pro Ile Ala Ile Leu Ala Ala Val Leu Pro Ala Val Leu
1               5                   10                  15


Ala Ala Pro Phe Gly Leu Asn Glu Asn Lys Ala Ala Asn Asn Thr Asp
            20                  25                  30


Thr Phe Met Gly Val Pro Ile Ser Asn Leu Asn Ala Leu Asp Leu Ile
        35                  40                  45


Pro Asn Lys Tyr Ile Val Val Tyr Asn Asn Ser Phe Asp Asp Asp Ala
    50                  55                  60


Ile Thr Ser Lys Met Ser Ser Phe Ala Ala Ala Ile Lys Lys Arg Asn
65                  70                  75                  80


Ile Gly Lys Arg Ser Leu Asp Gly Arg Ser Leu Ser Thr Ser Thr Arg
                85                  90                  95


Asn Phe Lys Met Asn Asn Trp Arg Ala Thr Val Met Glu Ala Asp Asp
            100                 105                 110


Asn Met Ile Met Asn Val Met Ser Ala Glu Glu Val Ala Tyr Val Glu
        115                 120                 125


Gln Asp Ala Lys Val Lys Ile Ser Ala Thr Val Ser Gln Thr Asn Ala
    130                 135                 140


Pro Pro Gly Leu Val Arg Leu Ser His Ala Ala Ala Gly Glu Thr Gly
145                 150                 155                 160


Tyr Val Phe Asp Gln Val Ser Gly Asp Gly Ile Thr Ala Tyr Val Val
                165                 170                 175


Asp Thr Gly Ile Leu Thr Thr His Ser Glu Phe Gln Gly Arg Ala Thr
            180                 185                 190
```

```
Phe Gly Ala Asn Phe Ile Asn Asn Val Asp Thr Asp Glu Asn Gly His
        195                 200                 205

Gly Ser His Val Ala Gly Thr Ile Gly Gly Gln Thr Phe Gly Val Ala
    210                 215                 220

Lys Asn Val Lys Leu Val Ala Val Lys Val Leu Asp Gly Asp Gly Ala
225                 230                 235                 240

Gly Ser Asn Ser Gly Val Leu Asp Gly Met Gln Phe Val Ile Asp Asp
                245                 250                 255

Val Lys Ala Lys Asn Ile Thr Gly Lys Ala Val Met Asn Met Ser Leu
            260                 265                 270

Gly Gly Ser Ala Ser Ala Ala Val Asn Arg Ala Ile Glu Ala Leu Asn
        275                 280                 285

Thr Ala Gly Ile Val Pro Val Val Ala Ala Gly Asn Glu Asn Gln Asp
    290                 295                 300

Ala Ala Asn Thr Ser Pro Ala Ser Ala Pro Asn Ala Ile Thr Val Gly
305                 310                 315                 320

Ala Ile Asp Ala Arg Asn Asp Arg Lys Ala Ser Phe Ser Asn Phe Gly
                325                 330                 335

Lys Val Val Asp Ile Phe Ala Pro Gly Val Asn Ile Leu Ser Val Gly
            340                 345                 350

Ile Ala Ser Asn Thr Ala Thr Asn Thr Leu Ser Gly Thr Ser Met Ala
        355                 360                 365

Ser Pro His Val Ala Gly Leu Ala Ala Tyr Leu Met Gly Leu Glu Gly
    370                 375                 380

Leu Asn Thr Val Lys Ser Leu Thr Asp Arg Met Leu Gln Leu Ala Thr
385                 390                 395                 400

Ala Ser Gly Ala Ser Val Gln Arg Asn Thr Ala Gly Thr Thr Asn Leu
                405                 410                 415

Ile Ala Asn Asn Gly Gln Leu
            420
```

<210> 207
<211> 387
<212> PRT
<213> Nectria haematococca

<400> 207

```
Met Val Ser Asn Pro Glu Ala Gln Asn Ile Ile Pro Asn Lys Tyr Ile
```

```
1               5                  10                  15

Val Val Phe Asn Asn Asp Asp Phe Asp Asp Asp Ala Ile Ser Ala Lys
            20                  25                  30

Glu Ala Ser Phe Ala Met Ala Ile Lys Lys Arg Asn Leu Asn Lys Arg
        35                  40                  45

Gly Leu Asn Gly Leu Asn Leu Ser Thr Thr Ile Asn Ser Phe Lys Met
    50                  55                  60

Asn Lys Trp Arg Ala Met Ser Leu Asp Ala Asp Asp Leu Met Ile Lys
65                  70                  75                  80

Asp Leu Tyr Asp Ala Asp Glu Val Ala Tyr Ile Glu Ala Asp Thr His
                85                  90                  95

Val Gln Leu Asn Gly Ala Ile Ala Gln Val Asn Ala Pro Pro Gly Leu
            100                 105                 110

Asp Arg Leu Ser His Ala Gln Pro Asn Glu Asp Thr Tyr Val Phe Asp
        115                 120                 125

Asp Ser Ala Gly Glu Gly Ile Val Ala Tyr Val Val Asp Thr Gly Ile
    130                 135                 140

Lys Thr Thr His Thr Glu Phe Glu Gly Arg Ala Thr Phe Gly Gly Asn
145                 150                 155                 160

Phe Ile Asn Asn Val Asp Asp Asp Glu Asn Gly His Gly Ser His Val
                165                 170                 175

Ala Gly Thr Ile Ala Gly Ala Thr Phe Gly Val Ala Lys Lys Ala Glu
            180                 185                 190

Leu Val Ala Val Lys Val Leu Asp Val Ser Gly Gly Gly Ser Asn Ser
        195                 200                 205

Gly Val Leu Gln Gly Met Gln Phe Val Ile Asp Asp Val Glu Lys Arg
    210                 215                 220

Gly Lys Lys Gly Lys Ala Val Met Asn Met Ser Leu Gly Gly Asp Phe
225                 230                 235                 240

Ser Glu Ala Ile Asn Arg Ala Ile Glu Ala Leu Phe Lys Ala Gly Ile
                245                 250                 255

Val Pro Val Val Ala Ala Gly Asn Glu Asn Val Asn Thr Ala Leu Thr
            260                 265                 270

Ser Pro Gly Ser Ala Pro Asn Ala Ile Thr Val Gly Ala Ile Asp Gly
```

275 280 285

Thr Thr Asp Val Arg Ala Pro Phe Ser Asn Phe Gly Pro Asp Val Asp
290 295 300

Ile Tyr Ala Pro Gly Val Gln Val Leu Ser Val Gly Ile Asp Ser Asn
305 310 315 320

Thr Ala Thr Ala Ser Leu Ser Gly Thr Ser Met Ala Ser Pro His Val
325 330 335

Ala Gly Leu Ala Ala Tyr Leu Met Ala Phe Gln Asn Val Gln Glu Pro
340 345 350

Ser Arg Val Val Glu Leu Ile Lys Ser Leu Ala Gln Gln Ser Gly Ala
355 360 365

Lys Val Arg Asn Asn Ala Ala Asp Thr Thr Asp Leu Ile Ala Asn Asn
370 375 380

Gly Asn Gln
385

<210> 208
<211> 425
<212> PRT
<213> Cordyceps militaris

<400> 208

Met Thr Gln Leu His Tyr Arg Phe Thr Ser Leu Leu Leu Leu Leu Gly
1 5 10 15

Leu Ala Ile Ala Ala Pro Gly Arg Ile Ala Asn Pro Pro Glu Ser Thr
20 25 30

Ala Phe Arg Leu Pro Val Ser Asn Ala Asn Val Ala Val Thr Asn Met
35 40 45

Ile Pro Asn Arg Tyr Ile Val Val Tyr Asn Lys Asp Phe Asn Ser Thr
50 55 60

Ser Ile Asp Ala Lys Glu Ala Ser Phe Ala Ala Ala Leu Arg Lys Arg
65 70 75 80

Asn Leu Gly Lys Arg Gly Leu Gly Gly Asn Pro Leu Ser Thr Glu Val
85 90 95

Asn Ser Leu Ser Met Asn Lys Trp Arg Ala Ser Ile Leu Asp Ala Asp
100 105 110

Asp Asp Met Phe Met Glu Met Tyr Asn Ser Glu Glu Val Ser Tyr Ile
115 120 125

```
Glu Ala Asp Thr Arg Val His Thr Gln Val Val Ile Ser Gln Ile Asn
    130                 135                 140

Ala Pro Pro Gly Leu Ala Arg Leu Ser His Ala Thr Asn Gly Pro Ser
145                 150                 155                 160

Asn Tyr Leu Phe Asp Glu Ser Ala Gly Gln Gly Val Thr Val Tyr Ile
                165                 170                 175

Val Asp Thr Gly Ile Leu Pro Ser His Val Glu Phe Glu Gly Arg Ala
            180                 185                 190

Arg Ser Ala Ala Asn Phe Val Asn Gln Val Asp Thr Asp Glu Asn Gly
        195                 200                 205

His Gly Ser His Val Ala Gly Thr Ile Gly Gly Ala Thr Tyr Gly Val
    210                 215                 220

Ala Lys Arg Cys Glu Leu Leu Gly Val Lys Val Leu Asp Ala Ser Gly
225                 230                 235                 240

Gly Gly Ala Asn Ser Gly Val Leu Lys Gly Leu Gln Phe Val Met Asn
                245                 250                 255

Asp Val Ala Glu Arg Asn Val Ser Lys Ala Val Met Asn Met Ser Leu
            260                 265                 270

Gly Gly Pro Arg Ser Arg Ala Ile Asn Thr Ala Ile Ser Gln Leu Ala
        275                 280                 285

Gln Ala Gly Val Ile Pro Val Val Ala Ala Gly Asn Glu Asp Gln Asp
    290                 295                 300

Ala Ser Thr Thr Ser Pro Ala Ser Ala Pro Asp Ala Ile Thr Val Gly
305                 310                 315                 320

Ala Ile Asp Val Arg Asn Asp Ala Lys Ala Ser Phe Ser Asn Phe Gly
                325                 330                 335

Ser Ser Val Ala Ile Phe Ala Pro Gly Val Asn Ile Leu Ser Val Gly
            340                 345                 350

Ile Ala Ser Asn Thr Asp Ser Lys Val Leu Ser Gly Thr Ser Met Ala
        355                 360                 365

Ser Pro His Val Ala Gly Leu Ala Ala Tyr Leu Met Gly Leu Arg Gly
    370                 375                 380

Leu Asp Glu Gln Gln Pro Ser Gln Val Glu Asp Leu Met Lys Asn Leu
385                 390                 395                 400
```

```
Ala Gly Gln Thr Gly Ala Arg Val Arg Gly Asn Glu Gln Gly Thr Thr
                405                 410                 415


Asn Arg Ile Ala Asn Asn Gly Ser Arg
            420                 425


<210>  209
<211>  433
<212>  PRT
<213>  Neurospora crassa

<400>  209

Met Val Arg Phe Ser Val Ala Ala Ala Phe Leu Leu Ser Ala Leu Gly
1               5                   10                  15


Val Thr Ala Ala Pro Ser Gly Gly Arg His Asn His Gln Asn Thr Gln
            20                  25                  30


Asn Thr Gly Ala Thr Ala Gly Asn Ala Ala Gly Val Pro Val Ala Asn
        35                  40                  45


Ser Asp Ile Ser Asn Ile Ile Pro Gly Arg Tyr Ile Val Val Tyr Asn
    50                  55                  60


Asn Thr Phe Gly Glu Glu Ala Ile Asn Ala His Gln Ile Lys Val Thr
65                  70                  75                  80


Ser Leu Val Ala Lys Arg Asn Leu Gly Lys Arg Asp Ala Lys Thr Gly
                85                  90                  95


Arg Ile Met Ser Pro Ser Val Lys Ala Phe Lys Met Gly Thr Trp Arg
            100                 105                 110


Ala Met Ala Leu Asp Ala Asp Asp Asp Met Ile Asn Asp Ile Asn Ser
        115                 120                 125


Ala Gln Glu Val Glu Tyr Ile Glu Ala Asp Gln Tyr Val Lys Leu Asn
    130                 135                 140


Ala Leu Thr Ser Gln Asn Ser Thr Thr Thr Gly Leu Ala Arg Leu Ser
145                 150                 155                 160


His Ala Gly Pro Ser Lys Lys Ala Ala Pro Tyr Ile Phe Asp Ser Ser
                165                 170                 175


Ala Gly Glu Gly Ile Thr Ala Phe Val Val Asp Thr Gly Ile Arg Val
            180                 185                 190


Thr His Ser Glu Tyr Glu Gly Arg Ala Thr Phe Ala Ala Asn Phe Val
        195                 200                 205
```

```
Asn Asn Val Asp Thr Asp Glu Asn Gly His Gly Ser His Val Ala Gly
    210                 215                 220

Thr Ile Ala Gly Ala Thr Phe Gly Val Ala Lys Lys Ala Lys Leu Val
225                 230                 235                 240

Ala Val Lys Val Leu Asp Gly Ser Gly Ser Gly Ser Asn Ser Gly Val
                245                 250                 255

Leu Gln Gly Met Gln Phe Val Ala Asp Thr Ala Thr Ser Gln Lys Leu
            260                 265                 270

Gly Gly Lys Ala Val Leu Asn Met Ser Leu Gly Gly Gly Lys Ser Arg
        275                 280                 285

Ala Ile Asn Ser Ala Ile Asn Gln Ile Ala Ala Ala Gly Val Val Pro
    290                 295                 300

Val Val Ala Ala Gly Asn Glu Asn Gln Asp Thr Ala Asn Thr Ser Pro
305                 310                 315                 320

Gly Ser Ala Pro Ala Ala Ile Thr Val Gly Ala Ile Asp Gln Arg Thr
                325                 330                 335

Asp Ala Arg Ala Ser Phe Ser Asn Phe Gly Ala Gly Val Asp Ile Phe
            340                 345                 350

Ala Pro Gly Val Asn Val Leu Ser Val Gly Ile Lys Ser Asp Thr Asp
        355                 360                 365

Thr Asp Thr Leu Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly
    370                 375                 380

Leu Ala Ala Tyr Leu Met Ala Leu Glu Gly Leu Thr Asp Val Thr Ala
385                 390                 395                 400

Val Gly Asn Arg Ile Lys Glu Leu Ala Gln Lys Thr Gly Ala Lys Val
                405                 410                 415

Thr Asn Asn Val Arg Gly Thr Thr Ser Leu Ile Ala Asn Asn Gly Asn
            420                 425                 430

Leu
```

<210> 210
<211> 433
<212> PRT
<213> Neurospora tetrasperma

<400> 210

```
Met Val Arg Phe Ser Val Ala Ala Ala Phe Leu Leu Ser Ala Leu Gly
1               5                  10                  15

Val Thr Ala Ala Pro Ser Gly Gly Arg His Asn His Gln Asn Thr Gln
            20                  25                  30

Asn Thr Gly Ala Thr Ala Gly Asn Ala Ala Gly Val Pro Val Ser Asn
        35                  40                  45

Ser Asp Ile Ser Asn Ile Ile Pro Gly Arg Tyr Ile Val Val Tyr Asn
    50                  55                  60

Asn Thr Phe Gly Glu Glu Ala Ile Ser Ala His Gln Ile Lys Val Thr
65                  70                  75                  80

Ser Leu Val Ala Lys Arg Asn Leu Gly Lys Arg Asp Ala Lys Thr Gly
                85                  90                  95

Arg Ile Met Ser Pro Ser Val Lys Ala Phe Lys Met Gly Thr Trp Arg
            100                 105                 110

Ala Met Ala Leu Asp Ala Asp Asp Asp Met Ile Asn Asp Ile Asn Ser
        115                 120                 125

Ala Gln Glu Val Glu Tyr Ile Glu Ala Asp Gln Tyr Val Lys Leu Asn
    130                 135                 140

Ala Leu Thr Ser Gln Asn Ser Thr Thr Thr Gly Leu Ala Arg Leu Ser
145                 150                 155                 160

His Ala Gly Pro Ser Lys Gln Ala Ala Pro Tyr Ile Phe Asp Ser Ser
                165                 170                 175

Ala Gly Glu Gly Ile Thr Ala Phe Val Val Asp Thr Gly Ile Arg Val
            180                 185                 190

Thr His Ser Glu Tyr Glu Gly Arg Ala Thr Phe Ala Ala Asn Phe Val
        195                 200                 205

Asn Asn Val Asp Thr Asp Glu Asn Gly His Gly Ser His Val Ala Gly
    210                 215                 220

Thr Ile Ala Gly Ala Thr Phe Gly Val Ala Lys Lys Ala Lys Leu Val
225                 230                 235                 240

Ala Val Lys Val Leu Asp Gly Ser Gly Ser Gly Ser Asn Ser Gly Val
                245                 250                 255

Leu Gln Gly Met Gln Phe Val Ala Asp Thr Ala Thr Ser Gln Lys Leu
            260                 265                 270
```

```
Gly Gly Lys Ala Val Leu Asn Met Ser Leu Gly Gly Gly Lys Ser Arg
        275                 280                 285

Ala Ile Asn Ser Ala Ile Asn Gln Ile Ala Ala Ala Gly Val Val Pro
    290                 295                 300

Val Val Ala Ala Gly Asn Glu Asn Gln Asp Thr Ala Asn Thr Ser Pro
305                 310                 315                 320

Gly Ser Ala Pro Ala Ala Ile Thr Val Gly Ala Ile Asp Gln Arg Thr
                325                 330                 335

Asp Ala Arg Ala Ser Phe Ser Asn Phe Gly Ala Gly Val Asp Ile Phe
            340                 345                 350

Ala Pro Gly Val Asn Val Leu Ser Val Gly Ile Thr Ser Asp Thr Ala
        355                 360                 365

Thr Asp Thr Leu Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly
    370                 375                 380

Leu Ala Ala Tyr Leu Met Ala Leu Glu Gly Leu Thr Asp Val Thr Ala
385                 390                 395                 400

Val Gly Asn Arg Ile Lys Glu Leu Ala Gln Lys Thr Gly Ala Lys Val
                405                 410                 415

Thr Asn Asn Val Arg Gly Thr Thr Ser Leu Ile Ala Asn Asn Gly Asn
            420                 425                 430

Leu
```

<210> 211
<211> 411
<212> PRT
<213> Verticillium dahliae

<400> 211

```
Met Ala Pro Ile Ser Lys Glu Val Pro Ala Gly Ala Ile Thr Gly Ala
1               5                   10                  15

Ala Asp Phe Phe Ala Lys Gly Phe Ser Ala Met Leu Asn Ser Glu Ser
            20                  25                  30

Thr Glu Arg Val Ser Asn Ser Tyr Ile Val Val Tyr Asn Asn Thr Phe
        35                  40                  45

Asp Asp Asp Thr Ile Asn Phe Arg Gln Thr Glu Val Met Asn His Ile
    50                  55                  60

Lys Arg Arg Asn Ile Gly Lys Arg Gly Leu Asp Gly Arg Gln Leu Ser
```

65 70 75 80

Thr Glu Val His Ala Leu Ala Met Asn Gly Trp Arg Ala Met Thr Leu
85 90 95

Glu Ser Asp Asp Asp Met Ile Leu Gln Ile Met Asn Glu Pro Glu Val
100 105 110

Ala Trp Val Glu Ala Asn Ala Arg Val Lys Leu Ser Ala Ser Val Ala
115 120 125

Gln Met Asn Ala Pro Pro Gly Leu Asn Arg Leu Ser Asn Ala Gln Ala
130 135 140

Gly Thr Gly Asn Tyr Val Phe Asp Thr Thr Gly Gly Glu Gly Val Thr
145 150 155 160

Val Tyr Val Val Asp Thr Gly Ile Arg Thr Asp His Ser Glu Phe Gln
165 170 175

Gly Arg Ala Thr Phe Gly Val Asn Thr Val Asp Asn Val Asp Asn Asp
180 185 190

Gln Asn Gly His Gly Ser His Val Ala Gly Thr Ile Cys Gly Gln Thr
195 200 205

Phe Gly Val Ala Lys Ser Ala Asn Val Val Ala Val Lys Val Leu Asp
210 215 220

Gly Thr Gly Ala Gly Ser Asn Ala Gly Val Leu Asp Gly Leu Gln Phe
225 230 235 240

Ile Ile Asn Asp Val Gln Gln Lys Asn Leu Arg Gly Lys Ala Val Met
245 250 255

Asn Met Ser Leu Gly Gly Pro Gln Ser Ala Ala Val Asn Arg Ala Val
260 265 270

Gln Ala Leu Phe Asp Ala Gly Val Val Pro Val Val Ala Ala Gly Asn
275 280 285

Glu Asn Gln Asp Ala Ala Asn Thr Ser Pro Ala Ser Ala Pro Lys Ala
290 295 300

Ile Thr Val Gly Ala Ile Asp Ala Ser Asn Asp Gln Lys Ala Ser Phe
305 310 315 320

Ser Asn Phe Gly Ala Asp Val Asp Ile Phe Ala Pro Gly Val Asp Val
325 330 335

Leu Ser Val Gly Ile Arg Ser Asn Thr Ala Thr Asp Thr Leu Ser Gly

340 345 350

Thr Ser Met Ala Ser Pro His Val Ala Gly Leu Ala Ala Tyr Leu Ile
355 360 365

Ala Leu Glu Asn Ile Asn Thr Pro Glu Ala Val Ala Ser Arg Leu Thr
370 375 380

Glu Leu Ala Thr Ala Ser Gly Ala Gln Val Leu Arg Asn Thr Pro Gly
385 390 395 400

Thr Thr Asn Leu Ile Ala Asn Asn Gly Gln Leu
405 410

<210> 212
<211> 424
<212> PRT
<213> Thielavia terrestris

<400> 212

Met Ala Gly Arg Leu Leu Ala Ala Leu Thr Phe Ala Leu Ala Ala Leu
1 5 10 15

Gly Ala Ser Gly Leu Pro Gln Pro Ser Lys Ala Glu Gly Phe Phe Leu
20 25 30

Gly Val Pro Ile Ser Asn Pro Glu Ala Lys Asn Ala Ile Pro His Lys
35 40 45

Tyr Ile Val Val Tyr Asn Ser Thr Phe Ser Asp Ala Glu Ile Gln Ala
50 55 60

His Gln Asp Ser Ile Ile Lys Thr Ile Ser Lys Arg Asn Val Gly Lys
65 70 75 80

Arg Ser Pro Leu Thr Gly Lys Val Leu Ser Pro His Val Ser Thr Phe
85 90 95

Ser Met Gly Thr Trp Arg Ala Met Ala Leu Glu Ala Asp Asp Leu Met
100 105 110

Met Asn Glu Ile Phe Ala Ala Lys Glu Val Asp Tyr Ile Glu Gln Asp
115 120 125

Ala Tyr Val Ser Ile Ala Ala Gln Gln Val Gln Ser Gln Ala Thr Ser
130 135 140

Gly Leu Ala Arg Ile Ser His Ala Lys Pro Gly Ala Thr Thr Tyr Val
145 150 155 160

Phe Asp Ser Ser Ala Gly Gln Gly Met Thr Ala Tyr Val Val Asp Thr
165 170 175

```
Gly Ile Leu Val Thr His Ser Glu Phe Glu Gly Arg Ala Thr Phe Ala
            180                 185                 190

Ala Asn Phe Val Gly Asp Asn Gln Asp Thr Asp Leu Asn Gly His Gly
        195                 200                 205

Ser His Val Ala Gly Thr Ile Gly Gly Lys Thr Phe Gly Val Ala Lys
    210                 215                 220

Lys Val Asn Leu Val Ala Val Lys Val Leu Asp Ala Asn Gly Ser Gly
225                 230                 235                 240

Thr Asn Ser Gly Val Ile Ala Gly Met Gln Phe Val Ala Gln Asn Ala
                245                 250                 255

Thr Gly Ser Gly Leu Ser Gly Lys Ala Val Met Asn Met Ser Val Gly
            260                 265                 270

Gly Ser Phe Ser Arg Ala Val Asn Ser Ala Ile Asn Gln Val Ala Ala
        275                 280                 285

Ala Gly Val Val Pro Val Val Ala Ala Gly Asn Glu Asn Gln Asn Ala
    290                 295                 300

Ala Asn Thr Ser Pro Ala Ser Ala Thr Ala Ala Ile Thr Val Gly Ala
305                 310                 315                 320

Ile Asp Gln Thr Asp Asp Thr Arg Ala Ser Phe Ser Asn Phe Gly Arg
                325                 330                 335

Val Val Asp Val Phe Ala Pro Gly Val Asn Val Leu Ser Val Gly Ile
            340                 345                 350

Arg Ser Asn Thr Asp Thr Gln Val Leu Ser Gly Thr Ser Met Ala Thr
        355                 360                 365

Pro His Val Ala Gly Leu Ala Ala Tyr Leu Met Ala Leu Glu Gly Ile
    370                 375                 380

Thr Gly Gly Ala Gln Ala Val Ser Asp Arg Ile Lys Gln Leu Ala Gln
385                 390                 395                 400

Ala Thr Gly Ala Thr Val Gly Asn Asp Val Arg Gly Thr Thr Thr Leu
                405                 410                 415

Ile Ala Asn Asn Gly Asn Arg Asn
            420
```

<210> 213
<211> 511

<212> PRT
<213> Magnaporthe oryzae

<400> 213

```
Met Ala Pro Ile Ser Ser Ile Leu Ala Pro Phe Ala Ala Leu Ala Gly
1               5                  10                  15

Leu Val Ala Ala Leu Pro Ser Asn Phe Pro Gly Ser Glu Lys Phe Ala
            20                  25                  30

Gly Val Pro Val Ser Asn Ile Asn Ala Leu Asn Val Ile Pro Gln Ser
        35                  40                  45

Tyr Ile Val Val Tyr Asn Ser Thr Phe Asp Ser Lys Ile Ile Asp Asp
    50                  55                  60

Ser Gln Ala Met Ala Met Ala Lys Val Ala Glu Arg Asn Leu Gly Lys
65                  70                  75                  80

Arg Ser Glu Asp Gly Arg Asp Met Ser Thr Thr Ala Thr Thr Cys Gln
                85                  90                  95

Ile Gly Thr Trp Arg Gly Leu Met Leu Asp Ala Asp Asp Gln Thr Ile
            100                 105                 110

Met Glu Ile Met Ala Asp Pro Ala Val Arg Tyr Val Glu Ala Asp Ala
        115                 120                 125

Ala Met Asn Ile Leu Ile Asp Glu Glu Ala Ser Glu Met Pro Pro Pro
    130                 135                 140

Ala Glu Ile Thr Glu Met Gln Ala Ile Ala Arg Arg Ala Glu Gln Thr
145                 150                 155                 160

Glu Thr Gly Ala Pro Asn Gly Leu Ala Arg Leu Ser Gln Ser Glu Pro
                165                 170                 175

Asn Pro Gly Thr Ser Gly Thr Tyr Arg Phe Glu Asp Ser Ala Gly Glu
            180                 185                 190

Gly Ile Thr Val Tyr Ile Val Asp Thr Gly Ile Arg Ala Thr His Thr
        195                 200                 205

Glu Phe Glu Asp Arg Ala Thr Phe Gly Ala Asn Phe Ile Asp Gln Val
    210                 215                 220

Asp Thr Asp Gln Asn Gly His Gly Ser His Cys Ala Gly Thr Ile Gly
225                 230                 235                 240

Gly Lys Thr Phe Gly Val Ala Lys Lys Ala Thr Leu Val Gly Val Lys
                245                 250                 255
```

```
Val Leu Gly Ala Ser Gly Gly Gly Ser Asn Arg Gly Val Ile Gln Gly
            260                 265                 270

Met Gln Phe Val Ala Asn Asp Val Thr Gln Lys Asn Leu Ala Arg Lys
        275                 280                 285

Ala Val Met Asn Met Ser Leu Gly Gly Ser Lys Ser Thr Ala Val Asn
    290                 295                 300

Glu Ala Ile Asn Ser Met Ile Lys Ala Gly Val Val Ala Val Val Ala
305                 310                 315                 320

Ala Gly Asn Glu Asn Asp Asp Ala Ser Lys Ser Ser Pro Ala Ser Ala
                325                 330                 335

Pro Gly Ala Ile Thr Val Gly Ala Ile Asp Gln Lys Asn Asp Arg Lys
            340                 345                 350

Ala Ser Phe Ser Asn Phe Gly Thr Asp Val Asp Ile Phe Ala Pro Gly
        355                 360                 365

Val Asn Val Leu Ser Val Asp Ala Lys Ser Asp Thr Gly Ser Lys Thr
    370                 375                 380

Leu Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly Leu Ala Ala
385                 390                 395                 400

Tyr Leu Met Ala Leu Asp Pro Thr Leu Thr Ala Gly Gly Gly Ile Glu
                405                 410                 415

Thr Val Ala Gly Lys Val Asp Ala Arg Ile Lys Glu Leu Ala Lys Ala
            420                 425                 430

Met Gly Ala Gln Val Gly Gln Ala Pro Ala Gly Thr Thr Thr Leu Ile
        435                 440                 445

Ala Asn Asn Gly Lys Thr Gly Asn Gly Ala Gly Asn Gly Thr Ala Ala
    450                 455                 460

Ala Ala Pro Ala Asp Asn Ala Asp Ala Ala Pro Ala Thr Gly Ala Thr
465                 470                 475                 480

Arg Arg Leu Arg Lys Ala Gln Arg Leu Thr Phe Gln Arg Met Gln Gln
                485                 490                 495

Phe Gln Arg Gln Gln Ile Gln Arg Gln Gln Ser Gln Arg Gln Gln
            500                 505                 510
```

<210> 214
<211> 409
<212> PRT

<213> Trichoderma reesei

<400> 214

```
Met Ala Ser Leu Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1               5                  10                  15

Ala Val Leu Ala Ala Pro Ala Val Asn Tyr Lys Leu Pro Glu Ala Val
            20                  25                  30

Pro Asn Lys Phe Ile Val Thr Leu Lys Asp Gly Ala Ser Val Asp Thr
        35                  40                  45

Asp Ser His Leu Thr Trp Val Lys Asp Leu His Arg Arg Ser Leu Gly
    50                  55                  60

Lys Arg Ser Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile Asp Ser Trp
65                  70                  75                  80

Asn Ala Tyr Ala Gly Glu Phe Asp Glu Glu Thr Val Lys Gln Ile Lys
                85                  90                  95

Ala Asn Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met Trp Leu
            100                 105                 110

Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Thr Gly Ala
        115                 120                 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Pro Gly Ser Thr Ser
    130                 135                 140

Tyr Ile Tyr Asp Thr Ser Ala Gly Ser Gly Thr Phe Ala Tyr Val Val
145                 150                 155                 160

Asp Ser Gly Ile Asn Ile Ala His Gln Gln Phe Gly Gly Arg Ala Ser
                165                 170                 175

Leu Gly Tyr Asn Ala Ala Gly Gly Asp His Val Asp Thr Leu Gly His
            180                 185                 190

Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
        195                 200                 205

Lys Gln Ala Ser Leu Ile Ser Val Lys Val Phe Gln Gly Asn Ser Ala
    210                 215                 220

Ser Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225                 230                 235                 240

Val Ser Arg Asn Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
                245                 250                 255
```

```
Gly Pro Ala Ser Ser Thr Trp Ala Thr Ala Ile Asn Ala Ala Phe Asn
            260                 265                 270

Lys Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ala Leu Gly
        275                 280                 285

Asn Pro Gln Pro Val Ser Ser Thr Ser Pro Ala Asn Val Pro Asn Ala
    290                 295                 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305                 310                 315                 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
                325                 330                 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
            340                 345                 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ala
        355                 360                 365

Leu Glu Gly Leu Ser Thr Pro Thr Ala Val Thr Asn Arg Ile Lys Ala
    370                 375                 380

Leu Ala Thr Thr Gly Arg Val Thr Gly Ser Leu Asn Gly Ser Pro Asn
385                 390                 395                 400

Thr Leu Ile Phe Asn Gly Asn Ser Ala
                405
```

<210> 215
<211> 409
<212> PRT
<213> Trichoderma atroviride

<400> 215

```
Met Thr Ser Ile Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1               5                   10                  15

Ala Val Leu Ala Ala Pro Ala Ala Leu His Lys Lys Pro Glu Ala Val
            20                  25                  30

Pro Asn Lys Phe Ile Val Thr Leu Lys Glu Gly Ala Ser Ile Asp Thr
        35                  40                  45

Asp Ser His Leu Ala Trp Val Thr Asp Ile His Thr Arg Ser Leu Thr
    50                  55                  60

Lys Arg Ser Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile His Thr Trp
65                  70                  75                  80

Asn Ala Tyr Ala Gly Glu Phe Asp Glu Glu Thr Ile Glu Gln Ile Lys
```

85 90 95

Ser Asn Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met His Leu
100 105 110

Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Ser Gly Ala
115 120 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Ser Gly Ser Thr Ser
130 135 140

Tyr Ile Tyr Asp Ser Ser Ala Gly Ala Gly Thr Phe Ala Tyr Val Val
145 150 155 160

Asp Ser Gly Ile Asn Thr Ser His Gln Gln Phe Gly Gly Arg Ala Ser
165 170 175

Leu Gly Tyr Asn Ala Ala Gly Gly Gln His Val Asp Thr Leu Gly His
180 185 190

Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
195 200 205

Lys Gln Ala Ser Leu Ile Ser Val Lys Val Phe Ala Gly Glu Ser Ala
210 215 220

Ser Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225 230 235 240

Val Ser Lys Ser Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
245 250 255

Gly Pro Ala Ser Ser Thr Trp Thr Thr Ala Ile Asn Ala Ala Phe Asn
260 265 270

Gln Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ser Leu Gly
275 280 285

Asn Pro Gln Pro Val Ser Gly Thr Ser Pro Ala Asn Val Pro Asn Ala
290 295 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305 310 315 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
325 330 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
340 345 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ser

355 360 365

Leu Glu Gly Leu Thr Ser Pro Thr Ala Val Thr Asn Arg Ile Lys Ala
370 375 380

Leu Ala Thr Ser Gly Arg Val Thr Gly Ser Leu Asn Gly Ser Pro Asn
385 390 395 400

Val Ile Ile Phe Asn Gly Asn Ser Ser
405

<210> 216
<211> 409
<212> PRT
<213> Trichoderma virens

<400> 216

Met Ala Ser Ile Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1 5 10 15

Ala Val Leu Ala Ala Pro Ala Gly His His Lys Ala Pro Glu Ala Val
20 25 30

Pro Asn Lys Phe Ile Val Thr Leu Lys Glu Gly Ala Ser Ile Asp Thr
35 40 45

Asp Ser His Leu Thr Trp Val Asn Asp Leu His Arg Arg Ser Leu Thr
50 55 60

Lys Arg Asn Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile His Thr Trp
65 70 75 80

Ser Ala Tyr Ala Gly Glu Phe Asp Glu Asp Thr Ile Glu Gln Ile Lys
85 90 95

Ala Ser Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met Tyr Leu
100 105 110

Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Thr Gly Ala
115 120 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Ser Gly Ser Thr Ser
130 135 140

Tyr Ile Tyr Asp Thr Ser Ala Gly Ser Gly Thr Phe Ala Tyr Val Val
145 150 155 160

Asp Ser Gly Ile Asn Thr Ser His Gln Gln Phe Gly Gly Arg Ala Ser
165 170 175

Leu Gly Tyr Asn Ala Ala Gly Gly Gln His Val Asp Thr Leu Gly His
180 185 190

```
Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
        195                 200                 205

Lys Gln Ala Ser Leu Ile Ser Val Lys Val Phe Gln Gly Asn Ser Ala
    210                 215                 220

Ser Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225                 230                 235                 240

Val Ser Arg Asn Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
                245                 250                 255

Gly Pro Ala Ser Ser Ala Trp Thr Thr Ala Ile Asn Ala Ala Phe Asn
            260                 265                 270

Gln Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ser Leu Gly
        275                 280                 285

Asn Pro Gln Pro Val Ser Gly Thr Ser Pro Ala Asn Val Pro Asn Ala
    290                 295                 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305                 310                 315                 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
                325                 330                 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
            340                 345                 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ser
        355                 360                 365

Leu Glu Gly Leu Ala Thr Pro Thr Ala Val Thr Asn Arg Ile Lys Ala
    370                 375                 380

Leu Ala Thr Ser Gly Arg Val Thr Gly Ser Leu Asn Gly Ser Pro Asn
385                 390                 395                 400

Val Leu Ile Phe Asn Gly Asn Ser Ala
                405
```

<210> 217
<211> 409
<212> PRT
<213> Trichoderma virens

<400> 217

```
Met Ala Ser Ile Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1               5                   10                  15
```

```
Ala Val Leu Ala Ala Pro Ala Gly His His Lys Ala Pro Glu Ala Val
            20                  25                  30

Pro Asn Lys Phe Ile Val Thr Leu Lys Glu Gly Ala Ser Ile Asp Thr
        35                  40                  45

Asp Ser His Leu Thr Trp Val Asn Asp Leu His Arg Arg Ser Leu Thr
    50                  55                  60

Lys Arg Asn Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile His Thr Trp
65                  70                  75                  80

Ser Ala Tyr Ala Gly Glu Phe Asp Glu Asp Thr Ile Glu Gln Ile Lys
                85                  90                  95

Ala Ser Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met Tyr Leu
            100                 105                 110

Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Thr Gly Ala
        115                 120                 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Ser Gly Ser Thr Ser
    130                 135                 140

Tyr Ile Tyr Asp Thr Ser Ala Gly Ser Gly Thr Phe Ala Tyr Val Val
145                 150                 155                 160

Asp Ser Gly Ile Asn Thr Ser His Gln Gln Phe Gly Gly Arg Ala Ser
                165                 170                 175

Leu Gly Tyr Asn Ala Ala Gly Gly Gln His Val Asp Thr Leu Gly His
            180                 185                 190

Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
        195                 200                 205

Lys Gln Ala Ser Leu Ile Ser Val Lys Val Phe Gln Gly Asn Ser Ala
    210                 215                 220

Ser Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225                 230                 235                 240

Val Ser Arg Asn Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
                245                 250                 255

Gly Pro Ala Ser Ser Ala Trp Thr Thr Ala Ile Asn Ala Ala Phe Asn
            260                 265                 270

Gln Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ser Leu Gly
        275                 280                 285
```

```
Asn Pro Gln Pro Val Ser Gly Thr Ser Pro Ala Asn Val Pro Asn Ala
    290                 295                 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305                 310                 315                 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
                325                 330                 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
            340                 345                 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ser
        355                 360                 365

Leu Glu Gly Leu Ala Thr Pro Thr Ala Val Thr Asn Ser Pro Asn Arg
    370                 375                 380

Ile Lys Ala Leu Ala Thr Ser Gly Arg Val Thr Gly Ser Leu Asn Gly
385                 390                 395                 400

Val Leu Ile Phe Asn Gly Asn Ser Ala
                405
```

<210> 218
<211> 409
<212> PRT
<213> Hypocrea lixii

<400> 218

```
Met Ala Ser Ile Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1               5                   10                  15

Ala Val Leu Ala Ala Pro Ala Ala His His Lys Ala Pro Glu Ala Val
            20                  25                  30

Pro Asn Lys Phe Ile Val Thr Leu Lys Glu Gly Ala Ser Val Asp Thr
        35                  40                  45

Asp Ser His Leu Thr Trp Val Asn Asp Leu His Arg Arg Ser Leu Thr
    50                  55                  60

Lys Arg Asn Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile His Thr Trp
65                  70                  75                  80

Asn Ala Tyr Ala Gly Glu Phe Asp Glu Glu Thr Ile Glu Gln Ile Lys
                85                  90                  95

Ser Ser Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met Tyr Leu
            100                 105                 110
```

```
Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Thr Gly Ala
        115                 120                 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Ser Gly Ser Thr Ser
    130                 135                 140

Tyr Ile Tyr Asp Thr Ser Ala Gly Ser Gly Thr Tyr Ala Tyr Val Val
145                 150                 155                 160

Asp Ser Gly Ile Asn Thr Ser His Gln Gln Phe Gly Gly Arg Ala Thr
                165                 170                 175

Leu Gly Tyr Asn Ala Ala Gly Gly Gln His Val Asp Thr Leu Gly His
            180                 185                 190

Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
        195                 200                 205

Lys Gln Ala Asn Leu Val Ser Val Lys Val Phe Gln Gly Asp Ser Ala
    210                 215                 220

Ser Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225                 230                 235                 240

Val Ser Lys Asn Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
                245                 250                 255

Gly Pro Ala Ser Ser Thr Trp Thr Thr Ala Ile Asn Ala Ala Tyr Asn
            260                 265                 270

Gln Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ser Phe Gly
        275                 280                 285

Asn Pro Gln Pro Val Ser Gly Thr Ser Pro Ala Asn Val Pro Asn Ala
    290                 295                 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305                 310                 315                 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
                325                 330                 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
            340                 345                 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ser
        355                 360                 365

Leu Glu Gly Leu Ser Thr Pro Ala Ala Val Thr Asn Arg Ile Lys Ala
    370                 375                 380
```

```
Leu Ala Thr Ser Gly Arg Val Thr Gly Ser Leu Asn Gly Ser Pro Asn
385                 390                 395                 400

Val Ile Ile Phe Asn Gly Asn Ser Ala
                405
```

<210> 219
<211> 409
<212> PRT
<213> Trichoderma hamatum

<400> 219

```
Met Thr Ser Ile Arg Arg Leu Ala Leu Tyr Leu Gly Ala Leu Leu Pro
1               5                   10                  15

Ala Val Leu Ala Ala Pro Ala Ala Leu His Lys Lys Pro Glu Ala Ala
            20                  25                  30

Pro Asn Lys Phe Ile Val Thr Leu Lys Glu Gly Ala Ser Ile Asp Thr
        35                  40                  45

Asp Ser His Leu Ala Trp Val Asn Asp Ile His Arg Arg Ser Leu Thr
    50                  55                  60

Lys Arg Ser Thr Ala Gly Val Glu Lys Thr Tyr Asn Ile His Thr Trp
65                  70                  75                  80

Ser Ala Tyr Ala Gly Glu Phe Asp Ala Glu Thr Ile Glu Gln Ile Lys
                85                  90                  95

Ser Ser Pro Asp Val Ala Ser Val Glu Pro Asp Tyr Ile Met Tyr Leu
            100                 105                 110

Ser Asp Ile Val Glu Asp Lys Arg Ala Leu Thr Thr Gln Ser Gly Ala
        115                 120                 125

Pro Trp Gly Leu Gly Thr Val Ser His Arg Thr Ser Gly Ser Thr Ser
    130                 135                 140

Tyr Ile Tyr Asp Ser Ser Ala Gly Ser Gly Thr Phe Ala Tyr Val Val
145                 150                 155                 160

Asp Ser Gly Ile Asn Thr Ser His Gln Gln Phe Gly Gly Arg Ala Ser
                165                 170                 175

Leu Gly Tyr Asn Ala Ala Gly Gly Gln His Val Asp Thr Leu Gly His
            180                 185                 190

Gly Thr His Val Ser Gly Thr Ile Gly Gly Ser Thr Tyr Gly Val Ala
        195                 200                 205

Lys Gln Ala Ser Leu Ile Ser Val Lys Val Phe Ala Gly Glu Ser Ala
```

210 215 220

Thr Thr Ser Val Ile Leu Asp Gly Tyr Asn Trp Ala Val Asn Asp Ile
225 230 235 240

Val Ser Arg Asn Arg Ala Ser Lys Ser Ala Ile Asn Met Ser Leu Gly
245 250 255

Gly Pro Ala Ser Ser Thr Trp Thr Thr Ala Ile Asn Ala Ala Phe Asn
260 265 270

Gln Gly Val Leu Thr Ile Val Ala Ala Gly Asn Gly Asp Ser Phe Gly
275 280 285

Asn Pro Gln Pro Val Ser Gly Thr Ser Pro Ala Asn Val Pro Asn Ala
290 295 300

Ile Thr Val Ala Ala Leu Asp Ile Asn Trp Arg Thr Ala Ser Phe Thr
305 310 315 320

Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Asn Ile Leu
325 330 335

Ser Ser Trp Ile Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr
340 345 350

Ser Met Ala Thr Pro His Val Val Gly Leu Ala Leu Tyr Leu Gln Ser
355 360 365

Leu Glu Gly Leu Thr Thr Pro Thr Ala Val Thr Asn Arg Ile Lys Ala
370 375 380

Leu Ala Thr Ala Gly Arg Ile Thr Gly Ser Leu Asn Gly Ser Pro Asn
385 390 395 400

Thr Leu Ile Phe Asn Gly Asn Ser Ala
405

<210> 220
<211> 403
<212> PRT
<213> Aspergillus fumigatus

<400> 220

Met Leu Ser Ile Lys Arg Thr Leu Leu Leu Leu Gly Ala Val Leu Pro
1 5 10 15

Ala Val Phe Gly Ala Pro Val Gln Glu Thr Arg Arg Ala Ala Gln Lys
20 25 30

Ile Pro Gly Lys Tyr Ile Val Thr Phe Lys Pro Gly Thr Asp Thr Ala
35 40 45

```
Thr Ile Glu Ser His Thr Leu Trp Ala Thr Asp Leu His Lys Arg Asn
    50                  55                  60

Leu Glu Arg Arg Asp Thr Thr Ser Gly Glu Pro Pro Val Gly Ile Glu
65                  70                  75                  80

Lys Ser Tyr Lys Ile Lys Asp Phe Ala Ala Tyr Ala Gly Ser Phe Asp
                85                  90                  95

Asp Ala Thr Ile Glu Glu Ile Arg Lys Arg Gly Asp Val Ala His Val
            100                 105                 110

Glu Glu Asp Gln Ile Trp Tyr Leu Asp Ala Leu Thr Thr Gln Lys Gly
        115                 120                 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Gly Gln Ala Ser Thr
    130                 135                 140

Asp Tyr Ile Tyr Asp Thr Ser Ala Gly Ala Gly Thr Tyr Ala Tyr Val
145                 150                 155                 160

Val Asp Ser Gly Ile Asn Val Asn His Val Glu Phe Glu Ser Arg Ala
                165                 170                 175

Ser Leu Ala Tyr Asn Ala Ala Gly Gly Ser His Val Asp Ser Ile Gly
            180                 185                 190

His Gly Thr His Val Ala Gly Thr Ile Gly Gly Lys Thr Tyr Gly Val
        195                 200                 205

Ala Lys Lys Thr Asn Leu Leu Ser Val Lys Val Phe Gln Gly Glu Ser
    210                 215                 220

Ser Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp Ala Val Asn Asp
225                 230                 235                 240

Ile Val Ser Lys Gly Arg Thr Lys Lys Ala Ala Ile Asn Met Ser Leu
                245                 250                 255

Gly Gly Gly Tyr Ser Tyr Ala Phe Asn Asn Ala Val Glu Asn Ala Phe
            260                 265                 270

Asp Glu Gly Val Leu Ser Val Val Ala Ala Gly Asn Glu Asn Ser Asp
        275                 280                 285

Ala Ser Asn Thr Ser Pro Ala Ser Ala Pro Asn Ala Leu Thr Val Ala
    290                 295                 300

Ala Ile Asn Lys Ser Asn Ala Arg Ala Ser Phe Ser Asn Tyr Gly Ser
305                 310                 315                 320
```

```
Val Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser Ala Trp Ile
                325                 330                 335

Gly Ser Thr Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
            340                 345                 350

Pro His Ile Val Gly Leu Ser Val Tyr Leu Met Gly Leu Glu Asn Leu
        355                 360                 365

Ser Gly Pro Ala Ala Val Thr Ala Arg Ile Lys Glu Leu Ala Thr Asn
    370                 375                 380

Gly Val Val Thr Asn Val Lys Gly Ser Pro Asn Lys Leu Ala Tyr Asn
385                 390                 395                 400

Gly Asn Ala
```

<210> 221
<211> 403
<212> PRT
<213> Aspergillus terreus

<400> 221

```
Met Gln Ser Ile Lys Arg Thr Leu Leu Leu Leu Gly Ala Val Leu Pro
1               5                   10                  15

Ala Val Leu Ala Gly Pro Ile Phe Pro His Arg Arg Ala Pro Thr Thr
            20                  25                  30

Ile Pro Gly Lys Tyr Ile Val Thr Phe Lys Ser Asp Val Asp Gln Ala
        35                  40                  45

Ala Ile Asp Lys His Thr Ala Trp Ala Thr Asp Ile His Lys Arg Asn
    50                  55                  60

Leu Gln Arg Arg Asp Ser Ser Glu Glu Asp Leu Pro Ile Gly Ile Glu
65                  70                  75                  80

Arg Asn Phe Lys Ile Asn Lys Phe Ala Ala Tyr Ser Gly Ser Phe Asp
                85                  90                  95

Glu Asp Thr Ile Ala Gln Ile Arg Gln Ser Asp Glu Val Ala Ala Val
            100                 105                 110

Glu Glu Asp Gln Val Trp His Leu Phe Asp Leu Thr Thr Gln Ser Asp
        115                 120                 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Gly Gln Pro Ser Thr
    130                 135                 140
```

```
Asp Tyr Ile Tyr Asp Thr Asn Gly Gly Glu Gly Thr Tyr Ala Tyr Val
145                 150                 155                 160

Val Asp Thr Gly Ile Asn Val Asp His Glu Glu Phe Glu Gly Arg Ala
                165                 170                 175

Ser Leu Ala Tyr Asn Ala Ala Gly Gly Gln His Val Asp Gly Val Gly
            180                 185                 190

His Gly Thr His Val Ser Gly Thr Ile Gly Gly Lys Thr Tyr Gly Val
        195                 200                 205

Ala Lys Lys Ala Asn Leu Leu Ser Val Lys Val Phe Val Gly Glu Ser
    210                 215                 220

Ser Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp
225                 230                 235                 240

Ile Val Ser Lys Lys Arg Thr Gly Lys Ala Ala Ile Asn Met Ser Leu
                245                 250                 255

Gly Gly Gly Tyr Ser Lys Ala Phe Asn Asp Ala Val Glu Asn Ala Phe
            260                 265                 270

Asn Glu Gly Val Leu Ser Ile Val Ala Ala Gly Asn Glu Asn Thr Asp
        275                 280                 285

Ala Ser Ser Thr Ser Pro Ala Ser Ala Pro Asp Ala Phe Thr Val Ala
    290                 295                 300

Ala Ile Asn Val Asn Asn Thr Arg Ala Tyr Phe Ser Asn Tyr Gly Ser
305                 310                 315                 320

Val Val Asp Ile Phe Ala Pro Gly Gln Asn Ile Leu Ser Ala Trp Ile
                325                 330                 335

Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
            340                 345                 350

Pro His Ile Val Gly Leu Ser Ile Tyr Leu Met Ser Leu Glu Asp Leu
        355                 360                 365

Ser Ser Pro Lys Ala Val Ser Asp Arg Ile Lys Glu Leu Ala Thr Arg
    370                 375                 380

Gly Val Val Ser Asn Val Ala Gly Ser Pro Asn Leu Leu Ala Tyr Asn
385                 390                 395                 400

Gly Asn Ala
```

<210> 222
<211> 403
<212> PRT
<213> Aspergillus oryzae

<400> 222

```
Met Gln Ser Ile Lys Arg Thr Leu Leu Leu Leu Gly Ala Ile Leu Pro
1               5                  10                  15

Ala Val Leu Gly Ala Pro Val Gln Glu Thr Arg Arg Ala Ala Glu Lys
            20                  25                  30

Leu Pro Gly Lys Tyr Ile Val Thr Phe Lys Pro Gly Ile Asp Glu Ala
        35                  40                  45

Lys Ile Gln Glu His Thr Thr Trp Ala Thr Asn Ile His Gln Arg Ser
    50                  55                  60

Leu Glu Arg Arg Gly Ala Thr Gly Gly Asp Leu Pro Val Gly Ile Glu
65                  70                  75                  80

Arg Asn Tyr Lys Ile Asn Lys Phe Ala Ala Tyr Ala Gly Ser Phe Asp
                85                  90                  95

Asp Ala Thr Ile Glu Glu Ile Arg Lys Asn Glu Asp Val Ala Tyr Val
            100                 105                 110

Glu Glu Asp Gln Ile Tyr Tyr Leu Asp Gly Leu Thr Thr Gln Lys Ser
        115                 120                 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Gly Gln Gln Ser Thr
    130                 135                 140

Asp Tyr Ile Tyr Asp Thr Ser Ala Gly Glu Gly Thr Tyr Ala Tyr Val
145                 150                 155                 160

Val Asp Ser Gly Val Asn Val Asp His Glu Glu Phe Glu Gly Arg Ala
                165                 170                 175

Ser Lys Ala Tyr Asn Ala Ala Gly Gly Gln His Val Asp Ser Ile Gly
            180                 185                 190

His Gly Thr His Val Ser Gly Thr Ile Ala Gly Lys Thr Tyr Gly Ile
        195                 200                 205

Ala Lys Lys Ala Ser Ile Leu Ser Val Lys Val Phe Gln Gly Glu Ser
    210                 215                 220

Ser Ser Thr Ser Val Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp
225                 230                 235                 240
```

```
Ile Val Ser Lys Lys Arg Thr Ser Lys Ala Ala Ile Asn Met Ser Leu
                245                 250                 255

Gly Gly Gly Tyr Ser Lys Ala Phe Asn Asp Ala Val Glu Asn Ala Phe
            260                 265                 270

Glu Gln Gly Val Leu Ser Val Val Ala Ala Gly Asn Glu Asn Ser Asp
        275                 280                 285

Ala Gly Gln Thr Ser Pro Ala Ser Ala Pro Asp Ala Ile Thr Val Ala
    290                 295                 300

Ala Ile Gln Lys Ser Asn Asn Arg Ala Ser Phe Ser Asn Phe Gly Lys
305                 310                 315                 320

Val Val Asp Val Phe Ala Pro Gly Gln Asp Ile Leu Ser Ala Trp Ile
                325                 330                 335

Gly Ser Ser Ser Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
            340                 345                 350

Pro His Ile Val Gly Leu Ser Leu Tyr Leu Ala Ala Leu Glu Asn Leu
        355                 360                 365

Asp Gly Pro Ala Ala Val Thr Lys Arg Ile Lys Glu Leu Ala Thr Lys
    370                 375                 380

Asp Val Val Lys Asp Val Lys Gly Ser Pro Asn Leu Leu Ala Tyr Asn
385                 390                 395                 400

Gly Asn Ala
```

<210> 223
<211> 416
<212> PRT
<213> Aspergillus niger

<400> 223

```
Met Ala Phe Leu Lys Arg Ile Leu Pro Leu Leu Ala Leu Ile Leu Pro
1               5                   10                  15

Ala Val Phe Ser Ala Thr Glu Gln Val Pro His Pro Thr Ile Gln Thr
            20                  25                  30

Ile Pro Gly Lys Tyr Ile Val Thr Phe Lys Ser Gly Ile Asp Asn Ala
        35                  40                  45

Lys Ile Glu Ser His Ala Ala Trp Val Thr Glu Leu His Arg Arg Ser
    50                  55                  60

Leu Glu Gly Arg Ser Thr Thr Glu Asp Asp Leu Pro Ala Gly Ile Glu
```

```
65                  70                  75                  80

Arg Thr Tyr Arg Ile Ala Asn Phe Ala Gly Tyr Ala Gly Ser Phe Asp
                85                  90                  95

Glu Lys Thr Ile Glu Glu Ile Arg Lys His Asn His Val Ala Tyr Val
            100                 105                 110

Glu Gln Asp Gln Val Trp Tyr Leu Asp Thr Leu Val Thr Glu Arg Arg
        115                 120                 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Arg Gly Ala Ser Ser Thr
    130                 135                 140

Asp Tyr Ile Tyr Asp Asp Ser Ala Gly Glu Gly Thr Tyr Ala Tyr Val
145                 150                 155                 160

Val Asp Thr Gly Ile Leu Ala Thr His Asn Glu Phe Gly Gly Arg Ala
                165                 170                 175

Ser Leu Ala Tyr Asn Ala Ala Gly Gly Glu His Val Asp Gly Val Gly
            180                 185                 190

His Gly Thr His Val Ala Gly Thr Ile Gly Gly Lys Thr Tyr Gly Val
        195                 200                 205

Ser Lys Asn Ala His Leu Leu Ser Val Lys Val Phe Val Gly Glu Ser
    210                 215                 220

Ser Ser Thr Ser Val Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp
225                 230                 235                 240

Ile Val Ser Lys Asn Arg Thr Ser Lys Ala Ala Ile Asn Met Ser Leu
                245                 250                 255

Gly Gly Gly Tyr Ser Tyr Ala Phe Asn Asn Ala Val Glu Asn Ala Phe
            260                 265                 270

Asp Glu Gly Val Leu Ser Cys Val Ala Ala Gly Asn Glu Asn Arg Asp
        275                 280                 285

Ala Ala Arg Thr Ser Pro Ala Ser Ala Pro Asp Ala Ile Thr Val Ala
    290                 295                 300

Ala Ile Asn Arg Ser Asn Ala Arg Ala Ser Phe Ser Asn Tyr Gly Ser
305                 310                 315                 320

Val Val Asp Ile Phe Ala Pro Gly Glu Gln Val Leu Ser Ala Trp Thr
                325                 330                 335

Gly Ser Asn Ser Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
```

```
            340                 345                 350

Pro His Val Thr Gly Leu Ile Leu Tyr Leu Met Gly Leu Arg Asp Leu
        355                 360                 365

Ala Thr Pro Ala Ala Ala Thr Thr Glu Leu Lys Arg Leu Ala Thr Arg
    370                 375                 380

Asn Ala Val Thr Asn Val Ala Gly Ser Pro Asn Leu Leu Ala Tyr Asn
385                 390                 395                 400

Gly Asn Ser Gly Val Ser Lys Gly Gly Ser Asp Asp Gly Asp Glu Asp
                405                 410                 415


<210>  224
<211>  411
<212>  PRT
<213>  Glomerella graminicola

<400>  224

Met Ala Asn Leu Arg Arg Leu Ala Leu Ala Ile Ala Ala Leu Leu Pro
1               5                   10                  15

Ala Val Leu Ala Ala Pro Ala Ala Leu Asn Arg Arg Asp Glu Pro Ala
            20                  25                  30

Ala Ala Pro Gly Lys Tyr Ile Ile Thr Leu Lys Glu Asp Ala Ala Val
        35                  40                  45

Asn Val Asp Ser His Leu Asn Trp Val Ala Asp Val His Arg Arg Ser
    50                  55                  60

Leu Gly Lys Arg Asn Thr Ala Gly Val Glu Asn Lys Phe Asn Ile Ser
65                  70                  75                  80

Thr Trp Asn Ala Tyr Ser Gly Glu Phe Asp Glu Ala Thr Ile Glu Ala
                85                  90                  95

Ile Lys Ala Ser Pro Glu Val Ala Val Val Glu Pro Asp Tyr Tyr Met
            100                 105                 110

Tyr Leu Ser Asp Phe Glu Val Asp Glu Arg Ala Leu Thr Thr Gln Thr
        115                 120                 125

Gly Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Thr Lys Gly Ser
    130                 135                 140

Thr Gln Tyr Val Tyr Asp Thr Ser Ala Gly Ala Asn Thr Tyr Ala Tyr
145                 150                 155                 160

Val Val Asp Ser Gly Val Ile Ser Thr His Thr Gln Phe Gly Gly Arg
                165                 170                 175
```

```
Val Thr Leu Gly Phe Asn Ala Tyr Ser Gly Val His Thr Asp Thr Leu
            180                 185                 190

Gly His Gly Thr His Val Ala Gly Thr Ile Gly Gly Ser Thr Tyr Gly
        195                 200                 205

Val Ala Lys Gln Thr Asn Ile Ile Ser Val Lys Val Phe Gln Gly Ala
    210                 215                 220

Ser Gly Thr Thr Ser Ser Ile Leu Ser Gly Phe Asn Trp Ala Val Asn
225                 230                 235                 240

Asp Ile Thr Ser Lys Gly Arg Ala Ala Arg Ser Val Ile Asn Met Ser
                245                 250                 255

Leu Gly Gly Pro Ser Ser Thr Thr Trp Asn Thr Ala Ile Asn Ala Ala
            260                 265                 270

Tyr Ser Gln Gly Val Leu Ser Val Val Ala Ala Gly Asn Gly Asp Ser
        275                 280                 285

Leu Gly Asn Pro Leu Pro Val Ser Ser Gln Ser Pro Ala Asn Val Pro
    290                 295                 300

Asn Ala Leu Thr Val Ala Ala Ile Asp Ser Asn Trp Ala Pro Ala Tyr
305                 310                 315                 320

Phe Thr Asn Tyr Gly Pro Gly Val Asp Ile Phe Ala Pro Gly Val Ser
                325                 330                 335

Ile Leu Ser Ala Trp Ile Gly Gly Asn Ser Ala Thr Asn Thr Ile Ser
            340                 345                 350

Gly Thr Ser Met Ala Thr Pro His Val Thr Gly Leu Ala Leu Tyr Leu
        355                 360                 365

Gln Ala Leu Glu Asn Ile Ala Thr Pro Ala Ala Leu Thr Ala Arg Ile
    370                 375                 380

Lys Ala Leu Gly Thr Ser Gly Arg Ile Thr Gly Thr Leu Ser Gly Ser
385                 390                 395                 400

Pro Asn Leu Val Ala Tyr Asn Gly Asn Gly Ala
                405                 410
```

<210> 225
<211> 411
<212> PRT
<213> Gibberella zeae

<400> 225

```
Met Thr Ser Phe Arg Arg Leu Ala Leu Ala Leu Gly Ala Leu Leu Pro
1               5                  10                  15

Ala Val Leu Ala Ala Pro Thr Glu Lys Arg Gln Glu Leu Thr Ala Ala
            20                  25                  30

Pro Asp Lys Tyr Ile Ile Thr Leu Lys Pro Glu Ala Thr Glu Asn Lys
        35                  40                  45

Ile Glu Ala His Leu Asn Trp Val Ser Asp Val His Arg Arg Ser Leu
    50                  55                  60

Asn Lys Arg Asp Thr Ser Gly Val Glu Lys Lys Phe Asn Ile Ser Ser
65                  70                  75                  80

Trp Asn Ala Tyr Ser Gly Glu Phe Asp Lys Ala Thr Ile Asp Glu Ile
                85                  90                  95

Lys Lys Ser Pro Glu Val Ala Phe Val Glu Pro Asp Tyr Thr Val Tyr
            100                 105                 110

Leu Asp Phe Glu Thr Glu Leu Thr Asp Arg Ala Leu Thr Thr Gln Ser
        115                 120                 125

Gly Ala Pro Trp Gly Leu Ala Ser Ile Ser Arg Arg Thr Ser Gly Gly
    130                 135                 140

Ser Thr Tyr Thr Tyr Asp Thr Thr Ala Gly Ser Gly Ser Tyr Gly Tyr
145                 150                 155                 160

Val Val Asp Ser Gly Ile Asn Val Asn His Arg Asp Phe Gly Gly Arg
                165                 170                 175

Ala Ser Leu Gly Tyr Asn Ala Ala Gly Gly Ala His Val Asp Thr Leu
            180                 185                 190

Gly His Gly Thr His Val Ala Gly Thr Ile Ala Ser Ser Thr Tyr Gly
        195                 200                 205

Val Ala Lys Ala Ala Asn Val Ile Ser Val Lys Val Phe Thr Gly Asn
    210                 215                 220

Ser Ala Ser Thr Ser Thr Ile Leu Ala Gly Phe Asn Trp Ala Val Asn
225                 230                 235                 240

Asp Ile Thr Ser Lys Gly Arg Ala Gly Arg Ser Val Ile Asn Met Ser
                245                 250                 255

Leu Gly Gly Pro Ser Ala Gln Thr Trp Thr Thr Ala Ile Asn Ala Ala
            260                 265                 270
```

```
Tyr Asn Ser Gly Val Leu Ser Val Val Ala Ala Gly Asn Gly Asp Asp
        275                 280                 285

Leu Gly Arg Pro Leu Pro Val Ser Gly Gln Ser Pro Ala Asn Val Pro
    290                 295                 300

Asn Ala Leu Thr Val Ala Ala Ile Asp Ser Ser Trp Arg Thr Ala Ser
305                 310                 315                 320

Phe Thr Asn Tyr Gly Ala Gly Val Asp Val Phe Ala Pro Gly Val Gly
                325                 330                 335

Ile Leu Ser Thr Trp Tyr Thr Ser Asn Thr Ala Thr Asn Ser Ile Ser
            340                 345                 350

Gly Thr Ser Met Ala Cys Pro His Val Ala Gly Leu Ala Leu Tyr Leu
        355                 360                 365

Gln Val Leu Glu Gly Leu Ser Thr Pro Ala Ala Val Thr Asn Arg Ile
    370                 375                 380

Lys Ala Leu Ala Thr Thr Gly Arg Val Thr Gly Thr Leu Asn Gly Ser
385                 390                 395                 400

Pro Asn Leu Ile Ala Phe Asn Gly Ala Ser Thr
                405                 410


<210>  226
<211>  414
<212>  PRT
<213>  Fusarium oxysporum

<400>  226

Met Thr Ser Ile Arg Arg Leu Ala Leu Ala Leu Gly Ala Leu Leu Pro
1               5                   10                  15

Ala Val Leu Ala Ala Pro Ala Asp Ile Leu Ser Lys Arg Gln Ala Val
            20                  25                  30

Pro Asp Lys Tyr Ile Ile Thr Leu Lys Pro Asp Ala Ser Asp Ser Ser
        35                  40                  45

Val Ala Ala His Leu Asn Trp Val Gly Asp Val His Arg Arg Ser Leu
    50                  55                  60

Asn Lys Arg Asp Thr Ser Gly Val Glu Lys Thr Phe Asn Ile Ser Ser
65                  70                  75                  80

Trp Ser Ala Tyr Ser Gly Glu Phe Asp Lys Ser Thr Ile Ala Glu Ile
                85                  90                  95
```

```
Lys Lys Ser Pro Glu Val Ala Phe Val Glu Pro Asp Tyr Thr Met Tyr
            100                 105                 110

Leu Ser Tyr Glu Glu Ser Glu Pro Glu Leu Ala Asp Arg Ala Leu Thr
        115                 120                 125

Thr Gln Ser Gly Ala Pro Trp Gly Leu Gly Thr Ile Ser His Arg Thr
    130                 135                 140

Ser Gly Ser Thr Ser Tyr Ile Tyr Asp Thr Thr Ala Gly Gln Gly Ser
145                 150                 155                 160

Tyr Ala Tyr Val Val Asp Ser Gly Val Gln Val Ser His Thr Asn Phe
                165                 170                 175

Gly Gly Arg Ala Ser Leu Gly Tyr Asn Ala Val Gly Gly Ala His Glu
            180                 185                 190

Asp Thr Leu Gly His Gly Thr His Val Ala Gly Thr Ile Ala Gly Thr
        195                 200                 205

Thr Tyr Gly Val Ala Lys Arg Ala Asn Ile Ile Ser Val Lys Val Phe
    210                 215                 220

Ala Gly Arg Glu Gly Ser Thr Ser Thr Ile Leu Ala Gly Phe Asn Trp
225                 230                 235                 240

Ala Val Asn Asp Ile Thr Ser Lys Ser Arg Ala Gly Arg Ser Val Ile
                245                 250                 255

Asn Leu Ser Leu Gly Gly Pro Ala Ser Gln Thr Trp Thr Ser Ala Ile
            260                 265                 270

Asn Ala Ala Tyr Asn Ser Gly Val Leu Ser Val Val Ala Ala Gly Asn
        275                 280                 285

Gly Asp Asp Ala Gly Arg Pro Leu Pro Val Ser Gly Gln Ser Pro Ala
    290                 295                 300

Asn Ala Pro Asn Ala Leu Thr Val Ala Ala Ile Asp Ser Ser Trp Arg
305                 310                 315                 320

Pro Ala Ser Phe Thr Asn Tyr Gly Ala Gly Val Asp Val Phe Gly Pro
                325                 330                 335

Gly Val Asn Ile Leu Ser Thr Trp Ile Gly Ser Asn Ser Ala Thr Asn
            340                 345                 350

Thr Ile Ser Gly Thr Ser Met Ala Cys Pro His Val Ala Gly Leu Ala
        355                 360                 365
```

```
Leu Tyr Leu Gln Val Leu Glu Gly Leu Ser Thr Pro Ala Ser Val Thr
    370                 375                 380

Asn Arg Ile Lys Ser Leu Ala Thr Thr Gly Arg Ile Thr Gly Thr Leu
385                 390                 395                 400

Ser Gly Ser Pro Asn Ser Val Ala Tyr Asn Gly Asn Gly Ala
                405                 410
```

<210> 227
<211> 415
<212> PRT
<213> Nectria haematococca

<400> 227

```
Met Ala Ser Ile Arg Arg Leu Ala Leu Phe Leu Gly Ala Leu Leu Pro
1               5                   10                  15

Ala Ala Leu Ala Ala Pro Val Asp Gly Pro Val Arg Arg Gln Glu Thr
            20                  25                  30

Ala Ile Pro Asn Lys Tyr Ile Ile Thr Leu Lys Pro Glu Ala Ser Asp
        35                  40                  45

Ser Lys Ile Ser Ala His Leu Asp Trp Val Gly Asp Val His Arg Arg
    50                  55                  60

Ser Leu Ser Lys Arg Asp Thr Ala Gly Val Glu Glu Thr Tyr Asn Ile
65                  70                  75                  80

Ser Asn Trp Asn Ala Tyr Ala Gly Glu Phe Asp Glu Ala Thr Ile Glu
                85                  90                  95

Glu Ile Lys Ser Ser Pro Glu Val Ala Phe Val Glu Pro Asp Phe Glu
            100                 105                 110

Ala Tyr Leu Trp Val Glu Glu Ser Ser Glu Leu Ser Asp Arg Ala Leu
        115                 120                 125

Thr Thr Gln Thr Gly Ala Thr Trp Gly Leu Gly Thr Ile Ser His Arg
    130                 135                 140

Thr Ser Gly Ser Thr Ser Tyr Ile Tyr Asp Thr Ser Ala Gly Ser Gly
145                 150                 155                 160

Ser Tyr Ala Tyr Val Val Asp Ser Gly Val Gln Val Gly His Ser Gln
                165                 170                 175

Phe Gly Thr Arg Ala Ser Leu Gly Phe Asn Ala Phe Ser Gly Ala His
            180                 185                 190

Thr Asp Thr Leu Gly His Gly Thr His Val Ala Gly Thr Ile Ala Gly
```

195 200 205

Ser Thr Tyr Gly Val Ala Lys Gln Ala Asn Ile Ile Ser Val Lys Val
210 215 220

Phe Gln Gly Asn Gln Gly Ser Thr Ser Thr Ile Leu Ser Gly Phe Asn
225 230 235 240

Trp Ala Val Asn Asp Ile Thr Ser Lys Gly Arg Gln Gly Arg Ser Val
245 250 255

Ile Asn Leu Ser Leu Gly Gly Glu Ser Ser Gln Thr Trp Ile Ser Ala
260 265 270

Ile Asn Ala Ala Tyr Asn Ser Gly Val Leu Ser Val Val Ala Ala Gly
275 280 285

Asn Gly Asp Ile Asn Gly Asn Pro Leu Pro Val Ser Ser Gln Ser Pro
290 295 300

Ala Asn Ala Pro Asn Ala Leu Thr Val Gly Ala Ile Asp Ser Ser Trp
305 310 315 320

Arg Pro Ala Ser Phe Thr Asn Tyr Gly Ala Gly Val Asp Ile His Ala
325 330 335

Pro Gly Val Ser Val Leu Ser Ser Tyr Ile Gly Ser Asn Thr Ala Thr
340 345 350

Arg Ser Leu Ser Gly Thr Ser Met Ala Cys Pro His Val Ala Gly Leu
355 360 365

Ala Leu Tyr Leu Gln Val Leu Glu Gly Leu Ser Thr Pro Ala Ala Val
370 375 380

Thr Asn Arg Ile Lys Ala Leu Gly Thr Ser Gly Arg Ile Thr Gly Thr
385 390 395 400

Leu Asn Gly Ser Pro Asn Leu Val Ala Tyr Asn Gly Asn Gly Ala
405 410 415

<210> 228
<211> 403
<212> PRT
<213> Neosartorya fischeri

<400> 228

Met Leu Ser Ile Lys Arg Thr Leu Leu Leu Leu Gly Ala Val Leu Pro
1 5 10 15

Ala Val Phe Gly Ala Pro Val Gln Glu Thr Arg Arg Ala Ala Gln Lys
20 25 30

```
Ile Pro Gly Lys Tyr Ile Val Thr Phe Lys Pro Gly Thr Asp Ala Ala
        35                  40                  45

Thr Ile Glu Ser His Thr Leu Trp Ala Thr Asp Leu His Lys Arg Asn
    50                  55                  60

Leu Glu Arg Arg Asp Ala Thr Ser Gly Glu Pro Pro Ile Gly Ile Glu
65                  70                  75                  80

Lys Asn Tyr Lys Ile Lys Asp Phe Ala Ala Tyr Ala Gly Ser Phe Asp
                85                  90                  95

Asp Thr Thr Ile Glu Glu Ile Arg Lys Ser Ala Asp Val Ala His Val
            100                 105                 110

Glu Glu Asp Gln Ile Trp Tyr Ile Asp Ala Leu Thr Thr Gln Lys Gly
        115                 120                 125

Ala Pro Trp Gly Leu Gly Ser Ile Ser His Lys Gly Gln Ala Ser Thr
    130                 135                 140

Asp Tyr Ile Tyr Asp Thr Ser Ala Gly Ala Gly Thr Tyr Ala Tyr Val
145                 150                 155                 160

Val Asp Thr Gly Ile Asn Val Asn His Val Glu Phe Glu Gly Arg Ala
                165                 170                 175

Ser Leu Ala Tyr Asn Ala Ala Gly Gly Ser His Val Asp Ser Val Gly
            180                 185                 190

His Gly Thr His Val Ala Gly Thr Ile Gly Gly Lys Thr Tyr Gly Val
        195                 200                 205

Ala Lys Lys Thr Asn Leu Leu Ser Val Lys Val Phe Gln Gly Glu Ser
    210                 215                 220

Ser Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp
225                 230                 235                 240

Ile Val Ser Lys Gly Arg Thr Arg Lys Ala Ala Ile Asn Met Ser Leu
                245                 250                 255

Gly Gly Gly Tyr Ser Tyr Ala Phe Asn Asn Ala Val Glu Asn Ala Phe
            260                 265                 270

Asp Glu Gly Val Leu Ser Val Val Ala Ala Gly Asn Glu Asn Thr Asp
        275                 280                 285

Ala Ser Asn Thr Ser Pro Ala Ser Ala Pro Asn Ala Leu Thr Val Ala
    290                 295                 300
```

```
Ala Ile Asn Arg Ser Asn Ala Arg Ala Ser Phe Ser Asn Tyr Gly Ser
305                 310                 315                 320

Val Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser Ala Trp Ile
                325                 330                 335

Gly Ser Asn Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr
            340                 345                 350

Pro His Ile Val Gly Leu Ser Val Tyr Leu Met Gly Leu Glu Ser Leu
        355                 360                 365

Ser Gly Pro Ala Ala Val Thr Ser Arg Ile Lys Gln Leu Ala Thr Asn
    370                 375                 380

Gly Val Val Thr Asn Ala Gln Gly Ser Pro Asn Lys Leu Ala Tyr Asn
385                 390                 395                 400

Gly Asn Ala
```

<210> 229
<211> 393
<212> PRT
<213> Verticillium albo-atrum

<400> 229

```
Met Val Asn Phe Arg Asn Val Leu Leu Gly Leu Leu Pro Phe Ala Ala
1               5                   10                  15

Ala Ala Pro Val Ala Pro Gly Ser Pro Asp Val Ala Asn Lys Tyr Ile
            20                  25                  30

Val Thr Leu Lys Ser Gly Ile Ser Thr Asp Asn Val Ala Ser His Leu
        35                  40                  45

Asn Trp Val Ser Asp Val His Lys Arg Ser Leu Gly Arg Arg Asp Leu
    50                  55                  60

Ala Gly Val Glu Lys Thr Tyr Asp Ile Lys Asn Phe His Ala Tyr Ala
65                  70                  75                  80

Gly Thr Phe Asp Glu Ser Val Val Ala Glu Leu Lys Asn Asn Pro Asp
                85                  90                  95

Val Ala Ala Val Glu Pro Asp Gln Ile Tyr Thr Leu Ser Ala Tyr Thr
            100                 105                 110

Thr Gln Ser Ser Ala Pro Trp Gly Leu Ala Ser Ile Ser Ser Arg Thr
        115                 120                 125
```

```
Ser Gly Ala Thr Ser Tyr Arg Tyr Asp Asn Ser Ala Gly Ala Gly Thr
    130                 135                 140

Phe Ala Tyr Val Val Asp Ser Gly Ile Leu Thr Thr His Thr Asn Phe
145                 150                 155                 160

Gly Gly Arg Ala Ile Arg Gly Tyr Asn Ala Ala Gly Gly Glu Trp Val
                165                 170                 175

Asp Ser Ile Gly His Gly Thr His Val Ala Gly Thr Ile Gly Ser Thr
            180                 185                 190

Thr Tyr Gly Val Ala Lys Ala Ala Thr Leu Ile Asp Val Lys Val Phe
        195                 200                 205

Val Gly Arg Thr Ser Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp
    210                 215                 220

Ala Val Asn Asp Ile Val Ser Lys Asn Arg Ala Ser Arg Ser Val Ile
225                 230                 235                 240

Asn Leu Ser Leu Gly Gly Pro Thr Ser Thr Ala Trp Thr Ser Ala Ile
                245                 250                 255

Asn Ala Ala Tyr Ser Ser Gly Ile Leu Ser Val Ala Ala Ala Gly Asn
            260                 265                 270

Glu Asn Val Ser Ala Ser Thr Arg Ser Pro Ala Asn Ala Pro Asn Ala
        275                 280                 285

Leu Thr Val Gly Ala Ile Asn Ser Ala Trp Ala Glu Asp Thr Ser Tyr
    290                 295                 300

Ser Asn Phe Gly Pro Ala Ile Asp Ile Leu Ala Pro Gly Thr Asn Val
305                 310                 315                 320

Leu Ser Leu Gly Tyr Thr Ser Asn Thr Ser Thr Arg Thr Leu Thr Gly
                325                 330                 335

Thr Ser Met Ala Ala Pro His Val Ala Gly Leu Ala Leu Tyr Leu Ala
            340                 345                 350

Ala Phe Glu Asn Ile Asn Thr Pro Ala Ala Leu Arg Asn Arg Ile Val
        355                 360                 365

Ala Leu Gly Thr Ser Gly Arg Ala Thr Gly Ile Arg Gly Gly Ser Pro
    370                 375                 380

Asn Leu Ile Ala Tyr Asn Gly Asn Ala
385                 390
```

<210> 230
<211> 401
<212> PRT
<213> Glomerella graminicola

<400> 230

```
Met Val Gly Phe Lys Arg Phe Ala Met Leu Ala Ala Ala Ala Cys Ala
1               5                   10                  15

Met Ala Ala Pro Thr Arg Arg Glu Glu Ala Thr Glu Val Thr Ala Gln
            20                  25                  30

Thr Ile Glu Gly Ser Tyr Ile Ile Thr Leu Lys Asn Thr Val Ser Val
        35                  40                  45

Glu Gly Leu Thr Ser His Leu Ser Trp Ile Asn Asp Val His Ser Arg
    50                  55                  60

Ser Leu Asp Lys Arg Gln Phe Pro Gly Ala Glu Arg Thr Phe Ser Phe
65                  70                  75                  80

Asn Ser Phe Gln Ala Tyr Ser Gly Lys Phe Asp Asp Ala Thr Ile Asp
                85                  90                  95

Ile Ile Lys Ser Ser Pro Glu Val Ala Ser Val Glu Arg Asp Gln Leu
            100                 105                 110

Trp Thr Leu Ser Ala Ile Ala Thr Gln Thr Gly Ala Pro Trp Gly Leu
        115                 120                 125

Gly Thr Val Ser Arg Arg Thr Ser Gly Ser Thr Gln Tyr Leu Tyr Asp
    130                 135                 140

Thr Asn Ala Gly Ser Gly Thr Phe Ala Tyr Val Val Asp Ser Gly Ile
145                 150                 155                 160

Asn Val Gly His Thr Asn Phe Gly Gly Arg Ala Thr Leu Gly Tyr Asn
                165                 170                 175

Ala Ala Gly Gly Ala His Thr Asp Thr Leu Gly His Gly Thr His Val
            180                 185                 190

Ala Gly Thr Ile Gly Ser Thr Thr Tyr Gly Val Ala Lys Leu Thr Ser
        195                 200                 205

Leu Ile Ser Val Lys Val Phe Val Gly Asn Ser Ala Ser Thr Ser Val
    210                 215                 220

Ile Leu Ala Gly Tyr Asn Trp Ala Val Asn Asp Ile Thr Thr Lys Gly
225                 230                 235                 240
```

```
Arg Ala Ser Lys Ser Val Ile Asn Met Ser Leu Gly Gly Pro Ser Ser
                245                 250                 255

Thr Ala Trp Thr Thr Ala Ile Asn Ala Ala Tyr Ser Ala Gly Val Ile
            260                 265                 270

Thr Val Val Ala Ala Gly Asn Glu Ala Gln Asn Ala Ala Asn Val Ser
        275                 280                 285

Pro Ala Asn Ala Pro Asn Ala Ile Thr Val Gly Ala Ile Thr Ser Thr
    290                 295                 300

Trp Ala Ile Ala Ser Tyr Ser Asn Tyr Gly Thr Ser Leu Asp Leu Phe
305                 310                 315                 320

Ala Pro Gly Ser Ser Ile Leu Ser Thr Trp Ile Gly Ser Thr Thr Ala
                325                 330                 335

Thr Asn Ser Ile Ser Gly Thr Ser Met Ala Ser Pro His Val Ala Gly
            340                 345                 350

Leu Val Asn Tyr Leu Gln Ser Val Glu Asn Val Gly Thr Pro Ala Ala
        355                 360                 365

Val Val Ala Arg Ile Lys Ala Leu Ala Thr Thr Gly Arg Val Thr Gly
    370                 375                 380

Asn Leu Arg Ser Ser Pro Asn Leu Ile Ala Tyr Asn Gly Ala Gly Gly
385                 390                 395                 400

Ala
```

<210> 231
<211> 555
<212> PRT
<213> Trichoderma reesei

<400> 231

```
Met Arg Ala Cys Leu Leu Phe Leu Gly Ile Thr Ala Leu Ala Thr Ala
1               5                   10                  15

Ile Pro Ala Leu Lys Pro Pro His Gly Ser Pro Asp Arg Ala His Thr
            20                  25                  30

Thr Gln Leu Ala Lys Val Ser Ile Ala Leu Gln Pro Glu Cys Arg Glu
        35                  40                  45

Leu Leu Glu Gln Ala Leu His His Leu Ser Asp Pro Ser Ser Pro Arg
    50                  55                  60

Tyr Gly Arg Tyr Leu Gly Arg Glu Glu Ala Lys Ala Leu Leu Arg Pro
```

```
65                  70                  75                  80

Arg Arg Glu Ala Thr Ala Ala Val Lys Arg Trp Leu Ala Arg Ala Gly
                85                  90                  95

Val Pro Ala His Asp Val Leu Thr Asp Gly Gln Phe Ile His Val Arg
            100                 105                 110

Thr Leu Ala Glu Lys Ala Gln Ala Leu Leu Gly Phe Glu Tyr Asn Ser
        115                 120                 125

Thr Leu Gly Ser Gln Thr Ile Ala Ile Ser Thr Leu Pro Gly Lys Ile
    130                 135                 140

Arg Lys His Val Met Thr Val Gln Tyr Val Pro Leu Trp Thr Glu Ala
145                 150                 155                 160

Asp Trp Glu Glu Cys Lys Thr Ile Ile Thr Pro Ser Cys Leu Lys Arg
                165                 170                 175

Leu Tyr His Val Asp Ser Tyr Arg Ala Lys Tyr Glu Ser Ser Ser Leu
            180                 185                 190

Phe Gly Ile Val Gly Phe Ser Gly Gln Ala Ala Gln His Asp Glu Leu
        195                 200                 205

Asp Lys Phe Leu His Asp Phe Ala Pro Tyr Ser Thr Asn Ala Asn Phe
    210                 215                 220

Ser Ile Glu Ser Val Asn Gly Gly Gln Ser Pro Gln Gly Met Asn Glu
225                 230                 235                 240

Pro Ala Ser Glu Ala Asn Gly Asp Val Gln Tyr Ala Val Ala Met Gly
                245                 250                 255

Tyr His Val Pro Val Arg Tyr Tyr Ala Val Gly Gly Glu Asn His Asp
            260                 265                 270

Ile Ile Pro Asp Leu Asp Leu Val Asp Thr Thr Glu Glu Tyr Leu Glu
        275                 280                 285

Pro Phe Leu Glu Phe Ala Ser His Leu Leu Asp Leu Asp Asp Asp Glu
    290                 295                 300

Leu Pro Arg Val Val Ser Ile Ser Tyr Gly Ala Asn Glu Gln Leu Phe
305                 310                 315                 320

Pro Arg Ser Tyr Ala His Gln Val Cys Asp Met Phe Gly Gln Leu Gly
                325                 330                 335

Ala Arg Gly Val Ser Ile Val Val Ala Ala Gly Asp Leu Gly Pro Gly
```

```
            340                 345                 350

Val Ser Cys Gln Ser Asn Asp Gly Ser Ala Arg Pro Lys Phe Ile Pro
        355                 360                 365

Ser Phe Pro Ala Thr Cys Pro Tyr Val Thr Ser Val Gly Ser Thr Arg
    370                 375                 380

Gly Ile Met Pro Glu Val Ala Ala Ser Phe Ser Ser Gly Gly Phe Ser
385                 390                 395                 400

Asp Tyr Phe Ala Arg Pro Ala Trp Gln Asp Arg Ala Val Gly Ala Tyr
                405                 410                 415

Leu Gly Ala His Gly Glu Glu Trp Glu Gly Phe Tyr Asn Pro Ala Gly
            420                 425                 430

Arg Gly Phe Pro Asp Val Ala Ala Gln Gly Val Asn Phe Arg Phe Arg
        435                 440                 445

Ala His Gly Asn Glu Ser Leu Ser Ser Gly Thr Ser Leu Ser Ser Pro
    450                 455                 460

Val Phe Ala Ala Leu Ile Ala Leu Leu Asn Asp His Arg Ser Lys Ser
465                 470                 475                 480

Gly Met Pro Pro Met Gly Phe Leu Asn Pro Trp Ile Tyr Thr Val Gly
                485                 490                 495

Ser His Ala Phe Thr Asp Ile Ile Glu Ala Arg Ser Glu Gly Cys Pro
            500                 505                 510

Gly Gln Ser Val Glu Tyr Leu Ala Ser Pro Tyr Ile Pro Asn Ala Gly
        515                 520                 525

Trp Ser Ala Val Pro Gly Trp Asp Pro Val Thr Gly Trp Gly Thr Pro
    530                 535                 540

Leu Phe Asp Arg Met Leu Asn Leu Ser Leu Val
545                 550                 555


<210>  232
<211>  561
<212>  PRT
<213>  Trichoderma atroviride

<400>  232

Met Lys Ala Ser Arg Leu Leu Phe Phe Gly Val Asn Ala Thr Val Thr
1               5                   10                  15

Ala Ser Pro Ile Gln Gln Leu Gly Glu Ser Ser Lys Ala Ala Gln Val
            20                  25                  30
```

```
Val Lys Leu Ser Ile Ala Leu Gln Pro Glu Ser Arg Gln Leu Leu Glu
        35                  40                  45

Gln Thr Ile Tyr Asn Leu Ser Ser Pro Ser Gly Ser Arg Tyr Gly Gln
    50                  55                  60

Tyr Leu Gly Arg Glu Glu Ala Lys Gly Leu Leu Arg Pro Arg Lys Ser
65                  70                  75                  80

Ser Thr Asp Ala Val Lys Gly Trp Leu Ser Gln Ala Gly Ile Arg Ser
                85                  90                  95

Gly His Ile Leu Ser Asp Gly Gln Phe Ile His Val Gln Thr Asp Val
            100                 105                 110

Gly Ser Ile Glu Ala Leu Phe Glu Val Asn Tyr Asn Ala Thr Leu Gly
        115                 120                 125

Ser Gln Thr Val Ser Val Ser Ser Leu Pro Leu Arg Ile Gln Gly His
    130                 135                 140

Val Met Thr Val Gln Tyr Ala Pro Tyr Leu Thr Arg Val Arg Thr Asp
145                 150                 155                 160

Trp Glu Arg Cys Lys Thr Glu Ile Thr Pro Ala Cys Leu Lys Lys Leu
                165                 170                 175

Tyr His Val Asp Ser Tyr Gln Ala Lys Gly Glu Glu Arg Asn Leu Val
            180                 185                 190

Gly Val Ala Gly Phe Asp Gly Gln Ala Ile Gln Tyr His Glu Leu Gly
        195                 200                 205

Glu Phe Leu His Glu Leu Val Pro Pro Pro Ala Ala Phe Asn Val Ser
    210                 215                 220

Val Ala Phe Val Asn Gly Gly Thr Asn Pro Gln Gly Thr Asn Phe Pro
225                 230                 235                 240

Ser Ser Glu Ala Asn Gln Asp Val Gln Tyr Ala Val Gly Met Ala His
                245                 250                 255

Ser Val Pro Val Arg Phe Tyr Ala Thr Gly Gly Glu Asn His Asp Ile
            260                 265                 270

Ile Pro Asp Leu Asp Leu Thr Asp Pro Thr Asn Glu Tyr Leu Glu Pro
        275                 280                 285

Tyr Leu Glu Phe Ala Asn His Leu Leu Asn Leu Pro Asp Glu Gln Leu
    290                 295                 300
```

```
Pro Ser Val Ile Ser Ile Ser Tyr Gly Ala Asn Glu Gln Leu Phe Pro
305                 310                 315                 320

Lys Pro Tyr Ala Gln Gln Val Cys Asp Met Phe Gly Gln Leu Gly Thr
                325                 330                 335

Arg Gly Val Ser Ile Ile Val Ser Ser Gly Asp Phe Gly Pro Gly Met
            340                 345                 350

Ser Cys Gln Ser Asn Asp Gly Thr Glu Thr Thr Lys Tyr Ile Pro Ser
        355                 360                 365

Phe Pro Ala Thr Cys Pro Tyr Val Thr Ser Val Gly Ser Thr Glu Gly
    370                 375                 380

Ile Gly Pro Glu Arg Ala Ala Asn Phe Ser Ala Gly Gly Phe Ser Asp
385                 390                 395                 400

Tyr Phe Ala Arg Pro Glu Trp Gln Asp Glu Ala Val Gly Gly Tyr Leu
                405                 410                 415

Glu Leu Tyr Gly Asn Glu Trp Lys Gly Tyr Tyr Asn Ala Gly Gly Arg
            420                 425                 430

Gly Phe Pro Asp Val Ala Ala Gln Gly Val Asn Tyr Arg Phe Trp Asn
        435                 440                 445

His Gly Lys Glu Asp Leu Thr Thr Gly Thr Ser Val Ser Thr Pro Val
    450                 455                 460

Phe Ala Ala Leu Val Ala Leu Leu Asn Asp His Arg Ala Glu Arg Gly
465                 470                 475                 480

Leu Pro Arg Met Gly Phe Leu Asn Pro Trp Ile Tyr Ser Ile Gly Asn
                485                 490                 495

Gly Ala Phe Thr Asp Ile Thr Gln Ser Lys Ser Ile Gly Cys Gln Gly
            500                 505                 510

Gln Ser Leu Ser Gly Leu Ala Ser Pro Val Ile Pro Asn Ala Gly Trp
        515                 520                 525

Ser Ala Val Lys Gly Trp Asp Pro Val Thr Gly Trp Gly Thr Pro Leu
    530                 535                 540

Phe Asp Lys Met Met Ser Leu Ser Gly Gly Gly Val Asp Glu Glu Ser
545                 550                 555                 560

His
```

<210> 233
<211> 556
<212> PRT
<213> Trichoderma virens

<400> 233

```
Met Lys Ala Arg Leu Leu Phe Leu Ala Phe Asn Ala Leu Ala Met Ala
1               5                   10                  15

Thr Pro Met Ala Lys Pro Pro Leu Gly Thr Leu Lys Gly Val Gln Pro
            20                  25                  30

Ile Gln Ser Gly Lys Ile Ser Ile Ala Leu Gln Pro Glu Cys Arg Glu
        35                  40                  45

Leu Leu Glu Gln Thr Leu His Tyr Leu Ser Asp Pro Ser Ser Arg Arg
    50                  55                  60

Tyr Gly Gln Tyr Leu Gly Arg Glu Glu Ala Lys Ala Leu Leu Arg Pro
65                  70                  75                  80

Arg Gln Asp Ser Thr Asp Ala Val Lys Gly Trp Leu Ser Gln Ala Gly
                85                  90                  95

Ile Pro Ala Ile Asp Ile Gln Ser Asp Gly Gln Phe Ile Asn Val Gln
            100                 105                 110

Val Met Ala Glu Gln Ala Arg Ala Leu Leu Gly Thr Gly Tyr Asn Ser
        115                 120                 125

Thr Leu Gly Ile Gln Thr Ile Pro Ile Ser Ser Leu Pro Lys Asp Ile
    130                 135                 140

Glu Ser His Val Met Thr Ile His Tyr Ala Pro Thr Arg Thr Glu Met
145                 150                 155                 160

Val Thr Asp Trp Glu Glu Cys Lys Ser Arg Ile Thr Pro Asn Cys Leu
                165                 170                 175

Lys Lys Leu Tyr His Val Asp Gly Tyr Arg Ala Arg His Val Asn Lys
            180                 185                 190

Asn Arg Phe Gly Ile Val Gly Phe Thr Gly Gln Ala Ala Gln Tyr Asp
        195                 200                 205

Gln Leu Ser Ala Phe Leu Asp Asp Phe Ala Pro Tyr Ala Ala Asn Ala
    210                 215                 220

Asn Phe Ser Val Glu Ser Val Asn Gly Gly Glu Asn Pro Gln Gly Arg
225                 230                 235                 240
```

```
Asn Glu Pro Thr Gly Glu Ala Asn Val Asp Ile Gln Tyr Ala Val Ser
                245                 250                 255

Met Ala Tyr Asp Val Pro Val Arg Phe Tyr Ala Thr Gly Gly Ala Asn
            260                 265                 270

His Asp Ile Ile Pro Asp Leu Asp Leu Ser Asp Thr Asp Asn Gln Ala
        275                 280                 285

Leu Glu Pro Tyr Leu Glu Phe Ala Ser His Leu Leu Ser Leu Asp Asp
    290                 295                 300

Asp Glu Leu Pro Lys Val Val Ser Ile Ser Tyr Gly Ala Asn Glu Gln
305                 310                 315                 320

Leu Phe Pro Arg Ser Tyr Ala Gln Gln Val Cys Asp Met Phe Gly Gln
                325                 330                 335

Leu Gly Thr Arg Gly Val Ser Ile Val Val Ala Ser Gly Asn Leu Gly
            340                 345                 350

Pro Gly Val Ser Cys Gln Ser Asn Asp Gly Thr Lys Arg Pro Lys Phe
        355                 360                 365

Met Pro Ser Phe Pro Ala Thr Cys Pro Tyr Val Thr Ser Val Gly Ala
    370                 375                 380

Thr Tyr Gly Ile Asn Pro Glu Ile Ala Val Asn Phe Ser Ser Gly Gly
385                 390                 395                 400

Phe Ser Asp Tyr Phe Ile Arg Pro Gln Trp Gln Asp Glu Ala Ile Glu
                405                 410                 415

Gly Tyr Leu Lys Leu His Gly Arg Glu Trp Lys Gly Tyr Tyr Asn Pro
            420                 425                 430

His Gly Arg Gly Phe Pro Asp Val Ala Ala Gln Gly Val Asn Tyr Arg
        435                 440                 445

Phe Trp Ser His Gly Asn Glu Asp Ser Ala Ser Gly Thr Ser Val Ser
    450                 455                 460

Ser Pro Val Phe Ala Ala Leu Ile Ala Leu Leu Asn Asp Asn Arg Thr
465                 470                 475                 480

Lys Asn Gly Leu Pro Ser Met Gly Phe Leu Asn Pro Trp Ile Tyr Ser
                485                 490                 495

Ile Gly Ser His Ala Phe Thr Asp Ile Thr Glu Ser Lys Ser Leu Gly
            500                 505                 510
```

```
Cys Ser Gly Arg Ser Val Ile Gly Leu Glu Ser Pro Val Ile Pro Asn
        515                 520                 525


Ala Gly Trp Asp Ala Val Pro Gly Trp Asp Pro Val Thr Gly Trp Gly
    530                 535                 540


Thr Pro Leu Phe Asp Arg Leu Met Asn Leu Ser Tyr
545                 550                 555


<210>  234
<211>  592
<212>  PRT
<213>  Metarhizium anisopliae

<400>  234

Met Ser Ile Leu Gly Leu Leu Cys Val Leu Gly Ser Ile Phe Leu Val
1               5                   10                  15


Val Ser Ala Asp Leu Val Val Val Glu His Leu Asp Gln Pro Pro Asp
            20                  25                  30


Gly Trp Thr Lys Leu Gly Ala Ala Asn Ala Ser Gln Leu Ile Arg Leu
        35                  40                  45


Ser Ile Ala Leu Glu Ser Gln Gly His Asp Val Phe Glu Arg Thr Leu
    50                  55                  60


Gln Glu Val Ser Asp Pro Thr His Pro Arg Tyr Gly Gln Tyr Leu Ser
65                  70                  75                  80


Arg Asp Glu Ala Val Ala Leu Val Arg Pro Arg Pro Arg Ser Val Ala
                85                  90                  95


Ala Val Arg Glu Trp Leu Leu Ser Glu Asn Val Thr Gln Gly Gln Val
            100                 105                 110


Gln Glu Arg Gly Leu Phe Val Asp Ala Phe Met Thr Ile Gly Thr Ala
        115                 120                 125


Glu Asn Leu Leu Ser Thr Thr Tyr Gly Leu Phe Arg His Gly Lys Gln
    130                 135                 140


Arg Ala Ile Gly Ala Leu Ala Tyr Ser Val Pro Ala Glu Val Arg Pro
145                 150                 155                 160


His Ile Thr Ser Ile Gln Pro Thr Thr Phe Phe Glu Phe Gly Asn Leu
                165                 170                 175


Phe Lys Lys Ser Pro Arg Thr Ser Gly Val Gly Ile Ala Thr Ala Arg
            180                 185                 190
```

```
Arg Arg Asn Pro Gly Val Arg Ala Arg Ser Thr Glu Leu Gln Asp Cys
        195                 200                 205

Glu Asn His Asn Thr Pro Glu Cys Leu Arg Gly Leu Tyr Lys Met Ser
    210                 215                 220

Asn Asp Tyr Thr Lys Pro His Arg Ser Ser Leu Leu Gly Val Ala Gly
225                 230                 235                 240

Phe His Gly Gln Ala Ala Gln His Asp Gln Leu Glu Lys Tyr Leu Asp
                245                 250                 255

Thr Tyr Ala Pro Tyr Ala Lys Gly Ala Asn Phe Ser Val Glu Leu Ile
            260                 265                 270

Asn Asn Gly Thr Asn Pro Gln Gly Glu Tyr Pro Gly Phe Glu Ala Asn
        275                 280                 285

Met Asp Ile Gln Ile Ala Val Ser Met Ala Phe Arg Val Pro Val Arg
    290                 295                 300

Phe Tyr Ser Thr Gly Gly Glu Gly His Glu Phe Ile Pro Asp Leu Asp
305                 310                 315                 320

Val Tyr Asp Pro Glu Lys Gln His Leu Glu Pro Trp Leu Gln Phe Ala
                325                 330                 335

Ser Tyr Leu Leu Asp Leu Pro Asp Arg Asp Leu Pro Gln Val Met Ser
            340                 345                 350

Ile Ser Tyr Gly Gly Asn Glu Gln Ala Val Pro Lys Pro Tyr Ala Arg
        355                 360                 365

Arg Ile Cys Gln Met Phe Gly Leu Leu Ala Leu Arg Gly Val Ser Ile
    370                 375                 380

Ile Leu Ala Ser Gly Asp Gln Gly Pro Gly Met Ser Cys Gln Ser Asn
385                 390                 395                 400

Asp Gly Thr Asn Ser Thr Lys Phe Leu Pro Ala Phe Pro Ala Gly Cys
                405                 410                 415

Pro Tyr Leu Thr Val Val Gly Ala Thr Glu Arg Asn Ala Pro Glu Arg
            420                 425                 430

Ala Met Asn Phe Ser Ser Gly Gly Phe Ser Glu Tyr Trp Pro Arg Pro
        435                 440                 445

Ala Trp Gln Glu Ala Ala Val Ser Arg Tyr Leu Asp Ala His Gly Asp
    450                 455                 460
```

```
Arg Trp Lys Gly Tyr Tyr Asn Arg Ala Gly Arg Gly Phe Pro Asp Val
465                 470                 475                 480

Ser Ala Gln Gly Ile Gly Tyr Pro Phe Phe Asn His Gly Gly Asn Ala
                485                 490                 495

Ser Gly Gly Gly Thr Ser Ala Ser Ala Pro Leu Phe Ala Ser Met Ile
            500                 505                 510

Ala Val Ile Asn Asp Ser Arg Met Lys Arg Gly Lys Pro Pro Leu Gly
        515                 520                 525

Phe Leu Asn Pro Trp Leu Tyr Leu Gly Ala Ser Arg Ala Phe Thr Glu
    530                 535                 540

Ser Glu Gly Cys Lys Gly Thr Ser Phe Ser Gly Ala Lys Ala Pro Val
545                 550                 555                 560

Ile Pro Gly Ala Gly Trp Asp Ala Val Glu Gly Trp Asp Pro Val Thr
                565                 570                 575

Gly Leu Gly Thr Pro Leu Phe Asp Glu Leu Gln Glu Leu Ala Met Gly
            580                 585                 590
```

<210> 235
<211> 603
<212> PRT
<213> Nectria haematococca

<400> 235

```
Met Met Ala Ile Ser Leu Leu Lys Thr Trp Gly Phe Leu Leu Leu Thr
1               5                   10                  15

Ala Thr Ala Val Ala Arg Pro Val Val Val Glu Ser Leu Asp Glu Thr
            20                  25                  30

Pro Glu Gly Trp Glu Glu Ser Ser Ser Pro Ala Pro Asp Lys Pro Ile
        35                  40                  45

Glu Phe Ser Ile Gly Leu Glu Ser Glu Asp His Phe Leu Leu Glu Arg
    50                  55                  60

Thr Leu Ser Glu Ile Ser Asp Pro Ser His Ala Asn Tyr Gly Lys His
65                  70                  75                  80

Leu Ser Arg Asp Ala Ala Lys Ala Leu Leu His Pro Ser Arg Ala Ala
                85                  90                  95

Thr Asp Ser Val Lys Arg Trp Leu Ser Asp Ala Gly Val Pro Glu His
            100                 105                 110

His Val Arg Asp Glu Gly Gln Trp Leu His Ile Arg Thr Thr Val Gly
```

```
        115                 120                 125

Gln Ala Asp Ser Leu Leu Ser Thr Arg Phe Gly Ile Phe Ala Arg Asp
    130                 135                 140

Asp Glu Gln Val Val Arg Thr Arg Glu Tyr Ser Val Pro Ile Glu Val
145                 150                 155                 160

Arg Asp His Ile Thr Thr Ile Gln Pro Thr Thr Phe Phe Pro Thr Glu
                165                 170                 175

Lys Lys Ala Arg Ala Val Glu Asp Leu Thr Ala Leu Glu Lys Arg Glu
            180                 185                 190

Glu Ala Val Glu Ala Arg Ala Tyr Gly Asn Asn Asn Asp Gly Asn His
        195                 200                 205

Gly Gly Asn Gly Pro Ile Asp Leu Gln Gln Cys Lys Ala Gln Leu Thr
    210                 215                 220

Pro Ala Cys Leu Arg Lys Ile Tyr Lys Met Pro Leu Arg Ser Tyr Pro
225                 230                 235                 240

Ser Ala His Arg Lys Ser Glu Tyr Gly Ile Val Gly Phe Leu Glu Gln
                245                 250                 255

Asn Ala Gln Phe Ser Asp Leu Glu Glu Phe Leu Lys Arg Phe Ala Pro
            260                 265                 270

Asp Leu Lys Gly Ala Asn Phe Ser Val Ser Leu Val Asn Gly Gly Leu
        275                 280                 285

Asn Gln Gln Ser Phe Asn Val Ala Gln Ile Glu Ala Asn Met Asp Ile
    290                 295                 300

Gln Tyr Ala Val Ala Leu Ala Asp Lys Val Pro Val Arg Phe Ile Ser
305                 310                 315                 320

Val Gly Gly Met Asn Pro Asn Leu Val Pro Asp Leu Glu Gln Tyr Pro
                325                 330                 335

Glu Pro Trp Leu Glu Leu Leu Gln Tyr Leu Leu Asn Leu Pro Asn Ser
            340                 345                 350

Asn Leu Pro Lys Val Ile Ser Leu Ser Tyr Gly Ser Asn Glu Gln His
        355                 360                 365

Ile Ser Lys Ser Tyr Ala Arg Gln Val Cys Asn Met Phe Gly Gln Leu
    370                 375                 380

Gly Thr Arg Gly Val Ser Val Ile Ala Ala Ala Gly Asn Thr Gly Pro
```

385 390 395 400

Gly Phe Ser Cys Lys Pro Asn Asp Gly Lys Asn Lys Lys Lys Phe Leu
405 410 415

Pro Thr Phe Pro Gly Ala Cys Pro Tyr Val Thr Ser Val Gly Gly Thr
420 425 430

Glu Gly Asn Ser Pro Glu Ile Ala Trp Asn Arg Ser Ser Gly Gly Phe
435 440 445

Ser Glu Val Phe Ser Arg Pro Trp Trp Gln Glu Gln Thr Val Lys Glu
450 455 460

Tyr Leu Arg Lys His Gly Asn Glu Trp Lys Gly Tyr Tyr Asn Ala Asn
465 470 475 480

Gly Arg Ala Tyr Pro Asp Val Ala Ala Leu Ala Trp Asn His Gln Ile
485 490 495

Met Leu Arg Gly Asn Gln Thr Phe Gly Gly Gly Thr Ser Val Ala Ala
500 505 510

Pro Thr Phe Gly Ala Met Ile Ala Leu Ile Asn Asn Glu Arg Phe Lys
515 520 525

Lys Gly Lys Pro Pro Met Gly Phe Leu Asn Pro Trp Leu Tyr Lys Thr
530 535 540

Gly Lys Ala Gly Phe Thr Asp Ile Thr Gln Gly Lys Ser Val Gly Cys
545 550 555 560

Thr Gly Glu Ser Tyr Leu Gly Leu Pro Ser Pro Val Ile Pro Ser Ala
565 570 575

Gly Trp Lys Ala Val Lys Gly Trp Asp Pro Ile Thr Gly Trp Gly Thr
580 585 590

Pro Leu Phe Asp Arg Leu Gln Arg Leu Ala Thr
595 600

<210> 236
<211> 621
<212> PRT
<213> Myceliophthora thermophila

<400> 236

Met Leu Arg Asn Ile Phe Leu Thr Ala Ala Leu Ala Ala Phe Gly Gln
1 5 10 15

Cys Gly Ser Thr Val Phe Glu Ser Val Pro Ala Lys Pro Arg Gly Trp
20 25 30

```
Thr Arg Leu Gly Asp Ala Ser Ala Asp Gln Pro Leu Arg Leu Arg Ile
        35                  40                  45

Ala Leu Gln Gln Pro Asn Glu Asp Leu Phe Glu Arg Thr Leu Tyr Glu
    50                  55                  60

Val Ser Asp Pro Ser His Ala Arg Tyr Gly Gln His Leu Ser Arg Asp
65                  70                  75                  80

Glu Leu Ser Ala Leu Leu Ala Pro Arg Ala Glu Ser Thr Ala Ala Val
                85                  90                  95

Leu Asn Trp Leu Arg Asp Ala Gly Ile Pro Ser Asp Lys Ile Glu Glu
            100                 105                 110

Asp Gly Glu Trp Ile Asn Leu Arg Val Thr Val Arg Glu Ala Ser Glu
        115                 120                 125

Leu Leu Asp Ala Asp Phe Gly Val Trp Ala Tyr Glu Gly Thr Asn Val
    130                 135                 140

Lys Arg Val Arg Ala Leu Gln Tyr Ser Val Pro Glu Glu Ile Ala Pro
145                 150                 155                 160

His Ile Arg Met Val Ala Pro Val Val Arg Phe Gly Gln Ile Arg Pro
                165                 170                 175

Glu Arg Ser Gln Val Phe Glu Val Val Glu Thr Ala Pro Ser Gln Val
            180                 185                 190

Lys Val Ala Ala Ala Ile Pro Pro Gln Asp Leu Asp Val Lys Ala Cys
        195                 200                 205

Asn Thr Ser Ile Thr Pro Glu Cys Leu Arg Ala Leu Tyr Lys Val Gly
    210                 215                 220

Ser Tyr Gln Ala Glu Pro Ser Lys Lys Ser Leu Phe Gly Val Ala Gly
225                 230                 235                 240

Tyr Leu Glu Gln Trp Ala Lys Tyr Asp Gln Leu Glu Leu Phe Ala Ser
                245                 250                 255

Thr Tyr Ala Pro Tyr Ala Ala Asp Ala Asn Phe Thr Ser Val Gly Val
            260                 265                 270

Asn Gly Gly Glu Asn Asn Gln Gly Pro Ser Asp Gln Gly Asp Ile Glu
        275                 280                 285

Ala Asn Leu Asp Ile Gln Tyr Ala Val Ala Leu Ser Tyr Lys Thr Pro
    290                 295                 300
```

```
Ile Thr Tyr Tyr Ile Thr Gly Gly Arg Gly Pro Leu Val Pro Asp Leu
305                 310                 315                 320

Asp Gln Pro Asp Pro Asn Asp Val Ser Asn Glu Pro Tyr Leu Glu Phe
                325                 330                 335

Phe Ser Tyr Leu Leu Lys Leu Pro Asp Ser Glu Leu Pro Gln Thr Leu
            340                 345                 350

Thr Thr Ser Tyr Gly Glu Asp Glu Gln Ser Val Pro Arg Pro Tyr Ala
        355                 360                 365

Glu Lys Val Cys Gln Met Ile Gly Gln Leu Gly Ala Arg Gly Val Ser
    370                 375                 380

Val Ile Phe Ser Ser Gly Asp Thr Gly Val Gly Ser Ala Cys Gln Thr
385                 390                 395                 400

Asn Asp Gly Lys Asn Thr Thr Arg Phe Leu Pro Ile Phe Pro Gly Ala
                405                 410                 415

Cys Pro Tyr Val Thr Ser Ile Gly Ala Thr Arg Tyr Val Glu Pro Glu
            420                 425                 430

Gln Ala Ala Ala Phe Ser Ser Gly Gly Phe Ser Asp Ile Phe Lys Arg
        435                 440                 445

Pro Ala Tyr Gln Glu Ala Ala Val Ser Thr Tyr Leu His Lys His Leu
    450                 455                 460

Gly Ser Arg Trp Lys Gly Leu Tyr Asn Pro Gln Gly Arg Gly Phe Pro
465                 470                 475                 480

Asp Val Ser Ala Gln Gly Val Ala Tyr His Val Phe Ser Gln Asp Lys
                485                 490                 495

Asp Ile Lys Val Ser Gly Thr Ser Ala Ser Ala Pro Leu Phe Ala Ala
            500                 505                 510

Leu Val Ser Leu Leu Asn Asn Ala Arg Leu Ala Gln Gly Arg Pro Pro
        515                 520                 525

Leu Gly Phe Leu Asn Pro Trp Leu Tyr Ser Glu Lys Val Gln Lys Ala
    530                 535                 540

Gly Ala Leu Thr Asp Ile Val His Gly Gly Ser Ser Gly Cys Thr Gly
545                 550                 555                 560

Lys Asp Met Tyr Ser Gly Leu Pro Thr Pro Tyr Val Pro Tyr Ala Ser
                565                 570                 575
```

```
Trp Asn Ala Thr Pro Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro
            580                 585                 590

Val Phe Asp Lys Leu Leu Glu Leu Ser Ser Pro Gly Lys Lys Leu Pro
        595                 600                 605

His Ile Gly Gly Gly His Gly His Gly Ala Gly Gly His
    610                 615                 620
```

<210> 237
<211> 613
<212> PRT
<213> Gibberella zeae

<400> 237

```
Met Leu Ala Ile Asn Leu Leu Lys Thr Gly Gly Phe Leu Phe Ser Ala
1               5                   10                  15

Ala Ser Val Leu Ala Val Pro Val Val Val Glu Ser Leu Asn Glu Thr
            20                  25                  30

Pro Ala Gly Trp Glu Glu Ser Asp Ser Pro Ser Pro Asp Glu Phe Ile
        35                  40                  45

Asn Leu Ser Ile Gly Leu Glu Pro Glu Asp His Lys Leu Leu Glu Arg
    50                  55                  60

Thr Ile Tyr Glu Val Ser Asp Pro Asp His His Asn Tyr Gly Lys His
65                  70                  75                  80

Leu Ser Arg Glu Ser Ala Lys Ala Leu Leu Arg Pro Ser Ser Ala Ala
                85                  90                  95

Thr Lys Ser Val Glu Arg Trp Leu Ser Glu Ala Gly Val Pro Asp His
            100                 105                 110

His Val Arg Asp Glu Gly Glu Trp Leu His Ile Gln Thr Thr Val Lys
        115                 120                 125

Asn Ala Glu Gly Met Leu Asn Thr Arg Phe Ser Val Phe Ala Arg Asp
    130                 135                 140

Asp Arg Ser Ile Val Arg Thr Arg Glu Tyr Ser Val Pro His Glu Ile
145                 150                 155                 160

Arg Arg His Ile Ser Ser Ile Gln Pro Thr Thr Leu Phe Ser Ser Phe
                165                 170                 175

Gln His Thr Gln Ser Leu Glu Glu Thr Ala Pro Thr Val Met Lys Arg
            180                 185                 190
```

```
Tyr Val Gln Gly Glu Lys Glu Pro Arg Ser Thr Lys Asn Gly Asn Tyr
        195                 200                 205

Gly Gly Pro Gly Pro Val Asp Leu Lys Lys Cys Lys Thr Glu Ala Thr
    210                 215                 220

Pro Ala Cys Ile Arg Lys Leu Tyr Asn Leu Pro Lys Lys Tyr Pro Asn
225                 230                 235                 240

Ala Ala Lys Gly Ser Leu Tyr Thr Thr Val Ser Phe Gln Asn Met Thr
                245                 250                 255

Ser Gln Arg Asp Glu Leu Gln Glu Phe Leu Arg Arg Tyr Ala Pro Asp
            260                 265                 270

Leu Lys Gly Val Thr Phe Ala Asp Asp Phe Ala Asn Gly Gly Lys Asn
        275                 280                 285

Thr Gln Gly Asp Asn Val Pro Glu Asn Glu Gly Asn Leu Asn Thr Gln
    290                 295                 300

Tyr Ala Val Ser Leu Ala Ser Arg Val Pro Ile Gln His Leu Ala Val
305                 310                 315                 320

Gly Gly Ile Asn Thr Asp Tyr Ile Ser Asp Leu Asp Leu Pro Pro Gly
                325                 330                 335

Gln Gly Ile Glu Thr Trp Leu Glu Phe Ala Glu His Ile Leu Asn Leu
            340                 345                 350

Pro Thr Lys Lys Leu Pro Ser Val Ile Ser Ile Ser Trp Gly Glu Tyr
        355                 360                 365

Glu Gln His Leu Pro Lys Lys Tyr Ala Arg Gln Val Cys Asn Lys Phe
    370                 375                 380

Gly Gln Ile Gly Thr Arg Gly Val Ser Ile Ile Val Pro Ala Gly Asn
385                 390                 395                 400

Gln Gly Val Gly Val Ala Cys Gln Ser Asn Asp Gly Lys Lys Thr Lys
                405                 410                 415

Lys Phe Leu Pro Thr Trp Pro Ser Ala Cys Pro Tyr Val Thr Thr Val
            420                 425                 430

Gly Gly Thr Gly Gly Asn Asn Pro Glu Ile Ala Leu Ser Asp Gly Glu
        435                 440                 445

Gly Glu Pro Phe Ser Thr Gly Gly Gly Phe Ser Asp Leu Phe Pro Arg
    450                 455                 460
```

```
Pro Glu Tyr Gln Glu Lys Ala Val Lys Glu Tyr Leu Lys Lys Tyr Gly
465                 470                 475                 480

Lys Lys Trp Gln Ala Tyr Tyr Asn Pro Lys Gly Arg Ala Tyr Pro Asp
                485                 490                 495

Val Ala Ala Ile Ala Ala Glu Leu Pro Val Met Val Arg Gly Glu Val
            500                 505                 510

Arg Pro Ala Thr Gly Thr Ser Ala Ala Ala Pro Thr Phe Gly Ala Ile
        515                 520                 525

Val Ala Leu Leu Ser Asn Glu Arg Leu Arg Lys Gly Lys Pro Ala Met
    530                 535                 540

Gly Phe Leu Asn Pro Trp Ile Tyr Lys Lys Gly Tyr Lys Gly Phe Thr
545                 550                 555                 560

Asp Ile Val Asp Gly Arg Asn Tyr Gly Cys Gln Gly Phe Ser Leu Gln
                565                 570                 575

Asp Thr Leu Ala Pro Glu Ile Pro Gly Ala Gly Trp Glu Ala Val Lys
            580                 585                 590

Gly Trp Asp Pro Val Ser Gly Phe Gly Thr Pro Leu Tyr Asp Lys Leu
        595                 600                 605

Glu Lys Leu Ala Leu
    610


<210>  238
<211>  610
<212>  PRT
<213>  Thielavia terrestris

<400>  238

Met Leu Gln Gln Leu Phe Val Thr Ala Ala Leu Ala Ala Leu Gly Gln
1               5                   10                  15

Cys Gly Leu Thr Val Leu Glu Ser Leu Pro Ala Gln Pro Arg Gly Trp
            20                  25                  30

Thr Arg Val Gly Asp Ala Ser Pro Asp His Thr Leu Lys Leu Arg Ile
        35                  40                  45

Ala Leu His Gln Pro Asn Glu Ala Leu Phe Glu Arg Thr Leu Tyr Glu
    50                  55                  60

Ile Ser Asp Pro Phe His Ala Lys Tyr Gly Gln His Leu Ser Arg Asp
65                  70                  75                  80
```

```
Glu Leu Ser Ala Leu Met Ala Pro Arg Ala Glu Ser Thr Ser Ala Val
                85                  90                  95

Val Ser Trp Leu Arg Asp Ala Gly Ile Ala Ser Ser Asn Ile Glu Glu
            100                 105                 110

Asp Gly Glu Trp Ile His Val Lys Met Thr Val Arg Glu Ala Ser Ala
        115                 120                 125

Leu Leu Asp Ala Asp Phe Gly Leu Trp Ala His Asp Gly Thr Asn Val
    130                 135                 140

Lys Arg Val Arg Ala Leu Lys Tyr Ser Val Pro Asp Glu Val Val Glu
145                 150                 155                 160

His Val Lys Met Val Ala Pro Ile Val Arg Phe Gly Gln Met Arg Pro
                165                 170                 175

Gln Arg Ser Gln Ile Phe Glu Val Val Asp Ser Lys Thr Pro Glu Pro
            180                 185                 190

Lys Ala Ala Ala Ile Pro Pro Gln Thr Leu Asn Ala Thr Ala Cys Asn
        195                 200                 205

Ala Thr Ile Thr Pro Glu Cys Leu Arg Ala Leu Tyr Asn Val Gly Ser
    210                 215                 220

Tyr Gln Ala Asp Pro Ser Glu His Ser Leu Phe Gly Val Ser Gly Tyr
225                 230                 235                 240

Leu Glu Glu Trp Ala Lys Tyr Asp Gln Leu Glu Leu Phe Thr His Thr
                245                 250                 255

Tyr Ala Pro Tyr Ala Ala Glu Ser Asn Phe Thr Ala Val Leu Val Asn
            260                 265                 270

Gly Gly Val Asn Asn Gln Gly Pro Ser Thr Gln Asp Asp Ile Glu Ala
        275                 280                 285

Asn Leu Asp Ile Gln Tyr Ala Val Ala Met Ser Tyr Lys Thr Pro Ile
    290                 295                 300

Asn Tyr Tyr Ser Thr Gly Gly Arg Gly Pro Val Val Pro Asp Leu Thr
305                 310                 315                 320

Glu Pro Asp Pro Asn Asp Ser Ser Asn Glu Pro Tyr Leu Asp Phe Phe
                325                 330                 335

Gly Tyr Leu Leu Lys Leu Pro Asp Ser Glu Leu Pro Gln Thr Leu Ser
            340                 345                 350
```

```
Thr Ser Tyr Gly Glu Asp Glu Gln Ser Val Pro Arg Ala Phe Ala Glu
        355                 360                 365

Lys Val Cys Gln Met Ile Gly Gln Leu Gly Ala Arg Gly Val Ser Val
    370                 375                 380

Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Ser Gly Cys Gln Thr Asn
385                 390                 395                 400

Asp Gly Lys Asn Thr Thr Arg Phe Leu Pro Ile Phe Pro Ala Ala Cys
                405                 410                 415

Pro Tyr Val Thr Ser Val Gly Ala Thr Arg Tyr Val Asn Pro Glu Tyr
            420                 425                 430

Ala Val Ser Phe Ser Ser Gly Gly Phe Ser Asp Ile Phe Pro Arg Pro
        435                 440                 445

Leu Tyr Gln Glu Leu Ala Val Thr Ser Tyr Leu Thr Gln His Leu Gly
    450                 455                 460

Lys Arg Trp Ala Gly Leu Tyr Asn Pro Gly Gly Arg Gly Phe Pro Asp
465                 470                 475                 480

Val Ala Ala Gln Gly Val Arg Tyr His Val Phe Ser Gly Gly Arg Asp
                485                 490                 495

Val Leu Val Ser Gly Thr Ser Ala Ser Ala Pro Leu Phe Ala Ser Leu
            500                 505                 510

Val Ser Leu Leu Asn Asn Ala Arg Leu Ala Arg Gly Leu Pro Pro Leu
        515                 520                 525

Gly Phe Leu Asn Pro Trp Leu Tyr Ala Val Gly Trp Ala Gly Leu Thr
    530                 535                 540

Asp Ile Gln His Gly Gly Ser Thr Gly Cys Thr Ala Asn Asp Ser Ser
545                 550                 555                 560

Ser Gly Val Pro Thr Pro Tyr Val Pro Tyr Ala Ser Trp Asn Ala Thr
                565                 570                 575

Pro Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro Asn Leu Glu Lys
            580                 585                 590

Leu Leu Asp Leu Ser Thr Pro Gly Trp Arg Leu Pro Arg Ile Gly Asp
        595                 600                 605

Trp Lys
    610
```

<210> 239
<211> 623
<212> PRT
<213> Magnaporthe oryzae

<400> 239

```
Met Glu Pro Thr Glu Pro Tyr Pro Tyr Pro Arg Gly Pro Thr Pro Pro
1               5                  10                  15

Phe Val Ile Ala Tyr Ala Ala Leu Ala Thr Val Leu Pro Leu Ser Ala
            20                  25                  30

Ser Ala Ala Ser Asn Val Val Val Glu Ser Leu Pro Ala Val Pro Glu
        35                  40                  45

Gly Trp Glu Lys Ile Gln Asp Ala Asp Pro Asp Ser Lys Ile Arg Leu
    50                  55                  60

Lys Val Ala Leu Arg Gln Pro Asn Leu Ala Leu Phe Glu Arg Glu Met
65                  70                  75                  80

Tyr Ala Val Ser Ser Pro Leu Ser Ala Arg Tyr Gly Lys His Leu Lys
                85                  90                  95

Arg Glu Glu Val Arg Asp Leu Met Lys Pro Asp Pro Ala Ser Thr Ser
            100                 105                 110

Thr Val Met Gln Trp Leu Glu Asn Ala Gly Ile Pro Ser Gln Ala Ile
        115                 120                 125

His Glu Asp Ser Asp Trp Ile Asn Ile Val Thr Ser Val Arg Asn Ala
    130                 135                 140

Ser Ala Leu Leu Lys Ala Asp Phe Gly Val Tyr Gly His Ala Asn Ser
145                 150                 155                 160

Asp Leu Lys Lys Ile Arg Ala Leu Glu Tyr Ser Val Pro Asp Asn Val
                165                 170                 175

Arg Asp His Ile Thr Met Val Ala Pro Ile Ile Arg Phe Gly Glu Ile
            180                 185                 190

Lys Pro Lys Arg Ser Ile Val Lys Ser Val Glu Asp Ser Lys Gly Ser
        195                 200                 205

Ile Gln Ala Ala Glu Val Pro Thr Gly Gln Leu Asp Val Ala Ala Cys
    210                 215                 220

Asn Lys Thr Ile Thr Pro Glu Cys Leu Arg Ala Leu Tyr Gln Ile Gly
225                 230                 235                 240

Asp Tyr Lys Ala Thr Gly Ser Pro Lys Ser Arg Phe Gly Ile Ala Gly
```

```
                245                 250                 255

Tyr Leu Glu Glu Tyr Ala Arg Tyr Ser Glu Leu Glu Lys Phe Gln Glu
            260                 265                 270

Val Tyr Ala Pro Tyr Thr Leu Gly Ser Asn Phe Ser Val Val Thr Ile
        275                 280                 285

Asn Gly Gly Leu Asn Asp Gln Ser Ser Thr Ala Asp Ser Val Glu Ala
    290                 295                 300

Asn Leu Asp Met Gln Tyr Gly Val Ala Leu Gly Tyr Asn Thr Asn Ile
305                 310                 315                 320

Val Tyr Tyr Ser Thr Gly Gly Arg Gly Pro Leu Val Pro Asp Leu Asp
                325                 330                 335

Gln Pro Asn Gly Asn Asp Ser Ser Asn Glu Pro Tyr Leu Asp Phe Leu
            340                 345                 350

Glu Tyr Met Lys Asn Leu Pro Asp Asp Glu Leu Pro Gln Thr Leu Thr
        355                 360                 365

Thr Ser Tyr Gly Glu Asn Glu Gln Ser Val Pro Arg Glu Phe Ala Val
    370                 375                 380

Lys Val Cys Asn Met Phe Gly Glu Leu Gly Ala Arg Gly Val Ser Ile
385                 390                 395                 400

Phe Phe Ser Ser Gly Asp Glu Gly Pro Gly Ser Ala Cys Gln Ser Asn
                405                 410                 415

Asp Gly Lys Asn Thr Thr Arg Phe Asp Pro Ala Phe Pro Ala Ala Cys
            420                 425                 430

Pro Tyr Val Thr Ala Val Gly Gly Thr Arg Tyr Val Ala Pro Glu Thr
        435                 440                 445

Gly Ala Ala Leu Ala Gly Gly Gly Phe Ser Asp Ile Trp Pro Gln Pro
    450                 455                 460

Glu Trp Gln Lys Thr Ala Val Glu Lys Tyr Leu Ser Ile Leu Gly Asp
465                 470                 475                 480

Lys Trp Lys Gly Leu Tyr Asn Pro Ser Gly Arg Ala Tyr Pro Asp Ile
                485                 490                 495

Ala Gly Gln Ala Tyr Ser Tyr His Val Phe Asp Ser Gly Lys Asp Val
            500                 505                 510

Leu Val Ala Gly Thr Ser Ala Ser Ser Pro Ser Val Ala Ala Ile Phe
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515 520 525

Ala Leu Leu Asn Asp Ala Arg Leu Ala Ala Asn Gln Pro Pro Met Gly
530 535 540

Trp Ile Asn Pro Trp Leu Tyr Glu Ile Gly Leu Lys Gly Leu Thr Asp
545 550 555 560

Ile Thr Val Gly Gly Ser Arg Gly Cys Thr Gly Lys Ser Ile Tyr Ser
565 570 575

Gly Leu Pro Ala Pro Lys Val Pro Phe Ala Ser Trp Asn Ala Thr Glu
580 585 590

Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro Leu Phe Asn Lys Leu
595 600 605

Leu Glu Leu Ser Thr Pro Gly Ala Gln Ala Gln Lys Ile Ala Asn
610 615 620

<210> 240
<211> 388
<212> PRT
<213> Trichoderma reesei

<400> 240

Met Ala Trp Leu Lys Lys Leu Ala Leu Val Leu Leu Ala Ile Val Pro
1 5 10 15

Tyr Ala Thr Ala Ser Pro Ala Leu Ser Pro Arg Ser Arg Glu Ile Leu
20 25 30

Ser Leu Glu Asp Leu Glu Ser Glu Asp Lys Tyr Val Ile Gly Leu Lys
35 40 45

Gln Gly Leu Ser Pro Thr Asp Leu Lys Lys His Leu Leu Arg Val Ser
50 55 60

Ala Val Gln Tyr Arg Asn Lys Asn Ser Thr Phe Glu Gly Gly Thr Gly
65 70 75 80

Val Lys Arg Thr Tyr Ala Ile Gly Asp Tyr Arg Ala Tyr Thr Ala Val
85 90 95

Leu Asp Arg Asp Thr Val Arg Glu Ile Trp Asn Asp Thr Leu Glu Lys
100 105 110

Pro Pro Trp Gly Leu Ala Thr Leu Ser Asn Lys Lys Pro His Gly Phe
115 120 125

Leu Tyr Arg Tyr Asp Lys Ser Ala Gly Glu Gly Thr Phe Ala Tyr Val
130 135 140

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Leu Asp Thr Gly Ile Asn Ser Lys His Val Asp Phe Glu Gly Arg Ala
145                 150                 155                 160

Tyr Met Gly Phe Ser Pro Pro Lys Thr Glu Pro Thr Asp Ile Asn Gly
                165                 170                 175

His Gly Thr His Val Ala Gly Ile Ile Gly Gly Lys Thr Phe Gly Val
            180                 185                 190

Ala Lys Lys Thr Gln Leu Ile Gly Val Lys Val Phe Leu Asp Asp Glu
        195                 200                 205

Ala Thr Thr Ser Thr Leu Met Glu Gly Leu Glu Trp Ala Val Asn Asp
    210                 215                 220

Ile Thr Thr Lys Gly Arg Gln Gly Arg Ser Val Ile Asn Met Ser Leu
225                 230                 235                 240

Gly Gly Pro Tyr Ser Gln Ala Leu Asn Asp Ala Ile Asp His Ile Ala
                245                 250                 255

Asp Met Gly Ile Leu Pro Val Ala Ala Ala Gly Asn Lys Gly Ile Pro
            260                 265                 270

Ala Thr Phe Ile Ser Pro Ala Ser Ala Asp Lys Ala Met Thr Val Gly
        275                 280                 285

Ala Ile Asn Ser Asp Trp Gln Glu Thr Asn Phe Ser Asn Phe Gly Pro
    290                 295                 300

Gln Val Asn Ile Leu Ala Pro Gly Glu Asp Val Leu Ser Ala Tyr Val
305                 310                 315                 320

Ser Thr Asn Thr Ala Thr Arg Val Leu Ser Gly Thr Ser Met Ala Ala
                325                 330                 335

Pro His Val Ala Gly Leu Ala Leu Tyr Leu Met Ala Leu Glu Glu Phe
            340                 345                 350

Asp Ser Thr Gln Lys Leu Thr Asp Arg Ile Leu Gln Leu Gly Met Lys
        355                 360                 365

Asn Lys Val Val Asn Leu Met Thr Asp Ser Pro Asn Leu Ile Ile His
    370                 375                 380

Asn Asn Val Lys
385
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<210> 241
<211> 411

<212> PRT
<213> Trichoderma atroviride

<400> 241

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Met Ala Trp Phe Lys His Val Ala Leu Leu Leu Ile Ala Ala Leu Pro
1               5                  10                  15

Arg Ile Thr Ala Leu Pro Val Asn Asp Ala Asn Asp Ala Asn Asp Ala
            20                  25                  30

Asn Glu Asn Ser Ile Ser Ala Glu Gly Arg Tyr Ile Val Thr Leu Gln
        35                  40                  45

Asn Asn Ile Pro Met Pro Glu Val Arg Asn His Met Ser Arg Val Ala
    50                  55                  60

Ala Ile Gln Tyr Arg Asn Ser Gly Asn His Lys Leu Pro His Thr Gly
65                  70                  75                  80

Ile Glu Lys Ala Tyr Ala Ile Gly Glu Phe Arg Ala Tyr Val Gly Ala
                85                  90                  95

Phe Asp Leu Asp Thr Leu Gln Met Ile Arg Asn Asp Thr Arg Val Ala
            100                 105                 110

Glu Ile Glu Pro Asp Thr Val Val Ser Ile Arg Glu Glu Thr Ser Tyr
        115                 120                 125

Lys Ala Ala Ser Gln Ser Asn Ala Pro Trp Gly Leu Ala Thr Leu Ser
    130                 135                 140

Ser Lys Arg Arg Asn Thr Gly Thr Tyr His Tyr Asp Thr Ser Ala Gly
145                 150                 155                 160

Asn Gly Thr Phe Ala Tyr Val Leu Asp Ser Gly Ile Asn Val Asn His
                165                 170                 175

Ile Glu Phe Glu Gly Arg Ala Ser Asn Gly Tyr Asn Ala Val Asp Gly
            180                 185                 190

Asp Phe Thr Asp Ile Gln Gly His Gly Thr His Cys Ala Gly Ile Ile
        195                 200                 205

Gly Ser Lys Ser Tyr Gly Val Ala Lys Lys Ala Gln Leu Ile Ala Val
    210                 215                 220

Lys Thr Phe Arg Asn Gln Glu Thr Leu Met Ser Thr Val Met Asp Ala
225                 230                 235                 240

Tyr Gln Trp Ser Ala Asn Asp Ile Arg Thr Lys Asn Arg Val Gly Leu
                245                 250                 255
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Ala Val Ile Asn Met Ser Leu Gly Gly Ser Tyr Ser Arg Ala Met Asn
            260                 265                 270

His Ala Val Glu Ser Ala Phe Asp Met Gly Ile Leu Thr Ile Val Ala
        275                 280                 285

Ala Gly Asn Glu Gly Arg Pro Ala Arg Leu Val Ser Pro Ala Ser Ala
    290                 295                 300

Ala Asn Ala Phe Thr Val Gly Ala Ile Asp Ala Asp Trp His Gln Trp
305                 310                 315                 320

Glu His Ser Asn Phe Gly Pro Glu Val Asn Ile Phe Ala Pro Gly Val
                325                 330                 335

Asn Ile Glu Ser Thr Tyr Ile Ser Thr Asp Met Ala Thr Arg Lys Leu
            340                 345                 350

Ser Gly Thr Ser Met Ala Ala Pro His Val Ala Gly Leu Ala Leu Tyr
        355                 360                 365

Leu Cys Ala Leu Glu Lys Ile Asp Asn Pro Ile Thr Leu Arg Glu Arg
    370                 375                 380

Ile Leu Asp Leu Gly Thr Arg Gly Arg Ile His Lys Leu Arg Gly Glu
385                 390                 395                 400

Ser Pro Asn Leu Ile Ala His Asn Asn Leu His
                405                 410


<210>  242
<211>  407
<212>  PRT
<213>  Trichoderma virens

<400>  242

Met Ala Trp Phe Lys Lys Leu Ala Leu Leu Leu Ile Thr Val Ser Pro
1               5                   10                  15

Cys Val Thr Ala Tyr Pro Phe Asn Lys Thr Gly Arg Arg Leu Ala Leu
            20                  25                  30

Asn Leu Asp Ala Leu Glu Pro Glu Ala Lys Tyr Ile Val Thr Leu Gln
        35                  40                  45

Lys Asp Leu Thr Pro Thr Gln Phe Lys Asn His Ile Ala Lys Val Asn
    50                  55                  60

Gly Thr Tyr Tyr Arg Ser Ser Gln Asp Asn Lys Gln Ser Ser Pro Ser
65                  70                  75                  80
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Gly Leu Glu Arg Thr Tyr Ala Ile Gly Gly Tyr Arg Ala Tyr Ser Gly
                85                  90                  95

Thr Phe Asp Lys Asp Thr Ile Ala Ser Leu Trp Ser Asp Ala Val Val
            100                 105                 110

Ala Glu Ile Glu Leu Asp Asp Tyr Phe Thr Val Gln Lys Leu Val Thr
        115                 120                 125

Gln Arg His Ala Pro Trp Gly Leu Ala Ala Leu Ser Ser Lys Lys Pro
    130                 135                 140

Gly Ser Glu Ser Tyr Arg Tyr Asp Lys Ser Ala Gly Asn Gly Thr Phe
145                 150                 155                 160

Ala Tyr Val Ile Asp Thr Gly Ile Asn Thr Lys His Val Glu Phe Gly
                165                 170                 175

Gly Arg Ala Ser Val Gly Tyr Ser Val Ile Ala Asp Asp Phe Ser Asp
            180                 185                 190

Asn Ser Gly His Gly Thr His Val Ser Gly Ile Ile Gly Gly Lys Thr
        195                 200                 205

Phe Gly Val Ala Lys Gln Thr Glu Ile Ile Gly Val Lys Val Phe Leu
    210                 215                 220

Asn Asn Gly Gly Glu Asn Ser Asp Val Ile Asp Gly Leu Gln Trp Ala
225                 230                 235                 240

Val Arg Asp Ile Leu Ala Lys Gly Arg Gln Ser Arg Ser Val Ile Asn
                245                 250                 255

Met Ser Leu Gly Gly Pro Tyr Ser Tyr Ala Leu Asn His Ala Val Asp
            260                 265                 270

Ala Ala Phe Glu Met Gly Ile Leu Val Val Val Ala Ala Gly Asn Asp
        275                 280                 285

Ala Glu Pro Ala Arg Tyr Ser Ser Pro Ala Ser Ser Ser Gln Ala Leu
    290                 295                 300

Thr Val Gly Ala Ile Asp Ile Gln Trp Arg Arg Cys Gly Phe Ser Asn
305                 310                 315                 320

Phe Gly Pro Glu Val Asn Ile Glu Ala Pro Gly Glu Asp Ile Glu Ser
                325                 330                 335

Ala Phe Ile Ala Thr Asp Asn Ala Thr Ala Ile Leu Asp Gly Thr Ser
            340                 345                 350
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Met Ala Thr Pro His Ile Thr Gly Leu Ala Leu Tyr Leu Ala Ala Leu
355 360 365

Glu Lys Thr Lys Thr Ala Lys Glu Leu Arg Asp Lys Val Leu Glu Val
370 375 380

Ala Ile Lys Asp Lys Ala Lys Asp Leu Thr Leu Glu Thr Pro Asn Leu
385 390 395 400

Ile Ala His Asn Gly Ala Arg
405

<210> 243
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 243
gtaacgccag ggttttccca gtcacgacgg tttaaacgta ttgcgatgag cagcaga 57

<210> 244
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 244
atccacttaa cgttactgaa atctggtctc ctaacccacc aag 43

<210> 245
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 245
ctccttcaat atcatcttct gtctgtgaaa tgaggtccct tcc 43

<210> 246
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 246
gcggataaca atttcacaca ggaaacagcg tttaaaccaa acgcagcaga aaccata 57

<210> 247
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 247
gatttcagta acgttaagtg gatgcggccg cgacagaaga tgatattgaa g 51

<210> 248
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 248
gacagaagat gatattgaag gaggcggccg cttaagtgga tcccggtgac 50

<210> 249
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 249
ggtgggttag gagaccagat ttcagtaacg ttaagtggat gcggccgcct agcatcgact 60

actgctgc 68

<210> 250
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 250
gcagcagtag tcgatgctag gcgcgccatg caaagataca catcaa 46

<210> 251
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 251
ttgatgtgta tctttgcatg gcgcgcctag catcgactac tgctgc 46

<210> 252
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 252
agggacctca tttcacagac agaagatgat attgaaggag gcggccgcgg ctgatgaggc 60

tgagagag 68

<210> 253
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 253
tcgctgtaac gaacttctgt 20

<210> 254
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 254
cattgttgac ctccactagc 20

<210> 255
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 255
gctgctgatc ggacattttt 20

<210> 256
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 256
gtttctggca gctggact 18

<210> 257
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 257
tcgctgtaac gaacttctgt 20

<210> 258
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 258
tgcgtcgccg tctcgctcct 20

<210> 259
<211> 20
<212> DNA
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<220>
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<400> 259
cgacgatcta cagccatctg 20

<210> 260
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<400> 260
acccaaagcg tccttcatta 20

<210> 261
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 261
gtaacgccag ggttttccca gtcacgacgg tttaaacttc agttgtggca tctcagc 57

<210> 262
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 262
gccaagccca aaaagtgctc cttcaatatc atcttctgtc gcggccgcgg gaagcaagtt 60

tcgaagtg 68

<210> 263
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
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<400> 263
cccgtcaccg agatctgatc cgtcaccggg atccacttaa gcggccgcaa tggatgaggt 60

gtggcttc 68

<210> 264
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 264
gcggataaca atttcacaca ggaaacagcg tttaaactcc tcaccgaaga gcaagtc 57

<210> 265
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 265
gtaacgccag ggttttccca gtcacgacgg tttaaacttc agttgtggca tctcagc 57

<210> 266
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 266
cattgttgac ctccactagc 20

<210> 267
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 267
cgtcaccgag atctgatcc 19

<210> 268
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
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<400> 268
gcggataaca atttcacaca ggaaacagcg tttaaactcc tcaccgaaga gcaagtc 57

<210> 269
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<400> 269
gacgtggtac gacaacatcg 20

<210> 270
<211> 20
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<220>
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<400> 270
tatcaaggta ccggggacag 20

<210> 271
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 271
gattaagttg ggtaacgcca gggttttccc agtcacgacg gtttaaacac ctcatgaggg 60

actatgg 67

<210> 272
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 272
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgcca agaagaggca 60

gagggtaat 69

<210> 273
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 273
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcct atacatactg 60

atgataca 68

<210> 274
<211> 68
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 274
tggaattgtg agcggataac aatttcacac aggaaacagc gtttaaacgc cccatgtatg 60

gactctac 68

<210> 275
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 275
ctcagaaagg ttgtagttgt ga 22

<210> 276
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 276
ccatgagctt gaacaggtaa 20

<210> 277
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 277
gatgttgtgt tttcagtctg ca 22

<210> 278
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 278
catcctcaag gcctcagac 19

<210> 279
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 279
atgttcatcg ctggcgtcg 19

<210> 280
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 280
ctaaacgtaa gagcaggtca a 21

<210> 281
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 281
gattaagttg ggtaacgcca gggttttccc agtcacgacg gtttaaacgc tactacgcga 60

gcaagtg 67

<210> 282
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 282
ggaactgtcg gcgattggga gaatttcgtg cgatcgcggc ggccgccgga tgaagatgtg 60

cagttg 66

<210> 283
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 283
agggaacata tcaccctcgg gcatttttca tttggtaggc ggccgctaag atatcttcaa 60

gcttatgcg 69

<210> 284
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 284
cggatgaaga tgtgcagttg 20

<210> 285
<211> 61

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 285
tgtctcactt ccacccatct caactgcaca tcttcatccg agcaacaaca tgaggttcga 60

a 61

<210> 286
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 286
cctatgttgt gtggaattgt gagcggataa caatttcaca gtttaaacac aacgcatgtc 60

cagcttttg 69

<210> 287
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 287
gcttggcatc acggaagct 19

<210> 288
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 288
ccatgagctt gaacaggtaa 20

<210> 289
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 289
ttgacaagaa aggtccggtt g 21

<210> 290
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 290
catcctcaag gcctcagac 19

<210> 291
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<400> 291
atggatgcta tccgagccag 20

<210> 292
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 292
ctattcatac tcaacagtca ca 22

<210> 293
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 293
gtaacgccag ggttttccca gtcacgacgg tttaaactgc tgttgctgtt tgttgatg 58

<210> 294
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 294
cccgtcaccg agatctgatc cgtcaccggg atccacttaa gcggccgcct gtggtgagat 60

ctccagacg 69

<210> 295
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 295
gccaagccca aaaagtgctc cttcaatatc atcttctgtc gcggccgcac tgtgcccaac 60

aataagcag 69

<210> 296
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 296
gcggataaca atttcacaca ggaaacagcg tttaaaccca aggcgctggc tgtta 55

<210> 297
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 297
gatcgacaaa ggttccagcg 20

<210> 298
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 298
aattgtatca ttccgaggct 20

<210> 299
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 299
ctgtttggcc ctcgaaact 19

<210> 300
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 300
cattgttgac ctccactagc 20

<210> 301
<211> 20
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<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 301
ttcgccatcc aaatttcttc 20

<210> 302
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 302
gtttctggca gctggact 18

<210> 303
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 303
ctgtttggcc ctcgaaact 19

<210> 304
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 304
tgcgtcgccg tctcgctcct 20

<210> 305
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 305
ttcgccatcc aaatttcttc 20

<210> 306
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 306
catcctcaag gcctcagac 19

<210> 307
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 307
cccaagtcgt ctcagctctc 20

<210> 308
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 308
tcgaaggctt cagtgaggta a 21

<210> 309
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 309
gtaacgccag ggttttccca gtcacgacgg tttaaacatc tcggagtgat gcttcct 57

<210> 310
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 310
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgcat cagacgaaac 60

cagacgag 68

<210> 311
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 311
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcgc gaatcgagtt 60

gatgattc 68

<210> 312
<211> 57
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 312
gcggataaca atttcacaca ggaaacagcg tttaaacctg gttgggatct gaccact 57

<210> 313
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 313
gcagacaaac agagcaacga 20

<210> 314
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 314
ccatgagctt gaacaggtaa 20

<210> 315
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 315
tagagggtgt cgatggaagc 20

<210> 316
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 316
catcctcaag gcctcagac 19

<210> 317
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 317
ggtctcttct ttgccagcac 20

<210> 318
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 318
tgtcgctgaa ctgaatttgc 20

<210> 319
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 319
gattaagttg ggtaacgcca gggttttccc agtcacgacg gtttaaacgc agtctatccc 60

atccctg 67

<210> 320
<211> 68
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<220>
<223> Synthetic Construct

<400> 443
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcag acggcttctt 60

ccaaaaca 68

<210> 444
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 444
gcggataaca atttcacaca ggaaacagcg tttaaacccc cagggaggct attctac 57

<210> 445
<211> 20
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<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 445
ctttccaagc gtttgagtcc 20

<210> 446
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<220>
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<400> 446
ccatgagctt gaacaggtaa 20

<210> 447
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<220>
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<400> 447
gcgtgtttta tcctggtgct 20

<210> 448
<211> 19
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<220>
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<400> 448
catcctcaag gcctcagac 19

<210> 449
<211> 20
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<220>
<223> Synthetic Construct

<400> 449
cacctccgtc gatgagtttt 20

<210> 450
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<220>
<223> Synthetic Construct

<400> 450
agaagaaggt ggtggtggtg 20

<210> 451
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 451
gtaacgccag ggttttccca gtcacgacgg tttaaacgtt tgagcattct cccaagc 57

<210> 452
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
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<400> 452
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgccg ccattttgaa 60

gaagatgc 68

<210> 453
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 453
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcat gctccctcgt 60

cattaagc 68

<210> 454
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 454
gcggataaca atttcacaca ggaaacagcg tttaaacaca acaccttctc cgacacc 57

<210> 455
<211> 20
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<213> Artificial Sequence

<220>
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<400> 455
atgcccaagt ttcgtacctg 20

<210> 456
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<220>
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<400> 456
ccatgagctt gaacaggtaa 20

<210> 457
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<213> Artificial Sequence

<220>
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<400> 457
ggcgcattca gaagaagaac 20

<210> 458
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<220>
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<400> 458
catcctcaag gcctcagac 19

<210> 459
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<220>
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<400> 459
cacttgatga acgctggcta 20

<210> 460
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<220>
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<400> 460
cgtaatggcg ttgttgacag 20

<210> 461
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<213> Artificial Sequence

<220>
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<400> 461
gtaacgccag ggttttccca gtcacgacgg tttaaacgag gcagccaaaa agtgaag 57

<210> 462
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 462
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgctg aaagaaggca 60

ggaccagt 68

<210> 463
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 463
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcaa gaggctcgga 60

caaagaca 68

<210> 464
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
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<400> 464
gcggataaca atttcacaca ggaaacagcg tttaaacgat cgtggtgcac gagacta 57

<210> 465
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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<400> 465
gcactgcgtt gcctttctat 20

<210> 466
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 466
ccatgagctt gaacaggtaa 20

<210> 467
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 467
gaaagcatgg ctcgtttctc 20

<210> 468
<211> 19
<212> DNA
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<220>
<223> Synthetic Construct

<400> 468
catcctcaag gcctcagac 19

<210> 469
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 469
acccggctca actagctaca 20

<210> 470
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 470
agctggcctt tcgttacaga 20

<210> 471
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 471
gtaacgccag ggttttccca gtcacgacgg tttaaacttg gtttgaacag ctgcaag 57

<210> 472
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 472
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgctt tgcagcaaga 60

tgtcgttc 68

<210> 473
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 473
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcgc tgtgaagacg 60

ggcttatc 68

<210> 474
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 474
gcggataaca atttcacaca ggaaacagcg tttaaaccaa gaacagcatc gaggaca 57

<210> 475
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 475
gggcgacgac gagttttat 19

<210> 476
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 476
ccatgagctt gaacaggtaa 20

<210> 477
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 477
gaatggatca agtcgctgct 20

<210> 478
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 478
catcctcaag gcctcagac 19

<210> 479
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 479
ctcaggctct gcttggattc 20

<210> 480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 480
atgccaaaaa gactgctgct 20

<210> 481
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 481
gtaacgccag ggttttccca gtcacgacgg tttaaacgcc tccctggtat tcagaca 57

<210> 482
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 482
gcgctggcaa cgagagcaga gcagcagtag tcgatgctag gcggccgcga cgccagaaag 60

aaatgctc 68

<210> 483
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 483
caaccagccg cagcctcagc ctctctcagc ctcatcagcc gcggccgcga cctggtcagc 60

tgctcttt 68

<210> 484
<211> 57
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 484
gcggataaca atttcacaca ggaaacagcg tttaaactgg aaccacatcg acttcac 57

<210> 485
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 485
aaccaccttg tcaccgtctc 20

<210> 486
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 486
ccatgagctt gaacaggtaa 20

<210> 487
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 487
gtcgtcgagg ctgctttatc 20

<210> 488
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 488
catcctcaag gcctcagac 19

<210> 489
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 489
gatctcgaat ccgaggacaa 20

<210> 490
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 490
ccggtagcgt tagagagacg 20

<210> 491
<211> 417
<212> PRT
<213> Myceliophthora thermophila

<400> 491

Met His Leu Thr Pro Ala Leu Val Ala Ala Thr Cys Ala Val Glu Val
1 5 10 15

Cys Ala Gly Val Leu Pro Arg Ser Ser Ser Thr Pro Thr Thr Phe Gly
20 25 30

Ser Gly Thr Leu Ser Leu Lys Gln Val Arg Asn Pro Asn Phe Val Arg
35 40 45

Asn Gly Pro Val Gln Leu Ala Arg Ile Tyr His Lys Tyr Gly Val Pro
50 55 60

Leu Pro His Asp Leu Arg Glu Ala Val Ala Arg Phe Arg Ala Glu Ile
65 70 75 80

Arg Lys Arg Ser Asn Gly Ser Thr Glu Thr Asn Pro Glu Thr Asn Asp
85 90 95

Val Glu Tyr Leu Thr Pro Val Ser Ile Gly Thr Pro Pro Gln Val Leu

```
            100                 105                 110

Asn Leu Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser
        115                 120                 125

Glu Thr Arg Ser Ser Asp Val Gln Gly Gln Thr Ile Tyr Asp Pro Asn
    130                 135                 140

Glu Ser Ser Thr Ala Gln Lys Leu Gln Gly Tyr Ser Trp Gln Ile Ser
145                 150                 155                 160

Tyr Gly Asp Gly Ser Ser Ser Ser Gly Asp Val Tyr Thr Asp Ala Val
                165                 170                 175

Thr Val Gly Gly Leu Thr Val Pro Ser Gln Ala Val Glu Val Ala Arg
            180                 185                 190

Arg Val Ser Asp Glu Phe Thr Ser Asp Pro Asn Asn Asp Gly Leu Leu
        195                 200                 205

Gly Leu Gly Phe Ser Ser Ile Asn Thr Val Gln Pro Val Pro Gln Lys
    210                 215                 220

Thr Phe Phe Asp Asn Ala Lys Ala Asp Leu Asp Ala Pro Ile Phe Thr
225                 230                 235                 240

Ala Asp Leu Lys Ala Ser Ala Pro Gly Phe Phe Asn Phe Gly Tyr Ile
                245                 250                 255

Asp His Gly Ala Tyr Thr Gly Glu Ile Thr Tyr Met Pro Val Asp Ser
            260                 265                 270

Ser Asp Gly Phe Trp Ala Trp Thr Ser Pro Gly Tyr Ala Val Gly Ser
        275                 280                 285

Gly Ser Phe Lys Arg Thr Thr Ile Gln Gly Ile Ala Asp Thr Gly Thr
    290                 295                 300

Ser Leu Phe Leu Leu Pro Ser Ser Val Val Ser Ala Tyr Tyr Gly Gln
305                 310                 315                 320

Ile Ser Gly Ala Lys Tyr Asp Ser Ile Gln Gly Gly Tyr Thr Leu Pro
                325                 330                 335

Cys Ser Gly Ser Val Pro Asp Phe Ala Phe Gly Ile Gly Asp Ser Asn
            340                 345                 350

Thr Thr Ile Ser Val Pro Gly Asp Tyr Val Arg Tyr Ala Ala Thr Asp
        355                 360                 365

Ser Ser Gly Ile Ile Cys Phe Gly Gly Ile Gln Ala Asn Thr Gly Ile
```

370 375 380

Gly Phe Ser Ile Phe Gly Asp Val Ala Leu Lys Ala Ala Phe Val Val
385 390 395 400

Phe Asp Gly Ala Lys Gln Gln Leu Gly Trp Ala Ser Lys Pro Leu Pro
405 410 415

Ser

<210> 492
<211> 396
<212> PRT
<213> Penicillium chrysogenum

<400> 492

Met Val Val Phe Ser Lys Val Thr Ala Ser Leu Ala Cys Phe Ser Ala
1 5 10 15

Val Val Ser Ala Ala Ala Val Pro Val Lys Ser Pro Arg Gln Gly Phe
20 25 30

Ser Val Asn Gln Val Gln Lys Thr Val Thr Gly Thr Arg Thr Val Asn
35 40 45

Leu Pro Gly Val Tyr Ala Asn Ala Leu Ala Lys Tyr Gly Ala Thr Val
50 55 60

Pro Ala Asn Val His Ala Ala Ala Val Ser Gly Ser Ala Ile Thr Thr
65 70 75 80

Pro Glu Glu Asn Asp Val Glu Tyr Leu Thr Pro Val Lys Ile Gly Glu
85 90 95

Ser Thr Leu Asn Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val
100 105 110

Phe Ser Thr Glu Leu Ser Ser Ala Glu Gln Ser Gly His Asp Val Tyr
115 120 125

Asp Val Ser Ser Ser Gly Lys Lys Leu Thr Gly Ala Ser Trp Ser Ile
130 135 140

Ser Tyr Gly Asp Gly Ser Gly Ala Ser Gly Asp Val Tyr Lys Asp Thr
145 150 155 160

Val Thr Val Gly Gly Val Lys Ala Thr Gly Gln Ala Val Glu Ala Ala
165 170 175

Lys Lys Ile Ser Gln Gln Phe Val Gln Asp Lys Ser Asn Asp Gly Leu
180 185 190

```
Leu Gly Leu Ala Phe Ser Ser Ile Asn Thr Val Ser Pro Lys Pro Gln
        195                 200                 205

Thr Thr Phe Phe Asp Thr Val Lys Ser Asp Leu Asp Lys Pro Leu Phe
    210                 215                 220

Ala Val Thr Leu Lys His Gly Ala Pro Gly Thr Tyr Asp Phe Gly Tyr
225                 230                 235                 240

Ile Asp Lys Lys Lys Phe Thr Gly Ser Leu Thr Tyr Thr Asp Val Asp
                245                 250                 255

Asn Ser Gln Gly Phe Trp Ser Phe Thr Ala Asp Ser Tyr Lys Val Gly
            260                 265                 270

Thr Gly Ser Ala Gly Pro Ser Ile Glu Gly Ile Ala Asp Thr Gly Thr
        275                 280                 285

Thr Leu Leu Leu Leu Asp Asp Gly Val Val Ser Asp Tyr Tyr Lys Lys
    290                 295                 300

Val Asp Gly Ala Lys Asn Asn Tyr Ser Ala Gly Gly Tyr Val Phe Pro
305                 310                 315                 320

Cys Asp Ala Asp Leu Pro Asp Phe Thr Val Thr Ile Gly Ser Tyr Asp
                325                 330                 335

Ala Val Val Pro Gly Lys His Ile Lys Tyr Ala Pro Val Thr Thr Gly
            340                 345                 350

Ser Ser Ser Cys Phe Gly Gly Ile Gln Ser Asn Ser Gly Ile Gly Phe
        355                 360                 365

Ser Ile Phe Gly Asp Ile Phe Leu Lys Ser Gln Tyr Val Val Phe Asp
    370                 375                 380

Ala Glu Gly Pro Arg Leu Gly Phe Ala Ala Gln Ala
385                 390                 395


<210>  493
<211>  394
<212>  PRT
<213>  Aspergillus niger

<400>  493

Met Val Val Phe Ser Lys Thr Ala Ala Leu Val Leu Gly Leu Ser Ser
1               5                   10                  15

Ala Val Ser Ala Ala Pro Ala Pro Thr Arg Lys Gly Phe Thr Ile Asn
            20                  25                  30
```

```
Gln Ile Ala Arg Pro Ala Asn Lys Thr Arg Thr Ile Asn Leu Pro Gly
        35                  40                  45

Met Tyr Ala Arg Ser Leu Ala Lys Phe Gly Gly Thr Val Pro Gln Ser
    50                  55                  60

Val Lys Glu Ala Ala Ser Lys Gly Ser Ala Val Thr Thr Pro Gln Asn
65                  70                  75                  80

Asn Asp Glu Glu Tyr Leu Thr Pro Val Thr Val Gly Lys Ser Thr Leu
                85                  90                  95

His Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val Phe Ser Asp
            100                 105                 110

Glu Leu Pro Ser Ser Glu Gln Thr Gly His Asp Leu Tyr Thr Pro Ser
        115                 120                 125

Ser Ser Ala Thr Lys Leu Ser Gly Tyr Thr Trp Asp Ile Ser Tyr Gly
    130                 135                 140

Asp Gly Ser Ser Ala Ser Gly Asp Val Tyr Arg Asp Thr Val Thr Val
145                 150                 155                 160

Gly Gly Val Thr Thr Asn Lys Gln Ala Val Glu Ala Ala Ser Lys Ile
                165                 170                 175

Ser Ser Glu Phe Val Gln Asp Thr Ala Asn Asp Gly Leu Leu Gly Leu
            180                 185                 190

Ala Phe Ser Ser Ile Asn Thr Val Gln Pro Lys Ala Gln Thr Thr Phe
        195                 200                 205

Phe Asp Thr Val Lys Ser Gln Leu Asp Ser Pro Leu Phe Ala Val Gln
    210                 215                 220

Leu Lys His Asp Ala Pro Gly Val Tyr Asp Phe Gly Tyr Ile Asp Asp
225                 230                 235                 240

Ser Lys Tyr Thr Gly Ser Ile Thr Tyr Thr Asp Ala Asp Ser Ser Gln
                245                 250                 255

Gly Tyr Trp Gly Phe Ser Thr Asp Gly Tyr Ser Ile Gly Asp Gly Ser
            260                 265                 270

Ser Ser Ser Ser Gly Phe Ser Ala Ile Ala Asp Thr Gly Thr Thr Leu
        275                 280                 285

Ile Leu Leu Asp Asp Glu Ile Val Ser Ala Tyr Tyr Glu Gln Val Ser
    290                 295                 300
```

```
Gly Ala Gln Glu Ser Glu Glu Ala Gly Gly Tyr Val Phe Ser Cys Ser
305                 310                 315                 320

Thr Asn Pro Pro Asp Phe Thr Val Val Ile Gly Asp Tyr Lys Ala Val
                325                 330                 335

Val Pro Gly Lys Tyr Ile Asn Tyr Ala Pro Ile Ser Thr Gly Ser Ser
            340                 345                 350

Thr Cys Phe Gly Gly Ile Gln Ser Asn Ser Gly Leu Gly Leu Ser Ile
        355                 360                 365

Leu Gly Asp Val Phe Leu Lys Ser Gln Tyr Val Val Phe Asn Ser Glu
    370                 375                 380

Gly Pro Lys Leu Gly Phe Ala Ala Gln Ala
385                 390
```

<210> 494
<211> 386
<212> PRT
<213> Aspergillus nidulans

<400> 494

```
Met Val Val Phe Ser Lys Val Ala Ala Ala Ala Phe Gly Leu Ser Ala
1               5                   10                  15

Val Ala Ser Ala Met Pro Ala Ala Pro Pro Arg Gln Gly Phe Thr Ile
            20                  25                  30

Asn Gln Leu Thr Arg Ala Ile Pro Lys Arg Thr Ile Asn Leu Pro Ala
        35                  40                  45

Ile Tyr Ala Asn Ala Leu Ser Lys Tyr Gly Gly Asn Val Pro Pro His
    50                  55                  60

Ile Gln Asp Ala Met Ala His Gly Ser Ala Val Thr Thr Pro Glu Gln
65                  70                  75                  80

Tyr Asp Val Glu Tyr Leu Thr Pro Val Ala Val Gly Gly Thr Thr Met
                85                  90                  95

Asn Leu Asp Phe Asp Thr Gly Ser Ala Asp Leu Trp Val Phe Ser Asn
            100                 105                 110

Glu Leu Pro Ser Ser Gln Thr Thr Gly His Ser Val Tyr Lys Pro Ser
        115                 120                 125

Asp Asn Gly Thr Arg Met Ser Gly Tyr Ser Trp Glu Ile Ser Tyr Gly
    130                 135                 140
```

```
Asp Gly Ser Ser Ala Gly Gly Asp Val Tyr Arg Asp Thr Val Thr Val
145                 150                 155                 160

Gly Gly Val Thr Ala Pro Gly Gln Ala Val Glu Ala Ala Ser His Ile
                165                 170                 175

Ser Glu Gln Phe Thr Arg Asp Gln Asn Asn Asp Gly Leu Leu Gly Leu
            180                 185                 190

Ala Phe Ser Ser Ile Asn Thr Val Gln Pro Lys Ser Gln Thr Thr Phe
        195                 200                 205

Phe Asp Ser Val Lys Ser Gln Leu Glu Ser Pro Leu Phe Ala Val Thr
    210                 215                 220

Leu Lys His Gln Ala Pro Gly Ser Tyr Asp Phe Gly Tyr Ile Asp Gln
225                 230                 235                 240

Ser Lys Tyr Thr Gly Glu Leu Thr Tyr Thr Asp Val Asp Asn Ser Gln
                245                 250                 255

Gly Phe Trp Met Phe Ser Ala Thr Ala Gly Glu Thr Asp Phe Asp Ala
            260                 265                 270

Ile Ala Asp Thr Gly Thr Thr Leu Ile Met Ile Asp Gln Ser Ile Ala
        275                 280                 285

Glu Asp Tyr Tyr Ser Gln Val Pro Leu Ala Phe Asn Asn Phe Phe Tyr
    290                 295                 300

Gly Gly Trp Thr Phe Pro Cys Ser Ala Glu Leu Pro Ser Phe Thr Val
305                 310                 315                 320

Thr Ile Asn Gly Tyr Asp Ala Val Val Pro Gly Glu His Ile Lys Tyr
                325                 330                 335

Ala Pro Val Thr Asp Gly Ser Ser Thr Cys Phe Gly Gly Ile Gln Asp
            340                 345                 350

Asn Gln Gly Leu Pro Phe Ser Ile Leu Gly Asp Val Phe Leu Lys Ser
        355                 360                 365

Gln Tyr Val Val Phe Asp Ser Glu Gly Pro Gln Leu Gly Phe Ala Pro
    370                 375                 380

Gln Ala
385
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<210> 495
<211> 434
<212> PRT
<213> Neurospora crassa

<400> 495

```
Met Leu Leu Phe Pro Thr Ile Leu Thr Ala Ala Leu Ala Ala Thr Gly
1               5                  10                  15

Met Ala Ala Ala Ile Pro Ser Arg Asp Asp Thr Thr Ala Asn Lys Gly
            20                  25                  30

Thr Ala Ser Leu Leu Gln Val Arg Asn Pro Ser Phe Glu Phe Arg His
        35                  40                  45

Gly Pro Leu Ala Leu Ala Lys Ala Tyr Gln Lys Phe Gly Ala Pro Met
    50                  55                  60

Pro Glu Asp Leu Arg Ala Ala Ile Ala Arg Phe Arg Gln Asn Gln Lys
65                  70                  75                  80

Arg Thr Thr Gly Thr Ile Ala Thr Asp Pro Glu Lys His Asp Val Glu
                85                  90                  95

Tyr Leu Thr Pro Ile Ser Val Gly Thr Pro Ser Gln Asp Leu Val Val
            100                 105                 110

Asp Phe Asp Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Thr Glu Met
        115                 120                 125

Ser Thr Ser Asp Ile Lys Gly Gln Thr Val Tyr Asp Pro Asn Asn Ser
    130                 135                 140

Ser Thr Ser Glu Lys Val Gln Gly Ser Thr Trp Lys Ile Thr Tyr Gly
145                 150                 155                 160

Asp Gly Ser Ser Ser Ser Gly Asp Val Tyr Leu Asp Thr Val Thr Ile
                165                 170                 175

Gly Asn Leu Thr Val Pro Ser Gln Ala Val Glu Ala Ala Lys Lys Val
            180                 185                 190

Ser Ser Glu Phe Thr Asp Asp Ser His Asn Asp Gly Leu Leu Gly Leu
        195                 200                 205

Gly Phe Ser Ala Ile Asn Ala Val Glu Pro Thr Pro Gln Asn Thr Phe
    210                 215                 220

Phe Asp Asn Ile Lys Gly Ser Leu Asp Ala Pro Leu Phe Thr Val Asp
225                 230                 235                 240

Leu Lys His Gly Thr Pro Gly Ser Phe Asn Phe Gly Tyr Ile Asp Pro
                245                 250                 255

Ala Ala Tyr Ile Gly Asn Ile Ser Trp Thr Pro Val Asp Ser Ser Gln
```

260 265 270

Gly Tyr Trp Gly Phe Thr Ser Pro Gly Tyr Ala Val Gly Thr Gly Ala
275 280 285

Phe Arg Asn His Ser Ile Ser Gly Ile Ala Asp Thr Gly Thr Thr Leu
290 295 300

Leu Leu Leu Pro Lys Ser Val Val Ser Ala Tyr Tyr Lys Glu Ile Gln
305 310 315 320

Gly Ala Gln Tyr Asp Ser Asp Gln Gly Gly Tyr Ile Phe Pro Cys Ser
325 330 335

Pro Thr Pro Pro Asp Phe Val Phe Gly Val Asn Lys Gly Ile Val Thr
340 345 350

Val Pro Gly Asp Met Val Ser Tyr Ala Pro Ala Asp Ser Ala Asn Gln
355 360 365

Asn Cys Phe Gly Gly Ile Gln Thr Asp Thr Gly Ile Gly Phe Ser Ile
370 375 380

Phe Gly Asp Val Ala Leu Lys Thr Ser Phe Val His Leu His Gly Ser
385 390 395 400

Ile Val Pro Gly Tyr Tyr Ala Asp Cys Ala Met Arg Phe Asn Arg Met
405 410 415

Leu Arg Ser Tyr Ser Asn Asp Gln Leu Val Asp Phe Ser Ser Ser Gly
420 425 430

Pro Leu

<210> 496
<211> 466
<212> PRT
<213> Myceliophthora thermophila

<400> 496

Met Asp Ala Leu Phe Glu Thr His Ala Lys Leu Arg Lys Arg Met Ala
1 5 10 15

Leu Tyr Arg Val Arg Ala Val Pro Asn Gln Asn Tyr Gln Arg Asp Gly
20 25 30

Thr Lys Ser Tyr Val Ser Val Leu Asn Arg Phe Gly Phe Gln Pro Thr
35 40 45

Lys Pro Gly Pro Tyr Phe Gln Ile Phe Glu Glu Ser Glu Glu Ala Pro
50 55 60

```
Ser Met Ser Ala Ala Pro Gly Val Lys Pro Gly His Val Trp Gln Gly
65                  70                  75                  80

Leu Phe Lys Lys Leu Lys Asp Gln Glu Glu Pro Gly Glu Val Thr Ala
                85                  90                  95

Glu Asp Gln Gln Asn Asp Ser Glu Tyr Leu Cys Glu Val Met Ile Gly
            100                 105                 110

Thr Ala Trp Thr Ala Glu Arg Gln Ile Val Lys Met Asp Phe Asp Thr
        115                 120                 125

Gly Leu Ala Asp Phe Trp Val Ser Gln Lys Ser Phe Asp Pro Lys Lys
    130                 135                 140

Ser Val Thr Trp Gln Leu Ala Lys Asp Lys Ser Trp Lys Val Gln Tyr
145                 150                 155                 160

Gly Asp Gly Ser Ser Ala Ser Gly Ile Val Gly His Asp Ile Leu Ile
                165                 170                 175

Ile Gly Gly Ile Gln Ile Lys Arg Gln Ala Ile Glu Ile Ala Thr Glu
            180                 185                 190

Met Ser Ala Gln Phe Ser Glu Gly Thr Met Asp Gly Ile Leu Gly Leu
        195                 200                 205

Ala Phe Ser Lys Leu Asn Thr Val Gln Thr Asp Gly Lys Pro Asp Pro
    210                 215                 220

Gln Arg Thr Val Val Asp Asn Met Met Ala Gln Asp Asp Ile Pro Pro
225                 230                 235                 240

Glu Ala Glu Leu Phe Ser Thr Ala Leu Tyr Ser Asn Arg Glu Asp Asp
                245                 250                 255

Gln Arg Ser Phe Tyr Thr Phe Gly Trp Ile Asp Glu Asp Leu Val Lys
            260                 265                 270

Ala Ser Gly Glu Glu Ile Val Trp Thr Asp Val Asp Asn Ser Glu Gly
        275                 280                 285

Phe Trp Met Phe Ser Ser Glu His Val Thr Ile Asp Gly Gln Gln Val
    290                 295                 300

Arg Ile Glu Gly Asn Lys Ala Ile Ala Asp Thr Gly Thr Ser Leu Val
305                 310                 315                 320

Leu Val Ser Asp Gln Val Cys Asp Ala Leu Tyr Ala His Ile Pro Ser
                325                 330                 335
```

```
Ala Glu Tyr Ser Glu Glu Tyr Gln Gly Trp Thr Phe Pro Gln Glu Thr
            340                 345                 350

Glu Val Asp Lys Leu Pro Glu Phe Ser Ile Ala Ile Gly Asp Lys Glu
        355                 360                 365

Phe Val Leu Gln Lys Glu Asp Leu Ile Phe Ala Pro Ala Asp Glu Arg
    370                 375                 380

Val Phe Tyr Gly Ser Val Gln Ser Arg Gly Glu Asn Pro Phe Asp Ile
385                 390                 395                 400

Leu Gly Ile Ala Phe Leu Lys Ser Ile Tyr Ala Ile Trp Asp Gln Gly
                405                 410                 415

His Lys Arg Phe Gly Ala Val Pro Lys Met Glu Ala Phe Val Pro Pro
            420                 425                 430

Thr Lys Tyr Asp Arg Pro Arg Leu Thr Asp Gln Asp Arg Lys Asp Leu
        435                 440                 445

Gly Val Thr Ile Gly Tyr Gly Asp Ile Ser Ser Thr Phe Phe Glu Lys
    450                 455                 460

Arg Ala
465


<210>  497
<211>  419
<212>  PRT
<213>  Penicillium chrysogenum

<400>  497

Met Thr Arg Ile Lys Leu Ile Ala Asn Pro His Tyr Gln Lys Ser Gly
1               5                   10                  15

Thr Lys Ser Tyr Leu Tyr Ala Met Arg Lys Tyr Arg Phe Thr Pro Thr
            20                  25                  30

Lys Asp Gly Pro Tyr Phe Leu Gly Thr Thr Met Val Gln Thr Gly Arg
        35                  40                  45

Gln Phe Thr Asn Lys Pro Val Gly Gly Arg Ala Arg Leu Gln Gln Val
    50                  55                  60

Leu Gln Lys Lys Asp Ala Val Ser Asp Glu Val Gly Gln Val Gly Val
65                  70                  75                  80

His Asp Val Gln Asn Asp Ser Met Tyr Leu Ala Glu Ile Gly Ile Gly
                85                  90                  95
```

```
Thr Pro Ala Gln Thr Leu Asn Leu Asp Phe Asp Thr Gly Ser Ala Asp
            100                 105                 110

Leu Trp Val Trp Ser Thr Glu Leu Ser Ser Lys Ile Leu Ser Ala Asn
        115                 120                 125

Lys Asn His Arg Val Phe Asp Pro Thr Lys Ser Ser Thr Phe Glu Glu
    130                 135                 140

Lys Asp Gly Ser Thr Trp Gln Ile Lys Tyr Gly Asp Gly Ser Phe Ala
145                 150                 155                 160

Ser Gly Thr Val Gly Asn Asp Asn Val Thr Ile Gly Gly Leu Val Val
                165                 170                 175

Lys Gly Gln Ala Val Gly Ile Ala Asp Ile Leu Ser Glu Gln Phe Ala
            180                 185                 190

Gln Gly Ala Gly Asp Gly Leu Leu Gly Leu Ala Phe Ser Asn Ile Asn
        195                 200                 205

Thr Val Lys Pro Glu Ala Val Ala Met Pro Val Glu Asn Met Ile Ser
    210                 215                 220

Gln Ala Asp Ile Pro Lys Ser Ala Glu Leu Phe Thr Ala Lys Leu Gly
225                 230                 235                 240

Ser Trp Arg Asp Thr Asp Glu Pro Asp Lys Gly Glu Ser Phe Tyr Thr
                245                 250                 255

Phe Gly Tyr Val Asp Gln Asp Thr Val Lys Ala Ala Glu Ser Glu Ile
            260                 265                 270

Tyr Tyr Thr Pro Val Asp Asn Ser Gln Gly Phe Trp Met Phe Asp Ser
        275                 280                 285

Thr Ser Ala Thr Val Asn Gly Lys Ser Ile Ala Arg Ala Gly Asn Lys
    290                 295                 300

Ala Ile Ala Asp Thr Gly Thr Thr Leu Ala Leu Val Asp Asp Glu Thr
305                 310                 315                 320

Cys Gln Ala Val Tyr Asp Ala Ile Pro Gly Ala Lys Tyr Asp Asn Ala
                325                 330                 335

Ser Gln Gly Trp Ile Phe Pro Ser Asn Thr Pro Ala Asp Lys Leu Pro
            340                 345                 350

Val Val Ser Phe Ala Val Gly Glu Lys Gln Phe Val Val Gln Lys Glu
        355                 360                 365
```

```
Asp Leu Gly Phe Ala Glu Ala Lys Ser Gly Tyr Val Tyr Gly Gly Ile
    370                 375                 380

Gln Ser Arg Gly Thr Met Thr Met Asp Ile Leu Gly Asp Thr Phe Leu
385                 390                 395                 400

Lys Ala Ile Tyr Ala Val Ser Asp Met Leu Phe Phe Gly Val His Ser
                405                 410                 415

Cys Thr Asn
```

<210> 498
<211> 420
<212> PRT
<213> Aspergillus oryzae

<400> 498

```
Met Ala Ser Lys Ile Phe Leu Ile Glu Asn Pro Asn Tyr Cys Lys Ser
1               5                   10                  15

Gly Ile Lys Ser Tyr Val His Leu Ile Arg Lys Tyr Arg Leu His Pro
            20                  25                  30

Thr Lys Asn Gly Pro Tyr Ser Ile Gly Arg Ala Ile His Gln Thr Gly
        35                  40                  45

Arg Pro Phe Thr Asp Lys Pro Ile Gly Gly Arg Val Arg Phe His Asp
    50                  55                  60

Val Met Arg Lys Gln Thr Ser Asp Asp Gln Leu Gln Gln Val Glu Lys
65                  70                  75                  80

Asp Asp Ile Gln Asn Asp Ala Ala Phe Phe Met Pro Val Ser Ile Gly
                85                  90                  95

Thr Pro Ala Gln Thr Phe Asn Leu Val Leu Asp Thr Ala Ser Val Asp
            100                 105                 110

Phe Trp Val Arg Ser Ser Glu Leu Pro Ala Asp Thr Leu Pro Lys Gly
        115                 120                 125

Glu Glu Glu Ser His Thr Phe Asp Pro Glu Lys Ser Ser Thr Phe Lys
    130                 135                 140

Asn Ile Glu Asp Ser Pro Trp Lys Val Thr Tyr Val Asp Gly Ser Ser
145                 150                 155                 160

Val Ser Gly Ser Ile Gly Thr Glu Asp Ile Thr Ile Gly Gly Val Ala
                165                 170                 175
```

```
Phe Lys Thr Gln Pro Val Gln Leu Ala Lys Thr Met Ser Pro Met Phe
            180                 185                 190

Thr Gln Phe Ser Ala Asp Gly Val Leu Gly Leu Ala Phe Gly His Ile
        195                 200                 205

Asn His Pro Gln Gln Asp Ile Lys Ala Leu Ala Glu Arg Leu Asn Thr
    210                 215                 220

Arg Asp Asp Arg Glu Gln Ser Ala Lys Leu Phe Thr Ala Lys Phe Gly
225                 230                 235                 240

Ser Trp Gly Asp Ser Asp Leu Lys Lys Ser Phe Cys Thr Phe Gly Ser
                245                 250                 255

Ile Asp Glu Asp Ala Val Arg Tyr Cys Gly His Asp Val His His Thr
            260                 265                 270

Pro Ile Asp Asn Ser Arg Gly Tyr Trp Met Phe Glu Ser Pro Ser Ala
        275                 280                 285

Thr Val Gly Gly Lys Pro Met Ser Arg Ser Glu Asn Lys Ala Val Val
    290                 295                 300

Asp Thr Asp Ala Ala Leu Thr Leu Leu Asp Asp Gln Thr Cys Gln Ala
305                 310                 315                 320

Ile Tyr Asp Ser Ile Pro Gly Ala Phe Tyr Asp Ser Glu Thr Gln Gly
                325                 330                 335

Phe Leu Ile Pro Ser Asp Ile Asn Val Asp Gln Leu Pro Val Val Gln
            340                 345                 350

Leu Ala Val Gly Glu Lys Ser Phe Ala Met Ser Lys Glu Ser Leu Met
        355                 360                 365

Phe Ala Glu Ala Lys Pro Gly Tyr Ile Tyr Gly Gly Val Gln Ser Arg
    370                 375                 380

Gly Ser Leu Glu Phe Asp Val Leu Gly Gly Thr Phe Leu Asp Gly Leu
385                 390                 395                 400

Tyr Ala Ile Phe Asp Phe Gly Ser Leu Arg Phe Gly Ala Val Gln Ala
                405                 410                 415

Lys Thr Lys Val
            420
```

<210> 499
<211> 397
<212> PRT
<213> Myceliophthora thermophila

<400> 499

```
Met Lys Asp Ala Phe Leu Leu Thr Ala Ala Val Leu Leu Gly Ser Ala
1               5                  10                  15

Gln Gly Ala Val His Lys Met Lys Leu Gln Lys Ile Pro Leu Ser Glu
            20                  25                  30

Gln Leu Glu Ala Val Pro Ile Asn Thr Gln Leu Glu His Leu Gly Gln
        35                  40                  45

Lys Tyr Met Gly Leu Arg Pro Arg Glu Ser Gln Ala Asp Ala Ile Phe
    50                  55                  60

Lys Gly Met Val Ala Asp Val Lys Gly Asn His Pro Ile Pro Ile Ser
65                  70                  75                  80

Asn Phe Met Asn Ala Gln Tyr Phe Ser Glu Ile Thr Ile Gly Thr Pro
                85                  90                  95

Pro Gln Ser Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp
            100                 105                 110

Val Pro Ser Val Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Ser Lys
        115                 120                 125

Tyr Asp Ser Ser Ala Ser Ser Thr Tyr Lys Lys Asn Gly Thr Ser Phe
    130                 135                 140

Glu Ile Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp
145                 150                 155                 160

Thr Val Ser Ile Gly Asp Ile Thr Ile Gln Gly Gln Asp Phe Ala Glu
                165                 170                 175

Ala Thr Ser Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly
            180                 185                 190

Ile Leu Gly Leu Gly Tyr Asp Arg Ile Ser Val Asn Gly Ile Val Pro
        195                 200                 205

Pro Phe Tyr Lys Met Val Glu Gln Lys Leu Ile Asp Glu Pro Val Phe
    210                 215                 220

Ala Phe Tyr Leu Ala Asp Thr Asn Gly Gln Ser Glu Val Val Phe Gly
225                 230                 235                 240

Gly Val Asp His Asp Lys Tyr Lys Gly Lys Ile Thr Thr Ile Pro Leu
                245                 250                 255

Arg Arg Lys Ala Tyr Trp Glu Val Asp Phe Asp Ala Ile Ser Tyr Gly
```

260 265 270

Asp Asp Thr Ala Glu Leu Glu Asn Thr Gly Ile Ile Leu Asp Thr Gly
275 280 285

Thr Ser Leu Ile Ala Leu Pro Ser Gln Leu Ala Glu Met Leu Asn Ala
290 295 300

Gln Ile Gly Ala Lys Lys Ser Tyr Thr Gly Gln Tyr Thr Ile Asp Cys
305 310 315 320

Asn Lys Arg Asp Ser Leu Lys Asp Val Thr Phe Asn Leu Ala Gly Tyr
325 330 335

Asn Phe Thr Leu Gly Pro Tyr Asp Tyr Val Leu Glu Val Gln Gly Ser
340 345 350

Cys Ile Ser Thr Phe Met Gly Met Asp Phe Pro Ala Pro Thr Gly Pro
355 360 365

Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Tyr Tyr Ser Ile Tyr
370 375 380

Asp Leu Gly Ala Asp Thr Val Gly Leu Ala Glu Ala Lys
385 390 395

<210> 500
<211> 398
<212> PRT
<213> Penicillium chrysogenum

<400> 500

Met Lys Ser Phe Thr Leu Leu Thr Ala Ser Ala Leu Leu Gly Ser Ala
1 5 10 15

Ala Ala Glu Val His Arg Leu Lys Leu Asn Lys Val Pro Leu Ala Glu
20 25 30

Gln Leu Asn Thr His Asn Ile Asp Ala His Val His Asn Leu Gly Gln
35 40 45

Lys Tyr Met Gly Ile Arg Pro Glu Lys His Gln Asp Leu Phe His Asp
50 55 60

Thr Ser Phe Asn Pro Ala Ala Gly His Asp Val Leu Val Asp Asn Phe
65 70 75 80

Leu Asn Ala Gln Tyr Phe Ser Glu Ile Ser Ile Gly Thr Pro Pro Gln
85 90 95

Thr Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro
100 105 110

```
Ser Ser Gln Cys Ser Ser Ile Ala Cys Phe Leu His Ser Lys Tyr Asp
        115                 120                 125

Ser Ser Ser Ser Ser Thr Tyr Glu Lys Asn Gly Thr Glu Phe Glu Ile
    130                 135                 140

Arg Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Arg Asp Thr Leu
145                 150                 155                 160

Gln Ile Gly Asp Leu Lys Val Lys Gly Gln Asp Phe Ala Glu Ala Thr
                165                 170                 175

Asn Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu
            180                 185                 190

Gly Leu Gly Tyr Asp Thr Ile Ser Val Asn Lys Met Val Pro Pro Phe
        195                 200                 205

Tyr His Met Ile Asn Gln Lys Leu Val Asp Glu Pro Val Phe Ala Phe
    210                 215                 220

Tyr Leu Gly Asp Ala Asn Lys Asp Gly Asp Asn Ser Val Ala Thr Phe
225                 230                 235                 240

Gly Gly Ile Asp Glu Ser His Tyr Thr Gly Glu Leu Ile Lys Ile Pro
                245                 250                 255

Leu Arg Arg Lys Ala Tyr Trp Glu Val Glu Leu Asn Ser Ile Ala Leu
            260                 265                 270

Gly Asp Asn Val Ala Glu Leu Glu Asn Thr Gly Val Ile Leu Asp Thr
        275                 280                 285

Gly Thr Ser Leu Ile Ala Leu Pro Ser Thr Met Ala Glu Leu Leu Asn
    290                 295                 300

Lys Glu Ile Gly Ala Thr Lys Gly Phe Thr Gly Gln Tyr Ser Val Glu
305                 310                 315                 320

Cys Asp Lys Arg Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Gly Gly
                325                 330                 335

His Lys Phe Thr Ile Gly Pro Tyr Asp Tyr Val Leu Glu Val Gln Gly
            340                 345                 350

Ser Cys Ile Ser Ser Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly
        355                 360                 365

Pro Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Arg Trp Tyr Ser Val
    370                 375                 380
```

```
Tyr Asp Val Gly Asn Asn Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395


<210>  501
<211>  397
<212>  PRT
<213>  Aspergillus oryzae

<400>  501

Met Lys Ser Thr Leu Val Thr Ala Ser Val Leu Leu Gly Cys Ala Ser
1               5                   10                  15


Ala Glu Val His Lys Leu Lys Leu Asn Lys Val Pro Val Ser Glu Gln
            20                  25                  30


Phe Asn Leu His Asn Ile Asp Thr His Val Gln Ala Leu Gly Gln Lys
        35                  40                  45


Tyr Met Gly Ile Arg Pro Asn Ile Lys Gln Asp Leu Leu Asn Glu Asn
    50                  55                  60


Pro Ile Asn Asp Met Gly Arg His Asp Val Leu Val Asp Asn Phe Leu
65                  70                  75                  80


Asn Ala Gln Tyr Phe Ser Glu Ile Glu Ile Gly Thr Pro Pro Gln Lys
                85                  90                  95


Phe Lys Val Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser
            100                 105                 110


Ser Glu Cys Gly Ser Ile Ala Cys Tyr Leu His Asn Lys Tyr Asp Ser
        115                 120                 125


Ser Ser Ser Ser Thr Tyr Gln Lys Asn Gly Ser Glu Phe Ala Ile Lys
    130                 135                 140


Tyr Gly Ser Gly Ser Leu Ser Gly Phe Val Ser Gln Asp Thr Leu Lys
145                 150                 155                 160


Ile Gly Asp Leu Lys Val Lys Asp Gln Leu Phe Ala Glu Ala Thr Ser
                165                 170                 175


Glu Pro Gly Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu Gly
            180                 185                 190


Leu Gly Phe Asp Thr Ile Ser Val Asn Lys Ile Pro Pro Pro Phe Tyr
        195                 200                 205


Ser Met Leu Asp Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe Tyr
    210                 215                 220
```

```
Leu Gly Asp Thr Asn Lys Glu Gly Asp Asp Ser Val Ala Thr Phe Gly
225                 230                 235                 240

Gly Val Asp Lys Asp His Tyr Thr Gly Glu Leu Val Lys Ile Pro Leu
                245                 250                 255

Arg Arg Lys Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Leu Gly
            260                 265                 270

Asp Ser Val Ala Glu Leu Asp Asn Thr Gly Val Ile Leu Asp Thr Gly
        275                 280                 285

Thr Ser Leu Ile Ala Leu Pro Thr Thr Leu Ala Glu Leu Ile Asn Lys
    290                 295                 300

Glu Ile Gly Ala Lys Lys Gly Phe Thr Gly Gln Tyr Ser Val Asp Cys
305                 310                 315                 320

Asp Lys Arg Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Ser Gly Tyr
                325                 330                 335

Asn Phe Thr Ile Gly Pro Tyr Asp Tyr Thr Leu Glu Val Gln Gly Ser
            340                 345                 350

Cys Ile Ser Ala Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly Pro
        355                 360                 365

Leu Ala Ile Leu Gly Asp Ala Phe Leu Arg Lys Trp Tyr Ser Val Tyr
    370                 375                 380

Asp Leu Gly Asn Gly Ala Val Gly Leu Ala Lys Ala Lys
385                 390                 395


<210>  502
<211>  394
<212>  PRT
<213>  Aspergillus nidulans

<400>  502

Met Lys Ala Ser Leu Leu Thr Ala Ser Val Leu Leu Gly Tyr Ala Ser
1               5                   10                  15

Ala Glu Val His Lys Leu Lys Leu Asn Lys Val Pro Leu Thr Glu Gln
            20                  25                  30

Phe Ile Thr Arg Asn Ile Ala Asp His Ala Asn Ala Leu Gly Gln Lys
        35                  40                  45

Tyr Met Gly Gln Phe Gln Gln His Val Leu Glu Asp Glu Pro Val Asn
    50                  55                  60
```

```
Ala Met Arg Gly His Asp Val Leu Val Asp Asn Phe Met Asn Ala Gln
65                  70                  75                  80

Tyr Phe Ser Glu Ile Gln Leu Gly Thr Pro Pro Gln Thr Phe Lys Val
                85                  90                  95

Val Leu Asp Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Ser Glu Cys
            100                 105                 110

Gly Ser Ile Ala Cys Tyr Leu His Gln Lys Phe Asp Ser Ser Ala Ser
        115                 120                 125

Ser Thr Tyr Lys Lys Asn Gly Ser Glu Phe Ala Ile Lys Tyr Gly Ser
    130                 135                 140

Gly Ser Leu Ser Gly Phe Val Ser Arg Asp Asn Leu Gln Ile Gly Asp
145                 150                 155                 160

Leu Lys Val Lys Gly Gln Asp Phe Ala Glu Ala Thr Ser Glu Pro Gly
                165                 170                 175

Leu Ala Phe Ala Phe Gly Arg Phe Asp Gly Ile Leu Gly Leu Gly Phe
            180                 185                 190

Asp Thr Ile Ser Val Asn Arg Ile Val Pro Pro Phe Tyr Asn Met Ile
        195                 200                 205

His Gln Gly Leu Leu Asp Glu Pro Val Phe Ala Phe Tyr Leu Gly Asp
    210                 215                 220

Ala Asn Lys Asp Gly Asp Ser Ser Val Ala Thr Phe Gly Gly Ile Asp
225                 230                 235                 240

Lys Asp His Tyr Glu Gly Glu Leu Ile Lys Ile Pro Leu Arg Arg Lys
                245                 250                 255

Ala Tyr Trp Glu Val Asp Leu Asp Ala Ile Ala Leu Gly Asp Glu Val
            260                 265                 270

Ala Glu Leu Glu Asn Thr Gly Val Ile Leu Asp Thr Gly Thr Ser Leu
        275                 280                 285

Ile Ala Leu Pro Ser Asn Leu Ala Glu Met Ile Asn Thr Glu Ile Gly
    290                 295                 300

Ala Thr Lys Gly Phe Thr Gly Gln Tyr Thr Ile Asp Cys Ala Lys Arg
305                 310                 315                 320

Asp Ser Leu Pro Asp Leu Thr Phe Thr Leu Thr Gly His Asn Phe Thr
                325                 330                 335
```

```
Ile Gly Pro Tyr Asp Tyr Thr Leu Glu Val Gln Gly Ser Cys Ile Ser
            340                 345                 350

Ala Phe Met Gly Met Asp Phe Pro Glu Pro Val Gly Pro Leu Ala Ile
        355                 360                 365

Leu Gly Asp Ala Phe Leu Arg Lys Trp Tyr Ser Val Tyr Asp Leu Gly
    370                 375                 380

Asn Gly Ala Val Gly Leu Ala Lys Ala Lys
385                 390
```

<210> 503
<211> 454
<212> PRT
<213> Myceliophthora thermophila

<400> 503

```
Met Lys Phe Ala Ala Leu Ala Leu Ala Ala Ser Leu Val Ala Ala Ala
1               5                   10                  15

Pro Arg Val Val Lys Val Asp Pro Ser Asp Ile Lys Pro Arg Arg Leu
            20                  25                  30

Gly Gly Thr Lys Phe Lys Leu Gly Gln Ile His Asn Asp Leu Phe Arg
        35                  40                  45

Gln His Gly Arg Gly Pro Arg Ala Leu Ala Lys Ala Tyr Glu Lys Tyr
    50                  55                  60

Asn Ile Glu Leu Pro Pro Asn Leu Leu Glu Val Val Gln Arg Ile Leu
65                  70                  75                  80

Lys Asp Leu Gly Ile Glu Pro His Ser Lys Lys Ile Pro Gly Ser Lys
                85                  90                  95

Ser Ser Tyr Gly Asn Gly Ala Pro Tyr Thr Asn Glu Thr Asp Asp Ser
            100                 105                 110

Gly Glu Val Ser Ala Ile Pro Gln Leu Phe Asp Val Glu Tyr Leu Ala
        115                 120                 125

Pro Val Gln Ile Gly Thr Pro Pro Gln Thr Leu Met Leu Asn Phe Asp
    130                 135                 140

Thr Gly Ser Ser Asp Leu Trp Val Phe Ser Ser Glu Thr Pro Ser Arg
145                 150                 155                 160

Gln Gln Asn Gly Gln Lys Ile Tyr Lys Ile Glu Glu Ser Ser Thr Ala
                165                 170                 175

Arg Arg Leu Ser Asn His Thr Trp Ser Ile Gln Tyr Gly Asp Gly Ser
```

```
            180                 185                 190

Arg Ser Ala Gly Asn Val Tyr Leu Asp Thr Val Ser Val Gly Gly Val
        195                 200                 205

Asn Val Phe Asn Gln Ala Val Glu Ser Ala Thr Phe Val Ser Ser Ser
    210                 215                 220

Phe Val Thr Asp Ala Ala Ser Ser Gly Leu Leu Gly Leu Gly Phe Asp
225                 230                 235                 240

Ser Ile Asn Thr Val Lys Pro Thr Lys Gln Lys Thr Phe Ile Ser Asn
                245                 250                 255

Ala Leu Glu Ser Leu Glu Met Gly Leu Phe Thr Ala Asn Leu Lys Lys
            260                 265                 270

Ala Glu Pro Gly Asn Tyr Asn Phe Gly Phe Ile Asp Glu Thr Glu Phe
        275                 280                 285

Val Gly Pro Leu Ser Phe Ile Asp Val Asp Ser Thr Asp Gly Phe Trp
    290                 295                 300

Gln Phe Asp Ala Thr Gly Tyr Ser Ile Gln Leu Pro Glu Pro Ser Gly
305                 310                 315                 320

Asn Ile Thr Gly Thr Pro Phe Arg Ala Val Ala His Thr Ala Ile Ala
                325                 330                 335

Asp Thr Gly Thr Thr Leu Leu Leu Leu Pro Pro Gly Ile Ala Gln Ala
            340                 345                 350

Tyr Tyr Trp Gln Val Gln Gly Ala Arg Gln Ala Pro Glu Val Gly Gly
        355                 360                 365

Trp Val Met Pro Cys Asn Ala Ser Met Pro Asp Leu Thr Leu His Ile
    370                 375                 380

Gly Thr Tyr Lys Ala Val Ile Pro Gly Glu Leu Ile Pro Tyr Ala Pro
385                 390                 395                 400

Val Asp Thr Asp Asp Met Asp Thr Ala Thr Val Cys Tyr Gly Gly Ile
                405                 410                 415

Gln Ser Ala Ser Gly Met Pro Phe Ala Ile Tyr Gly Asp Ile Phe Phe
            420                 425                 430

Lys Ala Gln Phe Thr Val Phe Asp Val Glu Asn Leu Lys Leu Gly Phe
        435                 440                 445

Ala Pro Lys Pro Glu Leu
```

450

<210> 504
<211> 545
<212> PRT
<213> Aspergillus nidulans

<400> 504

Met Ser Val Leu Leu Val Phe Ser Leu Val Thr Phe Ala Leu Gln Gly
1 5 10 15

Leu Cys Ser Leu Ser Leu His Glu Ser Asp Ser Pro His Val Leu Gln
20 25 30

Leu Gly Leu Arg Arg Asn Gln His Asn Asp Pro Val Gly Arg Asp Arg
35 40 45

Arg Arg Phe Lys Arg Gln Thr Gly Thr Val Ala Val Asp Leu His Gly
50 55 60

Asp Ser Met Gly Gly Asp Ile Tyr Ser Thr Asn Leu Thr Ile Gly Asp
65 70 75 80

Pro Pro Gln Ala Val Glu Val Ser Val Asp Thr Gly Ser Ala Asp Leu
85 90 95

Trp Val Val Tyr Ser Glu Asn Pro Val Cys Asn Val Arg Gly Ala Arg
100 105 110

Cys Asp Asp Ser Gly Thr Tyr Asp Pro Thr Ala Ser Thr Ser Phe Asp
115 120 125

Gly Leu Ser Asp Glu Phe Ala Ile Glu Tyr Gly Asp Ser Ser Trp Ala
130 135 140

Glu Gly Tyr Tyr Gly Ile Asp Thr Leu Thr Val Ala Asp Ala Glu Val
145 150 155 160

Ser Glu Val Gln Phe Ala Val Ala Val Glu Ser Ser Ile Asp Lys Gly
165 170 175

Ile Leu Gly Ile Gly Tyr Ser Thr Asn Val Val Ser Thr Tyr Arg Tyr
180 185 190

Pro Asn Leu Pro Glu Arg Leu Val Ala Ser Asn Ile Thr Ser Ser Asn
195 200 205

Ala Tyr Ser Leu Trp Leu Asn Arg Leu Gly Ser Asp Glu Gly Thr Ile
210 215 220

Leu Phe Gly Gly Val Asn Thr Ala His Tyr Thr Gly Pro Leu Arg Thr
225 230 235 240

```
Leu Pro Val Val Arg Tyr Asn Gly His Tyr Ile His Leu Trp Leu Thr
                245                 250                 255

Leu Thr Gly Met Gly Val Glu Ser Ala Ser Asp Asp Ile Thr Lys Ser
            260                 265                 270

Tyr Ser Glu Thr Arg Ser Thr Thr Gly Glu Gln Glu Phe Pro Phe Val
        275                 280                 285

Ala Leu Leu Asp Ser Gly Ala Thr Leu Thr Tyr Leu Pro Ser Asn Ile
    290                 295                 300

Val Ala Gln Ile Phe Ser Asp Leu Asp Val His Leu Tyr Glu Pro Glu
305                 310                 315                 320

Gln Phe Gly Tyr Val Pro Cys Asp Thr Tyr Leu Val Gly Arg Glu Asp
                325                 330                 335

Tyr Asn Leu Thr Phe Thr Phe Ser Gly Val Thr Ile Arg Val Pro Leu
            340                 345                 350

Arg Glu Leu Val Leu Arg Asp Ala Ile Ser Gly Pro Gly Arg Asp Ala
        355                 360                 365

Leu Gln Leu Pro Asn Asn Ala Asp Glu Glu Ser Cys Leu Phe Gly Ile
    370                 375                 380

Leu Pro Asn Thr Asp Leu Phe Pro Ile Leu Gly Asp Thr Phe Leu Arg
385                 390                 395                 400

Ser Ala Tyr Val Val Phe Asp Leu Asp Asn Asn Glu Ile Ser Leu Ala
                405                 410                 415

Gln Ala Asn Thr Ala Pro Gly Asp Asp Arg Ile Leu Glu Ile Gly Ser
            420                 425                 430

Gly Asp Asp Ala Val Pro Glu Ala Glu Asp Val Asp Asp Pro Val Thr
        435                 440                 445

Thr Ala Thr Val Ser Leu Gly Gly Ser Ser Leu Ile Leu Pro Thr Gly
    450                 455                 460

Trp Thr Asn Glu Pro Ile Phe Pro Ser Arg Thr Val Thr Thr Ser Thr
465                 470                 475                 480

Thr Ala Thr Ser Thr Gly Thr Asn Thr Gly Ser Gly Glu Asp Thr Glu
                485                 490                 495

Ala Thr Asp Ser Asp Gln Gly Thr Ser Gly Gly Thr Gly Thr Gln Ala
            500                 505                 510
```

```
Glu Gly Pro Val Ala Thr Asp Gly Ala Val Gly Val Gly Asn Ser Pro
        515                 520                 525

Leu Leu Ala Ile Ala Met Ala Ala Leu Val Leu Asn Met Val Leu Ala
    530                 535                 540

Leu
545
```

<210> 505
<211> 410
<212> PRT
<213> Aspergillus niger

<400> 505

```
Met Lys Ser Thr Thr Leu Leu Ser Leu Ala Trp Ala Thr Gln Ser Ala
1               5                   10                  15

Tyr Ser Leu Ser Ile His Glu Arg Asp Glu Pro Ala Thr Leu Gln Phe
            20                  25                  30

Asn Phe Glu Arg Arg Gln Ile Ala Asp Arg Ser Arg Arg Lys Arg Ser
        35                  40                  45

Thr Ala Ser Ala Asp Leu Val Asn Leu Ala Thr Asn Leu Gly Tyr Thr
    50                  55                  60

Met Asn Leu Thr Leu Gly Thr Pro Gly Gln Glu Val Ser Val Thr Leu
65                  70                  75                  80

Asp Thr Gly Ser Ser Asp Leu Trp Val Asn Gly Ala Asn Ser Ser Val
                85                  90                  95

Cys Pro Cys Thr Asp Tyr Gly Ser Tyr Asn Ser Ser Ala Ser Ser Thr
            100                 105                 110

Tyr Thr Phe Val Asn Asp Glu Phe Tyr Ile Gln Tyr Val Asp Gly Ser
        115                 120                 125

Glu Ala Thr Gly Asp Tyr Val Asn Asp Thr Leu Lys Phe Ser Asn Val
    130                 135                 140

Thr Leu Thr Asn Phe Gln Phe Ala Val Ala Tyr Asp Gly Asp Ser Glu
145                 150                 155                 160

Glu Gly Val Leu Gly Ile Gly Tyr Ala Ser Asn Glu Ala Ser Gln Ala
                165                 170                 175

Thr Val Gly Gly Gly Glu Tyr Thr Asn Phe Pro Glu Ala Leu Val Asp
            180                 185                 190
```

```
Gln Gly Ala Ile Asn Trp Pro Ala Tyr Ser Leu Trp Leu Asp Asp Leu
        195                 200                 205

Asp Glu Gly Lys Gly Thr Ile Leu Phe Gly Gly Val Asn Thr Ala Lys
    210                 215                 220

Tyr Tyr Gly Ser Leu Gln Thr Leu Pro Ile Val Ser Ile Glu Asp Met
225                 230                 235                 240

Tyr Val Glu Phe Ala Val Asn Leu Thr Ala Val His Leu Glu Lys Asn
                245                 250                 255

Gly Asn Ser Val Ser Val Asn Asn Ser Ala Thr Gln Phe Pro Ile Pro
            260                 265                 270

Ala Val Leu Asp Ser Gly Thr Ala Leu Thr Tyr Ile Pro Thr Ser Ala
        275                 280                 285

Ala Ala Ser Ile Tyr Glu Ala Val Gly Ala Gln Tyr Leu Ser Glu Tyr
    290                 295                 300

Gly Tyr Gly Val Ile Glu Cys Gly Val Lys Asp Glu Asp Phe Thr Phe
305                 310                 315                 320

Leu Phe Asp Phe Gly Ser Phe Asn Met Ser Val Asp Ile Ser Glu Met
                325                 330                 335

Ile Leu Glu Ala Ser Ser Asp Met Thr Asp Met Asn Val Cys Thr Phe
            340                 345                 350

Gly Leu Ala Val Ile Glu Asn Glu Ala Leu Leu Gly Asp Thr Phe Leu
        355                 360                 365

Arg Ser Ala Tyr Val Val Tyr Asp Leu Gly Asn Asn Glu Ile Ser Leu
    370                 375                 380

Ala Lys Ala Asn Phe Asn Pro Gly Glu Asp His Val Leu Glu Ile Gly
385                 390                 395                 400

Thr Gly Ser Asp Ala Val Pro Lys Ala Thr
                405                 410
```

<210> 506
<211> 486
<212> PRT
<213> Aspergillus oryzae

<400> 506

```
Met Met Arg Gly Ala Ser Leu Leu Pro Val Ala Leu Ala Ala Leu Ser
1               5                   10                  15
```

```
Cys Val Asp Ala Leu Ser Leu His Arg Arg Asp Thr Pro Ala Thr Val
            20                  25                  30

Glu Leu Pro Ile Glu Arg Arg Gln His Ala Gly Gly Leu Gln Lys Arg
        35                  40                  45

Asp Ser Thr Leu Asn Leu Pro Leu Ile Asn Tyr Tyr Asp Ser Phe Tyr
    50                  55                  60

Ile Leu Asn Leu Thr Leu Gly Thr Pro Ala Gln Gln Phe Ala Val Ala
65                  70                  75                  80

Leu Asp Thr Gly Ser Ser Asp Leu Trp Val Asn Val Ala Asn Ser Ser
                85                  90                  95

Tyr Cys Ser Ser Arg Thr Asn Pro Cys Lys Pro Phe Gly Leu Tyr Asp
            100                 105                 110

Pro Asp Ala Ser Ser Thr Tyr Lys Asn Leu Gly Val Glu Phe Asn Ala
        115                 120                 125

Thr Tyr Gly Asp Gly Thr Asn Ala Tyr Gly Tyr Tyr Ala Thr Asp Glu
    130                 135                 140

Leu Gly Leu Gly Asp Val Asn Val Asp Asp Met Gln Phe Gly Val Ala
145                 150                 155                 160

Glu Ser Thr Thr Ile Thr Gln Gly Ile Val Gly Val Ala Tyr Asp Thr
                165                 170                 175

Leu Thr Asn Glu Ala Ser His Glu Gly Lys Thr Tyr Val Asn Leu Pro
            180                 185                 190

Gln Ala Leu Val Asn Ser Gly Ala Ile Lys Ser Pro Ala Tyr Ser Leu
        195                 200                 205

Trp Leu Asn Asp Pro Gln Ala Ser Arg Gly Ser Ile Leu Phe Gly Gly
    210                 215                 220

Val Asn Lys Ala Lys Tyr Lys Gly Glu Leu Gln Thr Ile Pro Ile Val
225                 230                 235                 240

Arg Thr Leu Arg Gly Tyr Ser Tyr Leu Ala Val Thr Leu Thr Gly Val
                245                 250                 255

Ser Val Glu Gln Gly Lys Glu Ser Glu Asp Tyr Ser Ser Arg Leu Pro
            260                 265                 270

Ile Val Val Leu Leu Asp Ser Gly Thr Ser Leu Thr Tyr Leu Pro Asp
        275                 280                 285
```

```
Ser Leu Val Asp Glu Leu Tyr Lys Thr Phe Asn Ala Thr Phe Leu Glu
    290                 295                 300

Asp Asp Gly Leu Ala Tyr Val Asp Cys Glu Leu Met Lys Lys Asp Tyr
305                 310                 315                 320

Thr Val Asn Phe Asp Phe Ser Gly Ala Thr Ile Ala Val Gly Ile Ser
                325                 330                 335

Glu Leu Val Leu Lys Ala Val Ala Glu Asp Phe Pro Leu Gly Thr Cys
            340                 345                 350

Ala Phe Gly Val Val Pro Ser Gly Asp Ser Gln Asp Ala Met Tyr Ile
        355                 360                 365

Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Gly
    370                 375                 380

Asn Asn Glu Ile Ser Leu Ala Asn Thr Asn Phe Ser Pro Gly Asp Asp
385                 390                 395                 400

Asp Ile Leu Glu Ile Gly Thr Gly Thr Ser Ala Val Pro Gly Ala Thr
                405                 410                 415

Pro Val Glu Ser Pro Val Thr Ser Ala Thr Val Ala Ser Ala Thr Asp
            420                 425                 430

Ile Val His Thr Val Met Val Gly Gly Thr Lys Ala Thr Ala Thr Asp
        435                 440                 445

Ser Asn Ser Gly Ala Ala Glu Thr Ser Ser Ser Ser Gly Ile Ala Ala
    450                 455                 460

Leu Pro Thr Ser Asn Thr Arg His Leu Leu Ser Gly Leu Ala Gly Ala
465                 470                 475                 480

Gly Leu Leu Leu Ala Leu
                485


<210>  507
<211>  488
<212>  PRT
<213>  Trichoderma reesei

<400>  507

Met Arg Ala Ser Pro Leu Ala Val Ala Gly Val Ala Leu Ala Ser Ala
1               5                   10                  15

Ala Gln Ala Gln Val Val Gln Phe Asp Ile Glu Lys Arg His Ala Pro
            20                  25                  30

Arg Leu Ser Arg Arg Asp Gly Thr Ile Asp Gly Thr Leu Ser Asn Gln
```

```
        35                  40                  45

Arg Val Gln Gly Gly Tyr Phe Ile Asn Val Gln Val Gly Ser Pro Gly
    50                  55                  60

Gln Asn Ile Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val Trp Val
65                  70                  75                  80

Pro Ser Ser Thr Ala Ala Ile Cys Thr Gln Val Ser Glu Arg Asn Pro
                85                  90                  95

Gly Cys Gln Phe Gly Ser Phe Asn Pro Asp Asp Ser Asp Thr Phe Asp
            100                 105                 110

Glu Val Gly Gln Gly Leu Phe Asp Ile Thr Tyr Val Asp Gly Ser Ser
        115                 120                 125

Ser Lys Gly Asp Tyr Phe Gln Asp Asn Phe Gln Ile Asn Gly Val Thr
    130                 135                 140

Val Lys Asn Leu Thr Met Gly Leu Gly Leu Ser Ser Ser Ile Pro Asn
145                 150                 155                 160

Gly Leu Ile Gly Val Gly Tyr Met Asn Asp Glu Ala Ser Val Ser Thr
                165                 170                 175

Thr Arg Ser Thr Tyr Pro Asn Leu Pro Ile Val Leu Gln Gln Gln Lys
            180                 185                 190

Leu Ile Asn Ser Val Ala Phe Ser Leu Trp Leu Asn Asp Leu Asp Ala
        195                 200                 205

Ser Thr Gly Ser Ile Leu Phe Gly Gly Ile Asp Thr Glu Lys Tyr His
    210                 215                 220

Gly Asp Leu Thr Ser Ile Asp Ile Ile Ser Pro Asn Gly Gly Lys Thr
225                 230                 235                 240

Phe Thr Glu Phe Ala Val Asn Leu Tyr Ser Val Gln Ala Thr Ser Pro
                245                 250                 255

Ser Gly Thr Asp Thr Leu Ser Thr Ser Glu Asp Thr Leu Ile Ala Val
            260                 265                 270

Leu Asp Ser Gly Thr Thr Leu Thr Tyr Leu Pro Gln Asp Met Ala Glu
        275                 280                 285

Glu Ala Trp Asn Glu Val Gly Ala Glu Tyr Ser Asn Glu Leu Gly Leu
    290                 295                 300

Ala Val Val Pro Cys Ser Val Gly Asn Thr Asn Gly Phe Phe Ser Phe
```

305 310 315 320

Thr Phe Ala Gly Thr Asp Gly Pro Thr Ile Asn Val Thr Leu Ser Glu
325 330 335

Leu Val Leu Asp Leu Phe Ser Gly Gly Pro Ala Pro Arg Phe Ser Ser
340 345 350

Gly Pro Asn Lys Gly Gln Ser Ile Cys Glu Phe Gly Ile Gln Asn Gly
355 360 365

Thr Gly Ser Pro Phe Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Phe
370 375 380

Val Val Tyr Asp Leu Val Asn Asn Gln Ile Ala Ile Ala Pro Thr Asn
385 390 395 400

Phe Asn Ser Thr Arg Thr Asn Val Val Ala Phe Ala Ser Ser Gly Ala
405 410 415

Pro Ile Pro Ser Ala Thr Ala Ala Pro Asn Gln Ser Arg Thr Gly His
420 425 430

Ser Ser Ser Thr His Ser Gly Leu Ser Ala Ala Ser Gly Phe His Asp
435 440 445

Gly Asp Asp Glu Asn Ala Gly Ser Leu Thr Ser Val Phe Ser Gly Pro
450 455 460

Gly Met Ala Val Val Gly Met Thr Ile Cys Tyr Thr Leu Leu Gly Ser
465 470 475 480

Ala Ile Phe Gly Ile Gly Trp Leu
485

<210> 508
<211> 488
<212> PRT
<213> Trichoderma virens

<400> 508

Met Lys Ala Ser Pro Leu Ala Val Ala Gly Val Val Leu Ala Ser Ala
1 5 10 15

Ala Gln Ala Gln Val Val Gln Phe Asp Ile Glu Lys Arg His Ala Pro
20 25 30

Ser Leu Arg Arg Arg Asp Ala Thr Ile Asp Ala Thr Leu Ser Asn Glu
35 40 45

Lys Val Gln Gly Gly Tyr Phe Ile Asn Val Gln Val Gly Thr Pro Gly
50 55 60

```
Gln Asn Ile Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val Trp Val
65                  70                  75                  80

Pro Ala Ser Thr Ala Ala Ile Cys Thr Glu Val Ser Gln Gln Asn Pro
                85                  90                  95

Gly Cys Thr Phe Gly Ser Phe Asn Pro Asp Asp Ser Ser Thr Phe Gln
            100                 105                 110

Val Val Gly Gln Asn Leu Phe Asp Ile Thr Tyr Val Asp Gly Ser Ser
        115                 120                 125

Ser Lys Gly Asp Tyr Ile Gln Asp Asn Phe Gln Ile Asn Gly Leu Thr
    130                 135                 140

Val Lys Asn Leu Thr Met Gly Leu Gly Leu Asp Thr Ser Ile Ser Asn
145                 150                 155                 160

Gly Leu Val Gly Val Gly Tyr Ile Asn Asp Glu Ala Ser Leu Gly Thr
                165                 170                 175

Thr Arg Ser Thr Tyr Pro Asn Leu Pro Val Val Leu Gln Gln Glu Lys
            180                 185                 190

Leu Ile Asn Thr Val Ala Phe Ser Leu Trp Leu Asn Asp Leu Asp Ala
        195                 200                 205

Ser Thr Gly Ser Ile Leu Phe Gly Gly Ile Asp Thr Glu Lys Tyr Gln
    210                 215                 220

Gly Glu Leu Thr Arg Ile Asn Ile Ile Ser Pro Asp Gly Gly Lys Thr
225                 230                 235                 240

Phe Thr Glu Phe Ala Val Asn Leu Tyr Ser Val Gln Ala Ser Ser Gln
                245                 250                 255

Ser Gly Thr Asp Thr Leu Ser Thr Ser Glu Asn Thr Leu Val Ala Val
            260                 265                 270

Leu Asp Ser Gly Thr Thr Leu Thr Tyr Leu Pro Gln Asp Met Ala Glu
        275                 280                 285

Glu Ala Trp Asn Glu Val Gly Ala Thr Phe Ser Ser Glu Leu Gly Leu
    290                 295                 300

Ala Val Val Pro Cys Ser Val Gly Asn Lys Asn Gly His Phe Ser Phe
305                 310                 315                 320

Lys Phe Ala Gly Ala Asp Gly Pro Thr Val Asn Val Thr Leu Ser Glu
                325                 330                 335
```

```
Leu Val Leu Asp Leu Phe Ser Gly Gly Pro Pro Pro Gln Phe Ser Ser
            340                 345                 350

Gly Pro Asn Lys Gly Gln Ser Ile Cys Glu Phe Gly Ile Gln Asn Thr
        355                 360                 365

Thr Asp Ala Pro Tyr Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Phe
    370                 375                 380

Val Thr Tyr Asp Leu Val Asn Asn Gln Ile Gly Ile Ala Pro Thr Asn
385                 390                 395                 400

Phe Asn Ser Thr Gln Thr Asn Ile Val Ala Phe Ala Ser Ser Gly Ala
                405                 410                 415

Pro Ile Pro Ser Ser Thr Ala Ala Pro Asn Gln Ser Asn Thr Gly His
            420                 425                 430

Ser Ser Ser Thr Gln Ser Gly Leu Ser Ala Ala Ser Gly Phe Gln Asp
        435                 440                 445

Gly Gly Asn Asp Asn Ala Ala Pro Leu Thr Ser Ala Phe Ser Gly Pro
    450                 455                 460

Gly Met Phe Val Val Gly Met Thr Ile Cys Tyr Thr Leu Leu Gly Ser
465                 470                 475                 480

Ala Val Phe Ser Phe Arg Trp Leu
                485


<210>  509
<211>  488
<212>  PRT
<213>  Trichoderma atraviride

<400>  509

Met Lys Ala Ser Pro Leu Ala Ala Ala Gly Val Ala Leu Ala Ser Thr
1               5                   10                  15

Ala Gln Ala Gln Val Val Gln Phe Asp Ile Gln Lys Arg Asp Gly Pro
            20                  25                  30

Asn Leu Arg Asp Leu Gly Arg Arg Ala Ala Thr Ile Asn Gly Val Leu
        35                  40                  45

Ser Asn Gln Gln Ile Gln Gly Gly Tyr Phe Leu Asn Val Glu Val Gly
    50                  55                  60

Thr Pro Pro Gln Asn Ile Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp
65                  70                  75                  80
```

```
Val Trp Val Pro Ser Ser Ser Ala Asp Ile Cys Thr Gln Val Ser Gln
                85                  90                  95

Arg Asn Pro Gly Cys Thr Phe Gly Ser Phe Asp Ser Asp Lys Ser Thr
            100                 105                 110

Ser Leu Arg Thr Val Gly Lys Asp Glu Phe Asp Ile Thr Tyr Val Asp
        115                 120                 125

Asn Ser Phe Ser Lys Gly Asp Tyr Ile Gln Asp Asp Phe His Ile Gly
    130                 135                 140

Gly Val Thr Val Ser Asn Leu Thr Met Gly Leu Gly Leu Asp Ser Ser
145                 150                 155                 160

Ile Ala Asn Gly Leu Ile Gly Val Gly Tyr Ile Asn Asp Glu Ala Ser
                165                 170                 175

Leu Ser Thr Ile Arg Ser Thr Tyr Pro Asn Leu Pro Val Val Leu Gln
            180                 185                 190

Gln Glu Lys Leu Ile Asn Thr Val Ala Tyr Ser Leu Trp Leu Asn Asp
        195                 200                 205

Leu Asp Ala Ser Ala Gly Ser Ile Leu Phe Gly Gly Ile Asp Thr Glu
    210                 215                 220

Lys Tyr Gln Gly Asp Leu Thr Lys Ile Asn Ile Gln Arg Ala Asp Asn
225                 230                 235                 240

Ser Asn Val Phe Thr Glu Phe Ala Val Glu Leu Phe Glu Val Gln Ala
                245                 250                 255

Thr Ser Pro Ser Gly Thr Asp Thr Leu Ser Thr Ser Val Asp Ser Leu
            260                 265                 270

Val Ala Val Leu Asp Ser Gly Thr Thr Leu Thr Tyr Leu Pro Gln Asp
        275                 280                 285

Met Ala Glu Gln Ala Trp Lys Glu Val Gly Ala Ser Phe Asn Glu Glu
    290                 295                 300

Phe Gly Leu Ala Val Val Pro Cys Ser Ile Arg Asn Val Asn Gly His
305                 310                 315                 320

Phe Ser Phe Thr Phe Ala Gly Ala Asp Gly Pro Lys Ile Asn Val Thr
                325                 330                 335

Met Ala Glu Leu Ala Leu Asp Leu Phe Ser Gly Gly Pro Gln Pro Lys
            340                 345                 350
```

```
Phe Ser Ser Gly Pro Asn Gln Gly Gln Ser Val Cys Glu Phe Gly Ile
        355                 360                 365

Gln Asn Thr Thr Gly Ser Pro Phe Leu Leu Gly Asp Thr Phe Leu Arg
    370                 375                 380

Ser Ala Phe Val Val Tyr Asp Leu Val Asn Asn Glu Ile Ala Ile Ala
385                 390                 395                 400

Pro Thr Asn Phe Asn Ser Thr Lys Thr Asn Val Val Ala Phe Ala Ser
                405                 410                 415

Ser Gly Ala Pro Ile Pro Ser Ala Thr Ser Ala Pro Asn Gln Ser Lys
            420                 425                 430

Ser Gly Pro Ser Ser Gly Thr Gly Gly Met Ser Ala Ala Ser Gly Phe
        435                 440                 445

Gln Asp Ser Asp Asn Ala Ala Pro Tyr Thr Ser Ala Phe Ser Gly Pro
    450                 455                 460

Gly Ala Ile Ile Val Gly Met Thr Ile Gly Tyr Thr Leu Leu Gly Gly
465                 470                 475                 480

Ala Ile Phe Gly Ala Gly Trp Leu
                485
```

<210> 510
<211> 504
<212> PRT
<213> Neurospora tetrasperma

<400> 510

```
Met Lys Gly Tyr Thr Ser Ser Ala Leu Leu Leu Gly Pro Ala Leu Leu
1               5                   10                  15

Ser Gln Leu Ala Leu Ala Gln Gln Ala Pro Ser Gly Val Val His Trp
            20                  25                  30

Gly Ile Gln Lys Arg His Ala Pro Asn Ala Pro Asn Arg Leu Leu Arg
        35                  40                  45

Arg Ala Gly Pro Thr His Gln Ala Ile Leu Gln Asn Glu Gln Ala Arg
    50                  55                  60

Gly Gly Tyr Phe Ala Thr Cys Glu Met Gly Thr Pro Gly Gln Lys Val
65                  70                  75                  80

Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val Trp Val Pro Asp Ser
                85                  90                  95
```

```
Thr Ala Ser Ile Cys Asn Lys Gly Ala Cys Asp Leu Gly Ser Phe Asp
            100                 105                 110

Pro Ser Lys Ser Glu Thr Tyr Thr Val Val Gly Gln Gly Glu Phe Asp
        115                 120                 125

Ile Ser Tyr Val Asp Gly Ser Ser Ser Lys Gly Asp Tyr Phe Thr Asp
    130                 135                 140

Val Phe Asn Ile Gly Gly Thr Thr Val Thr Asn Leu Thr Met Gly Leu
145                 150                 155                 160

Gly Ala Gln Thr Asp Ile Ala Tyr Gly Leu Val Gly Ile Gly Tyr Ala
                165                 170                 175

Ile Asn Glu Ala Ile Val Gly Asn Ser His Ser Leu Ser Ser Gln Tyr
            180                 185                 190

Pro Asn Leu Pro Val Ala Met Val Asp Asp Gly Leu Ile Asn Thr Ile
        195                 200                 205

Ala Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ala Asp Glu Gly Ser Ile
    210                 215                 220

Leu Phe Gly Gly Ile Asp Thr Lys Lys Tyr Lys Gly Asp Leu Thr Arg
225                 230                 235                 240

Ile Arg Ile Tyr Pro Ser Ser Asn Gly Tyr Tyr Phe Ser Phe Ile Val
                245                 250                 255

Ala Leu Thr Ser Leu Gln Ala Ile Ser Pro Ser Gly Asn Asp Thr Leu
            260                 265                 270

Thr Ser Gln Glu Phe Pro Ile Pro Val Val Leu Asp Ser Gly Thr Thr
        275                 280                 285

Leu Ser Tyr Leu Pro Gln Asp Ile Val Asp Gln Ile Trp Gln Glu Val
    290                 295                 300

Gly Ala Glu Tyr Ser Asp Arg Leu Glu Leu Ala Val Ile Pro Cys Ser
305                 310                 315                 320

Lys Lys Ser Ser Asn Gly Tyr Phe Ser Phe Gly Phe Ala Gly Pro Asp
                325                 330                 335

Gly Pro Arg Ile Thr Val Arg Met Asp Glu Leu Val Leu Asp Leu Thr
            340                 345                 350

Ser Gly Asp Pro Pro Lys Tyr Thr Ser Gly Pro Asn Lys Gly Gln Asp
        355                 360                 365
```

Val Cys Glu Phe Gly Ile Gln Asn Ser Thr Ser Ala Pro Tyr Leu Leu
370 375 380

Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Val Asn
385 390 395 400

Asn Glu Ile Ala Leu Ala Glu Thr Asp Phe Asn Ser Thr Glu Ser Asn
405 410 415

Ile Val Ala Phe Ala Ser Met Ser Ala Thr Ile Pro Ser Ala Thr Gln
420 425 430

Ala Pro Asn Gln Ala Ala Val Thr Asn Arg Pro Val Ala Thr Met Pro
435 440 445

Ser Phe Ala Ala Ser Ser Gly Phe Ser Asp Thr Gly Gly Ser Gly Asn
450 455 460

Asp Gly Lys Asp Glu Asn Ala Ser Ala Gly Met Pro Ser Ala Phe Gly
465 470 475 480

Val Ala Gln Met Ser Val Met Gly Ile Ala Met Val Phe Ala Met Ile
485 490 495

Gly Ser Gly Val Phe Val Leu Leu
500

<210> 511
<211> 501
<212> PRT
<213> Myceliophthora thermophila

<400> 511

Met Arg Gly Tyr Ala Ala Val Ala Phe Gly Ala Ile Leu Ala Gly Ala
1 5 10 15

Val His Ala Ser Ala Gly Asn Gly Val Val Gln Trp Asp Ile Arg Arg
20 25 30

Thr Gln Arg Gln Glu Glu Leu Gln Arg Leu Asn Arg Arg Leu Arg Lys
35 40 45

Arg Ala Asn Pro Val Leu Glu Val Ile Thr Asn Glu Lys Ile Arg Gly
50 55 60

Gly Tyr Phe Ala Thr Cys Lys Ile Gly Thr Pro Gly Gln Asp Leu Thr
65 70 75 80

Leu Gln Leu Asp Thr Gly Ser Ser Asp Ile Trp Val Pro Asp Ser Ala
85 90 95

Ala Gln Val Cys Arg Glu Ile Gly Thr Glu Gly Cys Ala Leu Gly Thr

```
            100                 105                 110

Phe Asn Pro Asn Arg Ser Ser Ser Phe Glu Val Ile Gly Glu Gly Gln
        115                 120                 125

Phe Asp Ile Glu Tyr Val Asp Gly Ser Ser Ser Lys Gly Asp Tyr Phe
    130                 135                 140

Thr Asp Val Phe Gln Ile Gly Asp Ile Ser Val Gln Asn Met Thr Met
145                 150                 155                 160

Gly Leu Gly Leu His Thr Asp Ile Ala Tyr Gly Leu Val Gly Val Gly
                165                 170                 175

Tyr Ala Ile Asn Glu Ala Ile Val Ala Thr Thr Gln Ser Arg Asp Ser
            180                 185                 190

Val Tyr Pro Asn Leu Pro Val Gln Met Val Asp Gln Gly Leu Ile Asn
        195                 200                 205

Thr Val Ala Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ala Ser Ser Gly
    210                 215                 220

Ser Ile Leu Phe Gly Gly Ile Asp Thr Glu Lys Tyr Gln Gly Glu Leu
225                 230                 235                 240

Thr Arg Ile Asp Ile Tyr Pro Thr Ser Gln Gly Asp Phe Ser Ser Phe
                245                 250                 255

Val Val Ala Leu Thr Ser Leu Glu Ala Arg Ser Pro Ser Gly Gln Asp
            260                 265                 270

Thr Leu Thr Ser Gln Glu Phe Pro Ile Pro Val Val Leu Asp Ser Gly
        275                 280                 285

Thr Thr Leu Ser Tyr Leu Pro Thr Asp Leu Ala Thr Gln Ala Trp Lys
    290                 295                 300

Glu Val Gly Ala Phe Tyr Leu Pro Glu Val Gly Ala Ala Val Leu Pro
305                 310                 315                 320

Cys Asp Met Glu Asn Ser Lys Gly Ser Phe Ser Phe Gly Phe Ala Gly
                325                 330                 335

Pro Asp Gly Pro Arg Ile Thr Val Gly Met Asp Glu Leu Val Leu Asp
            340                 345                 350

Met Thr Asp Gly Gln Ala Pro Gln Phe Leu Ser Gly Pro Tyr Lys Gly
        355                 360                 365

Arg Asp Val Cys Gln Phe Gly Ile Gln Asn Phe Thr Ser Ala Pro Phe
```

370 375 380

Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu
385 390 395 400

Val Asn Asn Gln Ile Gly Ile Ala Ala Thr Asp Phe Asn Ser Thr Asp
405 410 415

Ser Asn Ile Val Pro Phe Pro Ser Met Gly Ala Pro Ile Pro Ser Ala
420 425 430

Thr Val Ala Ala Asn Gln Arg Glu Val Thr Arg Val Pro Thr Val Thr
435 440 445

Glu Pro Ala Tyr Ser Ala Ser Gln Gly Phe Met Glu Ser Ala Ser Gly
450 455 460

Glu Glu Ser Leu Ala Pro Gly Met Pro Ala Ala Trp Gly Met Gly Gln
465 470 475 480

Leu Leu Val Val Gly Val Thr Met Ala Leu Thr Ala Leu Gly Ser Gly
485 490 495

Leu Phe Phe Val Leu
500

<210> 512
<211> 492
<212> PRT
<213> Neurospora crassa

<400> 512

Met Lys Gly Tyr Thr Ser Ser Ala Leu Leu Leu Gly Pro Ala Leu Leu
1 5 10 15

Ser Gln Leu Ala Leu Ala Gln Gln Ala Pro Asn Gly Val Val His Trp
20 25 30

Gly Ile Gln Lys Arg His Ala Pro Asn Ala Pro Asn Arg Leu Leu Arg
35 40 45

Arg Ala Gly Pro Thr His Gln Ala Ile Leu Gln Asn Glu Gln Ala Arg
50 55 60

Gly Gly Tyr Phe Ala Thr Cys Ala Met Gly Thr Pro Gly Gln Lys Val
65 70 75 80

Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val Trp Val Pro Asp Ser
85 90 95

Thr Ala Ser Ile Cys Asn Lys Gly Ala Cys Asp Leu Gly Ser Trp Gln
100 105 110

```
Gly Glu Phe Asp Ile Ser Tyr Val Asp Gly Ser Ser Ser Lys Gly Asp
        115                 120                 125

Tyr Phe Thr Asp Val Phe Asn Ile Gly Gly Thr Thr Val Thr Asn Leu
    130                 135                 140

Thr Met Gly Leu Gly Ala Gln Thr Asp Ile Ala Tyr Gly Leu Val Gly
145                 150                 155                 160

Ile Gly Tyr Ala Ile Asn Glu Ala Ile Val Gly Asn Ser His Ser Leu
                165                 170                 175

Ser Ser Gln Tyr Pro Asn Leu Pro Val Ala Met Val Asp Asp Gly Leu
            180                 185                 190

Ile Asn Thr Ile Ala Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ala Gly
        195                 200                 205

Glu Gly Ser Ile Leu Phe Gly Gly Ile Asp Thr Lys Lys Tyr Lys Gly
    210                 215                 220

Asp Leu Thr Arg Ile Arg Ile Tyr Pro Ser Ser Asn Gly Tyr Tyr Phe
225                 230                 235                 240

Ser Phe Ile Val Ala Leu Thr Ser Leu Gln Ala Ile Ser Pro Ser Gly
                245                 250                 255

Asn Asp Thr Leu Thr Ser Gln Glu Phe Pro Ile Pro Val Val Leu Asp
            260                 265                 270

Ser Gly Thr Thr Leu Ser Tyr Leu Pro Gln Asp Ile Val Asp Gln Ile
        275                 280                 285

Trp Gln Glu Val Gly Ala Glu Tyr Ser Asp Arg Leu Glu Leu Ala Val
    290                 295                 300

Ile Pro Cys Ser Lys Lys Ser Ser Asn Gly Tyr Phe Ser Phe Gly Phe
305                 310                 315                 320

Ala Gly Pro Asp Gly Pro Arg Ile Thr Val Arg Met Asp Glu Leu Val
                325                 330                 335

Leu Asp Leu Thr Ser Gly Asp Pro Pro Lys Tyr Thr Ser Gly Pro Asn
            340                 345                 350

Lys Gly Gln Asp Val Cys Glu Phe Gly Ile Gln Asn Ser Thr Ser Ala
        355                 360                 365

Pro Tyr Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr
    370                 375                 380
```

```
Asp Leu Val Asn Asn Glu Ile Gly Leu Ala Glu Thr Asp Phe Asn Ser
385                 390                 395                 400

Thr Glu Ser Asn Ile Val Ala Phe Ala Ser Met Ser Ala Thr Ile Pro
                405                 410                 415

Ser Ala Thr Gln Ala Pro Asn Gln Ala Ala Val Thr Asn Arg Pro Val
            420                 425                 430

Ala Thr Met Pro Ser Phe Ala Ala Ser Ser Gly Phe Ser Asp Thr Gly
        435                 440                 445

Gly Ser Gly Asn Asp Gly Lys Asp Glu Asn Ala Ser Ala Gly Met Pro
    450                 455                 460

Ser Ala Phe Gly Val Ala Gln Met Ser Val Met Gly Ile Ala Met Val
465                 470                 475                 480

Phe Ala Met Val Gly Ser Gly Val Phe Val Leu Leu
                485                 490


<210>  513
<211>  484
<212>  PRT
<213>  Metarhizium anisopliae

<400>  513

Met Lys Tyr Ser Ser Ala Val Asp Ala Cys Val Ser Ser Val Ile Ile
1               5                   10                  15

Leu Ala Pro Ala Val Phe Gly Gln Val Val Arg Trp Asp Ile Gln Lys
            20                  25                  30

His Tyr Gln Ala Ser Gly Leu Arg Arg Arg Ala Gly Thr Leu Gln Ser
        35                  40                  45

Asp Ala Ser Asn Asn Lys Ala Gln Gly Gly Tyr Phe Val Ala Val Gln
    50                  55                  60

Ile Gly Thr Pro Gly Gln Glu Leu Ser Leu Gln Leu Asp Thr Gly Ser
65                  70                  75                  80

Ser Asp Val Trp Val Pro Ser Ser Gln Ala Pro Val Cys Leu Asp Lys
                85                  90                  95

Ala Gln Gly Gly Cys Pro Leu Gly Ser Phe Asp Phe Asp Gln Ser Gly
            100                 105                 110

Thr Phe Asp Val Ile Val Ala Asn Gly Phe Asp Ile Ser Tyr Gln Asp
        115                 120                 125
```

```
Asn Ser Ser Ala Ser Gly Asp Tyr Phe Ala Asp Lys Leu Glu Ile Gly
    130                 135                 140

Ser Lys Ser Leu Asn Asn Phe Thr Met Gly Leu Gly Lys Lys Thr Asp
145                 150                 155                 160

Val Pro Phe Gly Leu Ile Gly Val Gly Tyr Ala Gly Asn Glu Ala Ser
                165                 170                 175

Thr Glu Thr Ala Asn Ala Ile Tyr Pro Asn Leu Pro Ile Ala Met Gln
            180                 185                 190

Glu Ala Gly Ile Ile Asn Ser Val Ala Tyr Ser Leu Trp Leu Asn Asp
        195                 200                 205

Leu Gly Ala Ser Thr Gly Asn Ile Leu Phe Gly Gly Ile Asp Thr Glu
    210                 215                 220

Lys Tyr Val Gly His Leu Thr Lys Leu Pro Ile Gln Pro Glu Asn Gln
225                 230                 235                 240

Gln Phe Thr His Phe Ile Val Ser Leu Phe Ser Leu Glu Ala Thr Ser
                245                 250                 255

Pro Ser Gly Asn Asp Val Leu Thr Ser Arg Glu Leu Pro Leu Lys Val
            260                 265                 270

Val Leu Asp Ser Gly Thr Thr Leu Ser Tyr Leu Pro Pro Asp Met Ala
        275                 280                 285

Ala Gln Val Trp Ser Glu Val Gly Ala Thr Tyr Asp Asp Met Ser Phe
    290                 295                 300

Gln Thr Ala Ile Ile Pro Cys Ser Tyr Ala Ser His Ala Gly His Phe
305                 310                 315                 320

Ser Phe Val Phe Ser Gly Pro Asp Gly Pro Arg Ile Asn Val Thr Met
                325                 330                 335

Asp Glu Leu Val Leu Pro Leu Thr Asp Gly Glu Pro Pro Thr Phe Ser
            340                 345                 350

Ser Gly Pro His Ser Gly Gln Thr Ile Cys Glu Phe Gly Ile Gln Lys
        355                 360                 365

Ser Ser Asp Thr Pro Trp Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala
    370                 375                 380

Tyr Val Val Tyr Asp Leu Met Asn Asn Glu Val Gly Ile Ala Pro Thr
385                 390                 395                 400
```

```
Asp Phe Asn Ser Thr Lys Ser Asn Val Ile Ala Phe Ala Ser Lys Gly
                405                 410                 415

Ala Ala Ile Pro Ser Ala Thr Ser Val Asn Asn Gly Ser Lys Ser Gly
            420                 425                 430

Ile Gln Ser Gln Pro Thr Gln Thr Gly Leu Ser Ala Ala Lys Gly Phe
        435                 440                 445

Gln Glu Gly Ser Leu Ala Cys Ser Leu Glu Ser Leu Ser Val Phe Ser
    450                 455                 460

Leu Thr Phe Ile Ser Met Thr Ile Thr Ala Leu Leu Met Gly Ser Pro
465                 470                 475                 480

Ile Phe Thr Asp
```

<210> 514
<211> 507
<212> PRT
<213> Thielavia terrestris

<400> 514

```
Met Lys Gly His Ser Ala Ala Ala Leu Gly Ala Leu Leu Val Gly Val
1               5                   10                  15

Val His Pro Val Ala Ala Asn Gly Val Val Gln Trp Asp Ile Arg Arg
            20                  25                  30

Ser Gln Arg Ser Gln Glu Phe Thr Lys Leu Arg Arg Arg Gly Ser Thr
        35                  40                  45

Phe Asn Glu Val Ile Ser Asn Asp Glu Ala Arg Gly Gly Tyr Phe Ala
    50                  55                  60

Thr Cys Gln Ile Gly Thr Pro Gly Gln Asn Leu Thr Leu Gln Leu Asp
65                  70                  75                  80

Thr Gly Ser Ser Asp Ile Trp Val Pro Asp Ser Lys Ala Ser Val Cys
                85                  90                  95

Arg Lys Phe Gly Asn Ser Gly Gly Cys Asn Leu Gly Ala Phe Asp Ser
            100                 105                 110

Ala Gln Ser Ser Ser Phe Glu Val Val Gly Lys Gly Glu Phe Asp Ile
        115                 120                 125

Ser Tyr Val Asp Gly Ser Ser Ser Lys Gly Asp Tyr Phe Thr Asp Val
    130                 135                 140
```

```
Phe Ser Ile Gly Gly Ala Thr Leu Gln Asn Met Thr Met Gly Leu Gly
145                 150                 155                 160

Leu Glu Thr Asp Ile Ser Tyr Gly Leu Val Gly Val Gly Tyr Ala Val
                165                 170                 175

Asn Glu Ala Ile Val Gly Ser Ser Gln Ser Val Ser Ser Ala Tyr Pro
            180                 185                 190

Asn Leu Pro Val Asn Met Val Asn Glu Gly Leu Ile Asn Thr Val Ala
        195                 200                 205

Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ala Ser Ser Gly Ser Ile Leu
    210                 215                 220

Phe Gly Gly Ile Asp Thr Lys Lys Tyr Lys Gly Asp Leu Thr Arg Ile
225                 230                 235                 240

Gln Ile Tyr Pro Ala Thr Gln Asp Ile Phe Thr Ser Phe Lys Val Ala
                245                 250                 255

Leu Thr Ser Leu Glu Ala Ile Ser Pro Ser Gly Gln Asp Thr Leu Thr
            260                 265                 270

Ser Thr Ala Phe Pro Ile Ala Val Val Leu Asp Ser Gly Thr Thr Leu
        275                 280                 285

Ser Tyr Leu Pro Thr Asp Leu Ala Met Gln Ile Trp Lys Glu Ala Gly
    290                 295                 300

Ala Glu Tyr Ser Ala His Tyr Gly Thr Ala Ile Ile Pro Cys Ser Met
305                 310                 315                 320

Gln Asn Ser Gln Gly Tyr Phe Ser Phe Gly Phe Ala Gly Pro Gly Gly
                325                 330                 335

Pro Arg Ile Asn Val Thr Met Asp Glu Leu Val Leu Asp Val Ser Thr
            340                 345                 350

Asp Gly Gly Pro Gln Phe Thr Ser Gly Gln Tyr Lys Gly Glu Thr Ile
        355                 360                 365

Cys Glu Phe Gly Ile Gln Asn Ile Ser Ser Ser Pro Tyr Leu Leu Gly
    370                 375                 380

Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Val Asn Asn
385                 390                 395                 400

Glu Val Gly Ile Ala Gln Thr Asp Phe Asn Ser Thr Glu Ser Asn Val
                405                 410                 415
```

```
Val Ala Phe Ala Ser Met Ser Ala Thr Ile Pro Ser Ala Thr Val Ala
            420                 425                 430

Pro Ser Gln Ala Glu Val Thr Asn Arg Pro Thr Val Thr Val Pro Ala
        435                 440                 445

Tyr Ala Ala Ser Lys Gly Phe Thr Asp Leu Ser Ala Ser Gly Thr Ala
    450                 455                 460

Ala Ser Thr Ser Ala Glu Gln Asn Ala Ala Thr Pro Thr Pro Ser Arg
465                 470                 475                 480

Ala Ser Thr Gly Gln Met Leu Val Val Ser Leu Thr Met Leu Leu Thr
                485                 490                 495

Ala Val Gly Ser Gly Leu Phe Val Ala Ile Leu
            500                 505


<210>  515
<211>  494
<212>  PRT
<213>  Fusarium oxysporum

<400>  515

Met Lys Ser Ser Leu Val Gly Ala Ser Leu Val Ser Thr Leu Gly Leu
1               5                   10                  15

Val Gln Ala Gln Thr Ile Gln Trp Asn Ile Glu Gly Arg His Pro Gln
            20                  25                  30

Pro His Leu Ala Arg Arg Ala Lys Thr Thr Tyr Glu Glu Val Ile Ser
        35                  40                  45

Asn Asp Arg Ser Glu Gly Gly Tyr Phe Thr Glu Val Thr Ile Gly Asn
    50                  55                  60

Pro Pro Gln Asn Ile Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val
65                  70                  75                  80

Trp Val Pro Trp Asn Cys Ala Asp Ile Cys Glu Asp Asp Lys Asn Gly
                85                  90                  95

Lys Ser Gly Cys Pro Leu Gly Ser Phe Asp Pro Asp Lys Ser Lys Thr
            100                 105                 110

Phe Lys His Val Ala Pro Gly Met Phe Gly Ile Thr Phe Val Asp Asp
        115                 120                 125

Ser Tyr Val Lys Gly Asp Tyr Phe Glu Asp His Phe Glu Leu Asp Gly
    130                 135                 140

Ala Val Ile Asn Asn Leu Thr Met Gly Leu Ala Ile Lys Thr Asn Ile
```

```
145                 150                 155                 160

Ser Tyr Gly Leu Ile Gly Val Gly Tyr Ala Lys Asn Glu Ala Ser Gly
                165                 170                 175

Ser Thr Thr Asp Val Ile Tyr Pro Asn Leu Pro Val Ala Met Tyr Gln
            180                 185                 190

Ala Gly Tyr Ile Asn Thr Ile Ala Tyr Ser Val Trp Leu Asn Asp Leu
        195                 200                 205

Asp Ala Lys Ala Gly Ser Ile Leu Phe Gly Gly Val Asp Thr Ala Lys
    210                 215                 220

Tyr Val Gly Asp Met His Arg Ile Asp Ile Gln Lys Leu Asp Gly His
225                 230                 235                 240

Tyr Tyr His Phe Val Val Ala Leu Thr Ser Leu Val Ala Thr Ser Ser
                245                 250                 255

Ser Gly Ser Asp Val Leu Thr Ser Asp Ser Phe Pro Ile Gln Ala Val
            260                 265                 270

Leu Asp Ser Gly Thr Thr Leu Ser Tyr Leu Pro Gln Asp Leu Ala His
        275                 280                 285

Glu Ile Trp Glu Glu Val Gly Ala Val Trp Ser Pro Tyr Tyr Gly Val
    290                 295                 300

Ala Val Leu Pro Cys Ala Tyr Gly Arg Asn Gln Gly Asn Phe Thr Phe
305                 310                 315                 320

Gly Phe Ala Gly Pro Asp Gly Pro Ser Ile Ser Val Gly Met Asp Glu
                325                 330                 335

Leu Val Leu Ser Met Thr Ser Asp Ala Ala Asn Met Pro Val Phe Glu
            340                 345                 350

Ser Gly Ala Tyr Lys Gly Glu Asn Ile Cys Thr Phe Gly Ile Gln Asn
        355                 360                 365

Asp Thr Asn Asp Leu Tyr Leu Leu Gly Asn Thr Phe Leu Arg Ser Ala
    370                 375                 380

Tyr Val Val Tyr Asp Leu Val Asn Asn Glu Val Gly Ile Ala Ala Thr
385                 390                 395                 400

Asp Phe Asn Ser Thr Lys Ser Lys Arg Val Pro Phe Lys Ser Tyr Gly
                405                 410                 415

Ala Thr Ile Pro Ser Ala Thr Ala Ser Ser Asn Gln His Arg Ala Thr
```

420 425 430

Glu Lys Pro Thr Val Pro Gly His Asn Phe Thr Ala Ala Glu Gly Phe
435 440 445

Gln Glu Ser Asp Ser Asn Gly Asn Gly Asp Lys Asp Asn Ala Gly Ser
450 455 460

Leu Leu Asn Pro Pro Thr Thr Pro Leu Ala Leu Val Val Thr Thr Met
465 470 475 480

Ser Phe Met Leu Ala Gly Gly Gly Ile Phe Ser Ser Ile Phe
485 490

<210> 516
<211> 492
<212> PRT
<213> Gibberella zeae

<400> 516

Met Lys Ser Trp Leu Trp Gly Ala Ser Leu Val Ser Thr Trp Gly Leu
1 5 10 15

Val Tyr Ala Gln Thr Val Gln Trp Ser Ile Glu Gly Arg His Pro Gln
20 25 30

Pro Gln Leu Ala Arg Arg Thr Lys Thr Thr Tyr Glu Glu Val Ile Ser
35 40 45

Asn Asp Arg Ser Glu Gly Gly Tyr Phe Thr Glu Val Thr Ile Gly Ser
50 55 60

Pro Pro Gln Lys Val Thr Leu Gln Leu Asp Thr Gly Ser Ser Asp Val
65 70 75 80

Trp Val Pro Trp Asn Cys Ala Asp Val Cys Thr Asp Asn Asp Asn Gly
85 90 95

Lys Gly Gly Cys Pro Leu Gly Ser Phe Asp Pro Asp Lys Ser Lys Ser
100 105 110

Phe Lys His Val Ala Pro Gly Met Phe Gly Ile Thr Phe Val Asp Asn
115 120 125

Ser Tyr Val Lys Gly Asp Tyr Phe Glu Asp His Phe Glu Leu Asp Gly
130 135 140

Ala Val Ile Asn Asn Leu Thr Met Gly Leu Ala Val Lys Thr Asn Ile
145 150 155 160

Ser Tyr Gly Leu Ile Gly Val Gly Tyr Ala Lys Asn Glu Ala Ser Gly
165 170 175

```
Ser Thr Thr Asp Val Ile Tyr Pro Asn Leu Pro Val Ala Met Tyr Glu
            180                 185                 190

Ala Gly Tyr Val Asn Thr Ile Ala Tyr Ser Val Trp Leu Asn Asp Leu
        195                 200                 205

Asp Ala Lys Ala Gly Thr Val Leu Phe Gly Gly Val Asp Thr Ala Lys
    210                 215                 220

Tyr Val Gly Asp Met His Arg Ile Asp Ile Gln Lys Val Asp Gly His
225                 230                 235                 240

Tyr Tyr His Phe Val Val Ala Leu Thr Ser Leu Val Ala Thr Ser Ser
                245                 250                 255

Ser Gly Ser Asp Asn Leu Thr Ser Glu Cys Phe Pro Ile Pro Ala Val
            260                 265                 270

Leu Asp Ser Gly Thr Thr Leu Ser Tyr Leu Pro His Asp Leu Ala Thr
        275                 280                 285

Glu Ile Trp Gln Glu Val Gly Ala Val Trp Ser Pro Tyr Tyr Gly Val
    290                 295                 300

Ala Val Leu Pro Cys Ala Tyr Gly Arg Asn Asn Gly Asn Phe Thr Phe
305                 310                 315                 320

Gly Phe Ala Gly Pro Asp Gly Pro Val Ile Ser Val Gly Met Asp Glu
                325                 330                 335

Leu Val Leu Thr Met Ala Ser Asp Arg Ala Asn Met Pro Val Phe Gln
            340                 345                 350

Ser Gly Pro Tyr Lys Gly His Thr Met Cys Ser Phe Gly Ile Gln Asn
        355                 360                 365

Asp Thr Ser Asp Leu Tyr Leu Leu Gly Asn Thr Phe Leu Arg Ser Ala
    370                 375                 380

Tyr Val Val Tyr Asp Leu Val Asn Asn Glu Val Gly Ile Ala Ala Thr
385                 390                 395                 400

Asp Phe Asn Ser Thr Ala Thr Lys Arg Val Ala Phe Lys Ser Tyr Gly
                405                 410                 415

Ala Ser Ile Pro Ser Ala Thr Ala Val Ala Asn Gln His Lys Ala Thr
            420                 425                 430

Glu Asn Pro Ser Val Ser Gly His Asn Phe Thr Ala Ala Asp Gly Phe
        435                 440                 445
```

```
Gln Glu Ser Asp Trp Asp Ser Asp Asp Glu Asp Asn Ala Ala Ile Ser
    450                 455                 460

Leu Thr Pro Ser Gly Thr Pro Leu Val Met Ala Val Val Thr Met Gly
465                 470                 475                 480

Phe Val Leu Leu Gly Gly Gly Ile Phe His Thr Phe
                485                 490

<210>  517
<211>  484
<212>  PRT
<213>  Magnaporthe oryzae

<400>  517

Met Leu Gly Ile Ser Ala Leu Leu Ile Val Cys Ala Ser Leu Gly Ser
1               5                   10                  15

Phe Ala Ala Ala Ser Asp Gly Val Val Gln Trp His Ile Glu Arg Arg
            20                  25                  30

Gln Val Pro Thr Pro Thr Ala Lys Leu Ala Lys Arg Val Ala Thr Thr
        35                  40                  45

Phe Glu Glu Val Ile Gln Asn Glu Lys Ser Arg Gly Gly Tyr Phe Ala
    50                  55                  60

Lys Cys Ser Val Gly Gly Gln Asp Val Thr Leu Gln Leu Asp Thr Gly
65                  70                  75                  80

Ser Ser Asp Leu Trp Val Pro Ala Glu Ser Ala Cys Gln Ser Asp Arg
                85                  90                  95

Val Pro Asn Gly Cys Ser Leu Gly Ser Phe Lys Lys Asp Leu Ser Ser
            100                 105                 110

Ser Phe Lys Val Thr Gly Lys Asp Gln Phe Ser Ile Gln Tyr Ile Asp
        115                 120                 125

Gly Ser Phe Ala Arg Gly Asp Tyr Phe Thr Asp Ala Phe Ser Ile Gly
    130                 135                 140

Gly Val Arg Val Ile Asn Leu Thr Met Gly Leu Gly Lys Gln Thr Asp
145                 150                 155                 160

Ile Pro Tyr Gly Leu Ala Gly Val Gly Tyr Ala Leu Asn Glu Ala Ile
                165                 170                 175

Val Gly Gly Asn Ser Ser Asn Phe Thr Thr Tyr Pro Asn Leu Pro Ala
            180                 185                 190
```

```
Thr Met Leu Asn Asp Gly Leu Ile Asn Thr Asn Ala Phe Ser Leu Trp
        195                 200                 205

Leu Asn Asn Leu Asp Ala Ser Thr Gly Arg Ile Leu Phe Gly Gly Val
    210                 215                 220

Asp Val Ala Lys Phe Lys Gly Gly Met Ala Arg Ile Arg Ile Tyr Glu
225                 230                 235                 240

Asp Val Phe Ser Gln Glu Tyr Met Ser Phe Thr Val Ala Leu Thr Ser
                245                 250                 255

Leu Glu Ala His Ser Gly Ser Gly Gln Asp Thr Leu Thr Ser Arg Ser
            260                 265                 270

Phe Pro Ile Pro Val Val Leu Asp Ser Gly Thr Thr Leu Ser Tyr Leu
        275                 280                 285

Pro Asn Asp Leu Ala Val Gln Thr Trp Thr Glu Val Gly Ala Leu Tyr
    290                 295                 300

Ser Ala Glu Tyr Gly Gln Ala Leu Leu Pro Cys Ala Met Glu Asp Ser
305                 310                 315                 320

Lys Gly Tyr Phe Val Phe Gly Phe Ala Gly Pro Asp Gly Pro Lys Ile
                325                 330                 335

Gln Val Glu Met Lys Glu Leu Val Leu Asp Leu Thr Asn Gly Pro Ala
            340                 345                 350

Pro Lys Phe Thr Asn Gly Lys Tyr Gln Gly Gln Asp Ala Cys Thr Phe
        355                 360                 365

Gly Ile Gln Asn Phe Thr Gly Gln Thr Met Val Leu Gly Asp Thr Phe
    370                 375                 380

Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Val Asn His Glu Ile Gly
385                 390                 395                 400

Ile Ala Gln Thr Asp Phe Asn Ser Thr Thr Ser Glu Ile Ile Ala Phe
                405                 410                 415

Pro Ser Ser Gly Ala Pro Ile Pro Ser Ala Thr Leu Ala Pro Asn Gln
            420                 425                 430

Asp Gln Ala Val Val Lys Pro Gln Val Thr Ile Pro Ala Phe Asn Ala
        435                 440                 445

Gln Pro Gly Phe Arg Glu Gly Val Ser Gln Ala Thr Pro Leu Leu Lys
    450                 455                 460
```

```
Pro Leu Asn Lys Thr His Ile Leu Leu Met Cys Ala Ala Ile Ala Leu
465                 470                 475                 480


Ile Met Ser Gly



<210>  518
<211>  474
<212>  PRT
<213>  Penicillium chrysogenum

<400>  518

Met Lys His Ala Trp Ile Leu Leu Val Gly Leu Val Pro Ala Trp Gly
1               5                   10                  15


Leu Thr Leu His Arg Arg Asp Asn Pro Ala Val Val Gln Met Asp Ile
            20                  25                  30


Gln Arg Lys Asp Val Leu Asp Pro Ile Thr Arg Asp Arg Arg Arg Lys
        35                  40                  45


Arg Ser Thr Val Arg Gln Pro Leu Asp Asn Glu Glu Thr Leu Tyr Phe
    50                  55                  60


Cys Asn Val Thr Leu Gly Thr Pro Glu Gln Lys Val Arg Leu Val Leu
65                  70                  75                  80


Asp Thr Gly Ser Ser Asp Leu Trp Cys Asn Thr Pro Asn Ser Thr Leu
                85                  90                  95


Cys Glu Ser Ser Glu Asn Ala Cys Ala Ser Gly Thr Tyr Asp Ser Ser
            100                 105                 110


Ser Ser Ser Ser Tyr Ser Phe Val Ser Ser Asp Phe Asn Ile Ser Tyr
        115                 120                 125


Ala Asp Gly Ser Gly Ala Ala Gly Asp Tyr Val Thr Asp Thr Leu Thr
    130                 135                 140


Ile Gly Gly Thr Thr Ile Lys Asp Phe Gln Phe Gly Ile Gly Phe Ser
145                 150                 155                 160


Ser Gly Ser Pro Glu Gly Val Leu Gly Ile Gly Tyr Thr Ala Asn Glu
                165                 170                 175


Val Gln Val Gly Arg Asn Gly Glu Ser Ala Tyr Ala Asn Leu Pro Gln
            180                 185                 190


Ala Met Val Asn Lys Gly Val Ile Lys Ser Asn Ala Tyr Ser Leu Trp
        195                 200                 205
```

```
Leu Asn Asp Leu Asp Ala Asn Thr Gly Ser Ile Leu Phe Gly Gly Val
    210                 215                 220

Asn Thr Lys Lys Tyr His Gly Ala Leu Gln Thr Val Pro Ile Gln Lys
225                 230                 235                 240

Val Gly Gly Arg Tyr Ser Glu Phe Ile Ile Ala Leu Thr Glu Val Ser
                245                 250                 255

Leu Thr Thr Ser Ser Gly Gln Asn Thr Tyr Ser Ser Ser Ser Ile Pro
            260                 265                 270

Ala Gly Val Leu Leu Asp Ser Gly Ser Ser Leu Thr Tyr Leu Pro Asp
        275                 280                 285

Ala Leu Val Gln Glu Ile Tyr Asp Asp Leu Gly Val Ser Tyr Glu Ser
    290                 295                 300

Asp Ser Gly Ile Gly Tyr Val Glu Cys Ser Met Ala Glu Gln Ser Ile
305                 310                 315                 320

Leu Ser Tyr Thr Phe Ser Ser Pro Thr Ile Asn Val Gly Ile Asp Glu
                325                 330                 335

Met Ile Ile Asp Val Gly Asp Leu Tyr Phe Arg Asn Gly Lys Arg Ala
            340                 345                 350

Cys Ile Phe Gly Ile Val Pro Ala Gly Thr Ser Thr Ala Val Leu Gly
        355                 360                 365

Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Glu Asn Asn
    370                 375                 380

Glu Ile Ser Leu Ala Ser Thr Asn Phe Asn Ser Thr Glu Asn Asp Ile
385                 390                 395                 400

Leu Glu Ile Gly Thr Gly Thr Asp Ser Val Pro Gly Ala Thr Ala Val
                405                 410                 415

Ser Asn Pro Val Thr Thr Ala Pro Val Gly Gly Thr Ala Ala Arg Ile
            420                 425                 430

Gly Gly Pro His Gly Gly Ser Asp Leu Ser Gly Ser Ala Thr Val Asn
        435                 440                 445

Met Ala Ile Pro Lys Ala Thr Ala Met Pro Arg His Met Ala Val Gly
    450                 455                 460

Leu Ala Gly Val Gly Ala Leu Leu Ala Leu
465                 470
```

<210> 519
<211> 487
<212> PRT
<213> Aspergillus oryzae

<400> 519

```
Met Gln Lys Ser Trp Leu Val Leu Leu Val Ala Cys Leu Gly Leu Gln
1               5                  10                  15

Gly Thr Thr Ala Leu Thr Leu His Arg Arg Asp Leu Pro Ala Val Val
            20                  25                  30

Ser Leu Asp Ile Lys Arg Asn Asn Ala Val Asp Pro Val Ala Arg Asp
        35                  40                  45

Arg Met Arg Arg Lys Arg Asp Lys Thr Val Glu Gln Asn Leu Asp Asn
    50                  55                  60

Glu Glu Thr Leu Tyr Phe Cys Asn Ile Thr Leu Gly Thr Pro Lys Gln
65                  70                  75                  80

Ser Leu Arg Leu Val Leu Asp Thr Gly Ser Ser Asp Leu Trp Cys Asn
                85                  90                  95

Ala Ala Asn Ser Thr Leu Cys Ser Ser Arg Asp Gln Pro Cys Asn Ala
            100                 105                 110

Ser Gly Ser Tyr Asp Pro Ser Ser Ser Ser Ser Tyr Ala Tyr Thr Ser
        115                 120                 125

Ser Asp Phe Asn Ile Ser Tyr Ala Asp Gly Thr Gly Ala Ala Gly Asp
    130                 135                 140

Tyr Val Thr Asp Thr Ile His Ile Gly Gly Ala Thr Val Lys Asp Phe
145                 150                 155                 160

Gln Phe Gly Val Gly Tyr Ser Ser Ser Ser Ala Glu Gly Val Leu Gly
                165                 170                 175

Ile Gly Tyr Thr Thr Asn Glu Val Gln Val Gly Arg Leu Gly Lys Ser
            180                 185                 190

Ala Tyr Ala Asn Leu Pro Gln Ala Met Val Lys Asn Gly Leu Ile Gln
        195                 200                 205

Ser Asn Ala Tyr Ser Leu Trp Leu Asn Asp Leu Gly Ala Asp Thr Gly
    210                 215                 220

Ser Ile Leu Phe Gly Gly Val Asn Thr Glu Lys Tyr His Gly Glu Leu
225                 230                 235                 240

Gln Thr Leu Pro Ile Gln Thr Val Asn Gly Val Tyr Ser Glu Phe Ile
```

245 250 255

Ile Ala Leu Thr Gly Val Ser Leu Ser Ser Ala Ser Ser His His Asn
260 265 270

Tyr Ser Ser Ser Asp Ala Leu Pro Ala Ala Val Leu Leu Asp Ser Gly
275 280 285

Ser Ser Leu Thr Tyr Leu Pro Asn Ser Ile Val Gln Asp Ile Tyr Asp
290 295 300

Asp Leu Gly Val Thr Tyr Glu Ser Ser Ser Gly Val Gly Tyr Val Pro
305 310 315 320

Cys Ser Leu Ala Gln Gln Asn Ile Asn Val Thr Tyr Thr Phe Ser Ser
325 330 335

Pro Ile Ile Thr Val Gly Ile Asp Glu Leu Val Leu Asp Ala Gly Asp
340 345 350

Leu Arg Phe Arg Asn Gly Ala Arg Ala Cys Ile Phe Gly Ile Val Pro
355 360 365

Ala Gly Asp Ser Thr Ala Val Leu Gly Asp Thr Phe Leu Arg Ser Ala
370 375 380

Tyr Val Val Tyr Asp Leu Ser Asn Asn Glu Ile Ser Leu Ala Asn Thr
385 390 395 400

Lys Phe Asn Ser Thr Lys Asp Asn Ile Leu Glu Ile Gly Thr Gly Asp
405 410 415

Asp Ser Val Pro Gly Ala Thr Gln Val Ser Asn Pro Val Thr Ser Val
420 425 430

Val Ala Asp Gly Ser Gly Ala Arg Ile Gly Gly Pro Thr Gly Glu Ile
435 440 445

Phe Thr Asp Ile Pro Ser Ala Thr Ser Ser Gly Gly Ala Ala Ala Pro
450 455 460

Ala Gly Pro Thr Asp Val Pro Lys His Leu Val Leu Gly Ala Ala Ala
465 470 475 480

Ile Gly Tyr Val Leu Ala Phe
485

<210> 520
<211> 454
<212> PRT
<213> Aspergillus nidulans

<400> 520

Met Leu Arg Val Gly Phe Asp Ala Ser Thr Asn Glu Ile Pro Asp Pro
1 5 10 15

Val Ala Arg Asp Arg Arg Arg Arg Lys Arg Asp Gln Thr Val Ala Gln
20 25 30

Leu Ile Asp Asn Glu Glu Thr Leu Tyr Phe Cys Asn Leu Thr Val Gly
35 40 45

Thr Pro Gly Gln Ser Leu Arg Leu Ile Leu Asp Thr Gly Ser Ser Asp
50 55 60

Leu Trp Cys Asn Ala Ala Asn Ser Thr Leu Cys Ser Ser Pro Lys Asp
65 70 75 80

Pro Cys Arg Ile Ser Gly Ser Phe Asp Pro Ser Ser Ser Ser Ser Tyr
85 90 95

Ser Tyr Ile Ser Ser Asp Phe Asn Ile Thr Tyr Ala Asp Gly Thr Gly
100 105 110

Ala Ala Gly Asp Tyr Ala Thr Asp Thr Val Ser Ile Gly Gly Ala Thr
115 120 125

Ile Lys Asp Phe Gln Phe Gly Ile Gly Tyr Thr Ser Ser Ser Ala Glu
130 135 140

Gly Val Leu Gly Ile Gly Tyr Pro Ser Asn Glu Val Gln Val Ala Arg
145 150 155 160

Tyr Gly Asp Asp Ala Tyr Pro Asn Leu Pro Arg Phe Leu Met Gln Asn
165 170 175

Gly Phe Val Gln Ser Ser Ala Tyr Ser Leu Trp Leu Asn Asp Leu Glu
180 185 190

Ala Asn Thr Gly Ser Ile Leu Phe Gly Gly Val Asp Thr Glu Lys Tyr
195 200 205

Arg Gly Asp Leu Gln Thr Leu Pro Ile Gln Thr Val Asn Gly Glu Tyr
210 215 220

Ser Glu Leu Ile Ile Ala Leu Thr Gly Val Ser Leu Asp Thr Glu Ala
225 230 235 240

Arg Lys His Thr Val Ser Ser Asn Ala Leu Pro Ala Ala Val Leu Leu
245 250 255

Asp Ser Gly Ser Ser Leu Ser Tyr Leu Pro Asp Ser Ile Ala Glu Lys
260 265 270

```
Ile Tyr Asp Asp Leu Arg Ile Ser Tyr Glu Pro Ser Thr Gly Ala Gly
        275                 280                 285

Tyr Ala Pro Cys Ser Leu Ala Arg Gln Asn Ile Asn Val Thr Phe Thr
    290                 295                 300

Phe Ser Ser Pro Glu Ile Ala Val Gly Ile Asp Glu Leu Ile Ile Asp
305                 310                 315                 320

Ala Gly Asp Leu Arg Phe Ser Asn Gly Glu Arg Ala Cys Ile Phe Gly
                325                 330                 335

Leu Val Pro Ala Gly Asp Asn Thr Ala Val Leu Gly Asp Thr Phe Leu
            340                 345                 350

Arg Ser Ala Tyr Val Val Tyr Asp Leu Thr Asn Asn Glu Ile Ser Ile
        355                 360                 365

Ala Lys Thr Asn Phe Asn Ser Thr Lys Ser Asn Ile Leu Glu Ile Gly
    370                 375                 380

Thr Gly Ser Asp Ala Val Pro Gly Ala Thr Lys Val Ser His Pro Val
385                 390                 395                 400

Thr Ser Val Val Ala Asp Gly Ser Gly Ser Arg Ile Gly Ala Pro Thr
                405                 410                 415

Asn Thr Glu Asp Ile Val Pro Ser Ala Ser Thr Gly Ala Ala Val Val
            420                 425                 430

Leu Gly Arg Ser Thr Ile Ser Pro Val Leu Val Gly Ala Ala Ala Leu
        435                 440                 445

Gly Tyr Met Phe Ala Phe
    450


<210>  521
<211>  486
<212>  PRT
<213>  Aspergillus niger

<400>  521

Met Trp Arg Val Leu Ser Leu Leu Val Ala Val Ser Phe Val Pro Leu
1               5                   10                  15

Glu Thr Ala Lys Ala Leu Val Leu Gln Arg Arg Glu Val Pro Ala Val
            20                  25                  30

Val Thr Leu Asp Ile Lys Arg Asn Asp Val Ser Asp Pro Val Met Arg
        35                  40                  45
```

```
Asp Arg Ala Arg Arg Arg Arg Asp Thr Thr Thr Val Ala Gln Ala Leu
    50                  55                  60

Asp Asn Glu Glu Thr Leu Tyr Phe Cys Asn Ile Thr Leu Gly Thr Pro
65                  70                  75                  80

Glu Gln Ser Leu Arg Leu Val Leu Asp Thr Gly Ser Ser Asp Leu Trp
                85                  90                  95

Cys Asn Ala Ala Asn Ser Thr Leu Cys Ser Ser Ser Thr Asp Pro Cys
            100                 105                 110

Ser Thr Ser Gly Thr Phe Asn Ser Asp Lys Ser Thr Thr Tyr Thr Tyr
        115                 120                 125

Val Ser Ser Asp Phe Asn Ile Ser Tyr Ala Asp Gly Thr Gly Ala Ala
    130                 135                 140

Gly Val Tyr Ala Thr Asp Thr Leu His Ile Gly Ala Ser Thr Leu Glu
145                 150                 155                 160

Asp Phe Gln Phe Gly Ile Gly Tyr Thr Ser Ser Ser Ser Glu Gly Val
                165                 170                 175

Leu Gly Ile Gly Tyr Thr Ser Asn Glu Val Gln Val Gly Arg Phe Gly
            180                 185                 190

Asp Ser Ala Tyr Pro Asn Leu Pro Arg Ala Met Val Lys Ser Gly Leu
        195                 200                 205

Ile Lys Ser Asn Ala Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ala Asn
    210                 215                 220

Thr Gly Ser Ile Leu Phe Gly Gly Val Asn Thr Lys Lys Tyr His Gly
225                 230                 235                 240

Glu Leu Gln Thr Leu Pro Ile Gln Lys Val Asn Gly Ile Tyr Ser Glu
                245                 250                 255

Phe Ile Ile Ala Leu Thr Gly Val Ala Phe Thr Ser Gly Ser Ser Ser
            260                 265                 270

Arg Asn Tyr Ser Ser Asp Ala Leu Pro Ala Ala Val Leu Leu Asp Ser
        275                 280                 285

Gly Ser Ser Leu Thr Tyr Leu Pro Asp Ser Ile Val Glu Asp Ile Tyr
    290                 295                 300

Asn Asp Phe Asp Val Val Tyr Glu Gln Ser Ser Gly Val Gly Tyr Val
305                 310                 315                 320
```

```
Pro Cys Ser Leu Ala Gln Asn Asn Thr Asn Ile Thr Tyr Thr Phe Ser
                325                 330                 335

Ser Pro Thr Ile Thr Val Gly Val Asn Glu Leu Val Leu Asp Val Gly
            340                 345                 350

Asp Leu Leu Phe Gln Asp Gly Glu Arg Ala Cys Val Phe Gly Ile Val
        355                 360                 365

Pro Ala Gly Asp Ser Thr Ala Val Leu Gly Asp Thr Phe Leu Arg Ser
    370                 375                 380

Ala Tyr Val Val Tyr Asp Leu Ala Asn Asn Glu Ile Ser Leu Ala Asn
385                 390                 395                 400

Thr Asn Phe Asp Ala Thr Gly Asn Asp Val Leu Glu Ile Gly Thr Gly
                405                 410                 415

Glu Asp Ser Val Pro Gly Ala Thr Lys Val Ala Asn Pro Val Thr Thr
            420                 425                 430

Val Ala Val Asp Gly Ser Gly Ala Arg Ile Gly Gly Pro Thr Gly Ala
        435                 440                 445

Thr Phe Thr Ser Ile Pro Ser Ala Thr Ser Gly Gly His Ala Thr Ala
    450                 455                 460

Arg Phe Met Gly Ala Thr Arg Leu Leu Ala Phe Gly Ala Ala Val Ile
465                 470                 475                 480

Gly Tyr Met Leu Thr Phe
                485


<210>  522
<211>  761
<212>  PRT
<213>  Trichoderma reesei

<400>  522

Met Arg Ser Thr Leu Tyr Gly Leu Ala Ala Leu Pro Leu Ala Ala Gln
1               5                   10                  15

Ala Leu Glu Phe Ile Asp Asp Thr Val Ala Gln Gln Asn Gly Ile Met
            20                  25                  30

Arg Tyr Thr Leu Thr Thr Thr Lys Gly Ala Thr Ser Lys His Leu His
        35                  40                  45

Arg Arg Gln Asp Ser Ala Asp Leu Met Ser Gln Gln Thr Gly Tyr Phe
    50                  55                  60
```

```
Tyr Ser Ile Gln Leu Glu Ile Gly Thr Pro Pro Gln Ala Val Ser Val
65                  70                  75                  80

Asn Phe Asp Thr Gly Ser Ser Glu Leu Trp Val Asn Pro Val Cys Ser
                85                  90                  95

Lys Ala Thr Asp Pro Ala Phe Cys Lys Thr Phe Gly Gln Tyr Asn His
            100                 105                 110

Ser Thr Thr Phe Val Asp Ala Lys Ala Pro Gly Gly Ile Lys Tyr Gly
        115                 120                 125

Thr Gly Phe Val Asp Phe Asn Tyr Gly Tyr Asp Tyr Val Gln Leu Gly
    130                 135                 140

Ser Leu Arg Ile Asn Gln Gln Val Phe Gly Val Ala Thr Asp Ser Glu
145                 150                 155                 160

Phe Ala Ser Val Gly Ile Leu Gly Ala Gly Pro Asp Leu Ser Gly Trp
                165                 170                 175

Thr Ser Pro Tyr Pro Phe Val Ile Asp Asn Leu Val Lys Gln Gly Phe
            180                 185                 190

Ile Lys Ser Arg Ala Phe Ser Leu Asp Ile Arg Gly Leu Asp Ser Asp
        195                 200                 205

Arg Gly Ser Val Thr Tyr Gly Gly Ile Asp Ile Lys Lys Phe Ser Gly
    210                 215                 220

Pro Leu Ala Lys Lys Pro Ile Ile Pro Ala Ala Gln Ser Pro Asp Gly
225                 230                 235                 240

Tyr Thr Arg Tyr Trp Val His Met Asp Gly Met Ser Ile Thr Lys Glu
                245                 250                 255

Asp Gly Ser Lys Phe Glu Ile Phe Asp Lys Pro Asn Gly Gln Pro Val
            260                 265                 270

Leu Leu Asp Ser Gly Tyr Thr Val Ser Thr Leu Pro Gly Pro Leu Met
        275                 280                 285

Asp Lys Ile Leu Glu Ala Phe Pro Ser Ala Arg Leu Glu Ser Thr Ser
    290                 295                 300

Gly Asp Tyr Ile Val Asp Cys Asp Ile Ile Asp Thr Pro Gly Arg Val
305                 310                 315                 320

Asn Phe Lys Phe Gly Asn Val Val Val Asp Val Glu Tyr Lys Asp Phe
                325                 330                 335
```

```
Ile Trp Gln Gln Pro Asp Leu Gly Ile Cys Lys Leu Gly Val Ser Gln
            340                 345                 350

Asp Asp Asn Phe Pro Val Leu Gly Asp Thr Phe Leu Arg Ala Ala Tyr
        355                 360                 365

Val Val Phe Asp Trp Asp Asn Gln Glu Val His Ile Ala Ala Asn Glu
    370                 375                 380

Asp Cys Gly Asp Glu Leu Ile Pro Ile Gly Ser Gly Pro Asp Ala Ile
385                 390                 395                 400

Pro Ala Ser Ala Ile Gly Lys Cys Ser Pro Ser Val Lys Thr Asp Thr
                405                 410                 415

Thr Thr Ser Val Ala Glu Thr Thr Ala Thr Ser Ala Ala Ala Ser Thr
            420                 425                 430

Ser Glu Leu Ala Ala Thr Thr Ser Glu Ala Ala Thr Thr Ser Ser Glu
        435                 440                 445

Ala Ala Thr Thr Ser Ala Ala Ala Glu Thr Thr Ser Val Pro Leu Asn
    450                 455                 460

Thr Ala Pro Ala Thr Thr Gly Leu Leu Pro Thr Thr Ser His Arg Phe
465                 470                 475                 480

Ser Asn Gly Thr Ala Pro Tyr Pro Ile Pro Ser Leu Ser Ser Val Ala
                485                 490                 495

Ala Ala Ala Gly Ser Ser Thr Val Pro Ser Glu Ser Ser Thr Gly Ala
            500                 505                 510

Ala Ala Ala Gly Thr Thr Ser Ala Ala Thr Gly Ser Gly Ser Gly Ser
        515                 520                 525

Gly Ser Gly Asp Ala Thr Thr Ala Ser Ala Thr Tyr Thr Ser Thr Phe
    530                 535                 540

Thr Thr Thr Asn Val Tyr Thr Val Thr Ser Cys Pro Pro Ser Val Thr
545                 550                 555                 560

Asn Cys Pro Val Gly His Val Thr Thr Glu Val Val Val Ala Tyr Thr
                565                 570                 575

Thr Trp Cys Pro Val Glu Asn Gly Pro His Pro Thr Ala Pro Pro Lys
            580                 585                 590

Pro Ala Ala Pro Glu Ile Thr Ala Thr Phe Thr Leu Pro Asn Thr Tyr
        595                 600                 605
```

```
Thr Cys Ser Gln Gly Lys Asn Thr Cys Ser Asn Pro Lys Thr Ala Pro
    610                 615                 620

Asn Val Ile Val Val Thr Pro Ile Val Thr Gln Thr Ala Pro Val Val
625                 630                 635                 640

Ile Pro Gly Ile Ala Ala Pro Thr Pro Thr Pro Ser Val Ala Ala Ser
                645                 650                 655

Ser Pro Ala Ser Pro Ser Val Val Pro Ser Pro Thr Ala Pro Val Ala
            660                 665                 670

Thr Ser Pro Ala Gln Ser Ala Tyr Tyr Pro Pro Pro Pro Pro Pro Glu
        675                 680                 685

His Ala Val Ser Thr Pro Val Ala Asn Pro Pro Ala Val Thr Pro Ala
    690                 695                 700

Pro Ala Pro Phe Pro Ser Gly Gly Leu Thr Thr Val Ile Ala Pro Gly
705                 710                 715                 720

Ser Thr Gly Val Pro Ser Gln Pro Ala Gln Ser Gly Leu Pro Pro Val
                725                 730                 735

Pro Ala Gly Ala Ala Gly Phe Arg Ala Pro Ala Ala Val Ala Leu Leu
            740                 745                 750

Ala Gly Ala Val Ala Ala Ala Leu Leu
        755                 760


<210>  523
<211>  546
<212>  PRT
<213>  Trichoderma virens

<400>  523

Met Arg Ser Thr Leu Tyr Ala Leu Ala Ala Trp Pro Leu Ala Ala Gln
1               5                   10                  15

Ala Leu Asp Phe Ile Asp Ser Tyr Thr Ser Glu Gln Asn Gly Ile Met
            20                  25                  30

Arg Tyr Thr Leu Thr Thr Thr Lys Gly Ala Arg Ser Lys His Leu His
        35                  40                  45

Arg Arg Gln Asp Ser Ala Asp Leu Gln Ser Gln Gln Thr Gly Tyr Phe
    50                  55                  60

Tyr Ser Ile Gln Leu Glu Ile Gly Thr Pro Pro Gln Ala Val Ser Val
65                  70                  75                  80

Asn Phe Asp Thr Gly Ser Ser Glu Leu Trp Val Asn Pro Val Cys Ser
```

85 90 95

Lys Ala Thr Asp Pro Ala Phe Cys Glu Thr Phe Gly Arg Tyr Ser Asn
100 105 110

Ser Thr Thr Phe Val Asp Thr Gln Ala Pro Gly Gly Ile Lys Tyr Gly
115 120 125

Thr Gly Phe Val Asp Phe Thr Tyr Gly Tyr Asp Tyr Val Gln Leu Gly
130 135 140

Ser Leu Arg Ile Asn Gln Gln Val Phe Gly Val Ala Thr Asp Ser Glu
145 150 155 160

Phe Ala Ser Val Gly Ile Leu Gly Ala Gly Pro Asp Leu Ser Gly Trp
165 170 175

Lys Ser Pro Tyr Pro Phe Val Ile Asp Asn Leu Ala Lys Gln Gly Phe
180 185 190

Ile Gln Ser Arg Ala Phe Ser Leu Asp Ile Arg Gly Ile Asp Ser Asp
195 200 205

Arg Gly Ser Val Thr Tyr Gly Gly Ile Asp Val Lys Lys Phe Ser Gly
210 215 220

Pro Leu Ala Lys Arg Pro Ile Ile Pro Ala Ala Ser Ser Pro Asp Gly
225 230 235 240

Tyr Thr Arg Tyr Trp Val Tyr Met Asp Gly Met Ser Ile Thr Lys Glu
245 250 255

Asp Gly Ser Asp Leu Glu Ile Phe Asp Lys Pro Asn Gly Gln Pro Val
260 265 270

Leu Leu Asp Ser Gly Tyr Thr Val Ser Thr Leu Pro Gly Pro Leu Phe
275 280 285

Glu Lys Ile Leu Leu Ala Phe Pro Ser Ala Arg Leu Glu Ser Ser Ser
290 295 300

Gly Asp Tyr Ile Val Asp Cys Asp Ile Ile Asp Ser Pro Gly Arg Val
305 310 315 320

Asn Phe Lys Phe Gly Asp Val Val Val Asp Val Glu Tyr Lys Asp Phe
325 330 335

Ile Trp Gln Gln Pro Asp Leu Gly Ile Cys Lys Leu Gly Val Ser Gln
340 345 350

Asp Asp Gln Phe Pro Val Leu Gly Asp Thr Phe Leu Arg Ala Ala Tyr

355 360 365

Val Val Phe Asp Trp Asp Asn Gln Asn Ile His Ile Ala Ala Asn Glu
370 375 380

Asp Cys Gly Thr Glu Leu Ile Pro Ile Gly Ser Gly Pro Asp Ala Ile
385 390 395 400

Pro Ala Ser Ala Ile Gly Gln Cys Ser Ser Ser Val Asn Lys Thr Thr
405 410 415

Thr Ser Ala Val Gln Thr Thr Thr Ser Ala Ala Ala Ser Thr Ser Lys
420 425 430

Leu Ala Thr Thr Ser Ala Val Ala Thr Thr Ser Ala Ala Ala Thr Thr
435 440 445

Ser Gly Ala Ala Ser Ser Gly His Leu Pro Thr Thr Ser His His Phe
450 455 460

Gly Asn Gly Thr Val Val Tyr Ser Leu Pro Thr Leu Ser Ser Thr Ser
465 470 475 480

Val Ser Glu Gln Ser Thr Asp Ala Ala Lys Gly Thr Thr Thr Ala Ala
485 490 495

Gly Ala Gly Thr Thr Ala Ala Pro Thr Tyr Thr Ser Thr Phe Thr Thr
500 505 510

Thr Asn Val Tyr Thr Val Thr Ser Cys Pro Pro Ser Val Thr Asn Cys
515 520 525

Pro Val Gly His Val Thr Thr Glu Ile Val Thr Ser Tyr Thr Thr Trp
530 535 540

Cys Pro
545

<210> 524
<211> 549
<212> PRT
<213> Trichoderma atroviride

<400> 524

Met Arg Ser Thr Leu Tyr Ala Leu Ala Ala Trp Pro Leu Ala Ala Gln
1 5 10 15

Ala Leu Glu Phe Leu Asp Asp Asn Lys Asn Val Glu Glu Gly Gly Ile
20 25 30

Met Arg Tyr Ser Leu Thr Ala Ala Lys Gly Ala Arg Ser Lys His Leu
35 40 45

```
His Arg Arg Gln Asp Thr Ala Glu Leu Gln Ser Gln Glu Thr Gly Tyr
    50                  55                  60

Phe Tyr Ser Ile Glu Leu Glu Ile Gly Thr Pro Pro Gln Ala Val Ser
65                  70                  75                  80

Val Asn Phe Asp Thr Gly Ser Ser Glu Leu Trp Val Asn Pro Glu Cys
                85                  90                  95

Ser Lys Ala Thr Asp Pro Ala Phe Cys Gln Ser Phe Gly Arg Tyr Asn
            100                 105                 110

Ala Ser Lys Thr Phe Val Asp Thr Lys Ala Asp Gly Gly Ile Lys Tyr
        115                 120                 125

Gly Thr Gly Tyr Val Asp Phe Val Tyr Gly Tyr Asp Tyr Val Gln Leu
    130                 135                 140

Gly Ser Ser Arg Ile Ser Gln Gln Leu Phe Gly Val Ala Thr Asp Ser
145                 150                 155                 160

Glu Phe Ala Ser Ile Gly Ile Leu Gly Ala Gly Pro Asn Leu Ser Gly
                165                 170                 175

Trp Thr Ser Ser Tyr Pro Leu Val Ile Asp Asn Leu Ala Lys Gln Gly
            180                 185                 190

Phe Ile Asn Ser Arg Ala Phe Ser Leu Asp Ile Arg Gly Leu Asp Ser
        195                 200                 205

Asp Arg Gly Ser Val Ile Tyr Gly Gly Ile Asp Thr Lys Lys Phe Ser
    210                 215                 220

Gly Pro Leu Val Lys Arg Pro Ile Ile Pro Ala Ala Ser Ser Pro Asp
225                 230                 235                 240

Gly Tyr Thr Arg Tyr Trp Ile Tyr Met Asp Gly Met Thr Ile Thr Thr
                245                 250                 255

Glu Asp Gly Ser His Val Glu Ile Phe Asn Lys Pro Asn Gly Gln Pro
            260                 265                 270

Val Leu Leu Asp Ser Gly Tyr Thr Val Ser Thr Leu Pro Ser Ser Ile
        275                 280                 285

Phe Thr Lys Ile Leu Ala Ala Phe Pro Met Ala His Ile Glu Ala Ser
    290                 295                 300

Ser Gly Asp Tyr Leu Val Pro Cys Asp Ile Ile Asp Thr Pro Gly Ser
305                 310                 315                 320
```

```
Val Asn Phe Gln Phe Gly Asp Ala Thr Val Ser Val Asp Tyr Lys Asp
                325                 330                 335

Phe Ile Trp Gln Gln Pro Asp Leu Gly Ile Cys Lys Leu Gly Val Ser
            340                 345                 350

Gln Asp Asp Asp Phe Pro Val Leu Gly Asp Thr Phe Leu Arg Ala Ala
        355                 360                 365

Tyr Val Val Phe Asp Trp Asp Asn Gln Asn Ile His Val Ala Lys Asn
    370                 375                 380

Glu Asp Cys Gly Thr His Leu Ile Pro Ile Gly Lys Gly Ala Asp Ala
385                 390                 395                 400

Val Pro Ser Gly Leu Lys Gly Asp Cys Ala Ala Ala Gly Gln Thr Thr
                405                 410                 415

Thr Ser Ala Val Gln Thr Thr Ser Ala Ala Ala Ser Thr Ser Ala Arg
            420                 425                 430

Val Ser Thr Ser Ala Ala Ala Thr Thr Thr Ser Val Ala Ile Thr Thr
        435                 440                 445

Thr Ala Pro Ala Thr Ser Gly Leu Lys Ala Thr Thr Ser Ser His Arg
    450                 455                 460

Phe Ala Asn Gly Thr Val Thr Tyr Ser Val Pro His Gly Arg Thr Thr
465                 470                 475                 480

Val Ile Ser Glu Ile Ser Ser Ala Ala Ala Thr Gln Leu Asp Thr Thr
                485                 490                 495

Thr Ala Pro Ala Ser Gly Thr Thr Ala Ala Pro Thr Tyr Thr Ser Thr
            500                 505                 510

Phe Thr Thr Thr Asn Val Tyr Thr Ile Thr Ser Cys Pro Pro Ser Val
        515                 520                 525

Thr Asn Cys Pro Val Gly His Val Thr Thr Glu Val Val Thr Ala Tyr
    530                 535                 540

Thr Thr Trp Cys Pro
545

<210>  525
<211>  811
<212>  PRT
<213>  Fusarium pseudograminearum

<400>  525
```

```
Met Leu Ser Thr Leu Phe Leu Ala Val Ala Ala Pro Ala Leu Ala Thr
1               5                  10                  15

Ala Phe Asn Ala Pro Asn Val Pro Val Gly Thr Asp Asp Ser Ser Pro
            20                  25                  30

Asp Gly Leu Ile Arg Phe Pro Leu Lys Val Ser Thr Gly Ala Pro Val
        35                  40                  45

Val Lys Gly Val Thr Lys Arg Gln Asn Glu Val Ala Leu Glu Ser Gln
    50                  55                  60

Gln Asn Gly Phe Phe Tyr Ser Ile Asp Val Thr Leu Gly Thr Pro Gly
65                  70                  75                  80

Gln Lys Val Thr Val Asn Leu Asp Thr Gly Ser Ala Glu Leu Trp Val
                85                  90                  95

Asn Pro Val Cys Glu Lys Ala Gln Gln Pro Ala Phe Cys Lys Gln Phe
            100                 105                 110

Gly His Phe Gly Glu Ser Ser Thr Phe Val Asp Leu Asn Thr Thr Gly
        115                 120                 125

Gly Val Val Tyr Gly Thr Gly Tyr Ala Tyr Trp Asn Tyr Gly Tyr Asp
    130                 135                 140

Asn Val Val Val Gly Ser Ala Ala Ile Arg Asn Gln Val Phe Gly Val
145                 150                 155                 160

Ala Tyr Asp Ser Ser Phe Thr Gly Val Gly Ile Met Gly Ala Gly Pro
                165                 170                 175

Asp Leu Asn Gly Trp Asp Ala Pro Tyr Pro Leu Val Ile Asp Ser Met
            180                 185                 190

Val Lys Gln Gly Leu Ile Lys Ser Arg Ala Leu Ser Leu Asp Ile Arg
        195                 200                 205

Thr Leu Asn Ser Asp Arg Gly Ala Val Ile Phe Gly Gly Ile Asp Thr
    210                 215                 220

Ala Lys Tyr Thr Gly Arg Leu Gln Lys Leu Pro Ile Ile Pro Ala Ala
225                 230                 235                 240

Ser Ser Pro Asp Gly Leu Thr Arg Tyr Trp Val Asn Leu Asp Gly Ile
                245                 250                 255

Ser Leu Val Gln Glu Asp Gly Thr Val Asp Ser Ala Phe Ser Gly Ser
            260                 265                 270
```

```
Thr Pro Gln Pro Val Leu Leu Asp Ser Gly Tyr Thr Val Ser Ala Leu
        275                 280                 285

Pro Gly Ser Ile Phe Asn Lys Ile Val Ala Ala Phe Pro Thr Ala Lys
    290                 295                 300

Ser Asn Gly Gly Ala Tyr Val Asp Val Asp Cys Ser Val Ala Asp Ile
305                 310                 315                 320

Lys Gly Ser Val Asp Phe Lys Phe Gly Asp Lys Thr Ile Lys Val Pro
                325                 330                 335

Tyr Ala Asp Phe Ile Trp His Asn Asp Glu Arg Cys Val Leu Gly Val
            340                 345                 350

Phe Gln Asp Asp Glu Phe Pro Val Leu Gly Asp Thr Phe Leu Arg Ala
        355                 360                 365

Ala Tyr Val Val Tyr Asp Trp Asp Asn Arg Asn Val Trp Ile Ala Asn
    370                 375                 380

Asn Glu Asp Cys Gly Thr Asn Leu Val Ala Ile Gly Thr Gly Pro Asp
385                 390                 395                 400

Ala Val Pro Asp Leu Val Gly Gln Cys Gly Ser Asp Ser Glu Thr Thr
                405                 410                 415

Thr Ser Ala Ser Glu Thr Ala Ser Ala Thr Gly Thr Glu Thr Glu Thr
            420                 425                 430

Glu Thr Ala Ser Ala Thr Glu Ser Glu Ala Val Thr Ala Thr Thr Glu
        435                 440                 445

Asp Val Thr Ser Ala Glu Thr Asp Thr Thr Thr Gly Tyr Phe Pro Thr
    450                 455                 460

Thr Arg Tyr Ser Asn Gly Thr Val Ser Val Thr Gly Lys Gly Thr Ser
465                 470                 475                 480

Thr Thr Lys Lys Ala Thr Gly Gly Ser Gly Glu Ser Tyr Glu Leu Pro
                485                 490                 495

Ser Tyr Thr Asp Ser Ser Ala Ser Ala Thr Ile Thr Ser Thr Val Val
            500                 505                 510

Thr Ser Lys Val Tyr Thr Val Thr Ala Cys Pro Pro Ser Val Thr Asn
        515                 520                 525

Cys Pro Val Gly His Val Thr Thr Glu Thr Ile Thr Ser Leu Thr Thr
    530                 535                 540
```

```
Tyr Cys Pro Gly Ser Asp Gly Ser Ala Pro His Pro Thr Thr Val Glu
545                 550                 555                 560

Gly Glu Gly Ala Pro His Pro Thr Gly Ala Ala His Leu Thr Ser Tyr
                565                 570                 575

Val Thr Ala Thr Asn Met His Thr Val Thr Ser Cys Pro Gly Glu Gly
            580                 585                 590

Ala Cys His Thr Ser Val Ile Thr Glu Ile Val His Asn Thr Gln Ile
        595                 600                 605

Ala Ser Pro Glu Glu Pro Thr Gly Ile Phe Thr Ile Pro Glu Ala Ile
    610                 615                 620

Gln Cys Gly Ala Gly Asn Phe Gly Cys Lys Glu Ala Thr Thr Lys Gly
625                 630                 635                 640

Tyr Arg Thr Val Thr Ile Thr Pro Val Val Lys Ala Pro Lys Pro Thr
                645                 650                 655

Pro Val Pro Gly Tyr Cys Ala Thr Cys Gly Pro Leu Lys Gly His Gly
            660                 665                 670

His His Asn Asp Asp Asp Asp Lys Glu Thr Ala Thr Gly Gly Tyr Thr
        675                 680                 685

Ala Pro Gly Lys Gln Thr Gly Gly Tyr Asp Gln Pro Thr Gln Ala His
    690                 695                 700

Pro Gly Gln Asp Tyr Pro Arg Pro Thr Gly Asp Ser Pro Lys Pro Thr
705                 710                 715                 720

Gly Gly Ser Asp Lys Pro Thr Gly Asp Ser Asp Lys Pro Ser Gly Asp
                725                 730                 735

Ala Pro Lys Pro Asn Pro Leu Glu Glu Leu Gln Thr Tyr Arg Pro Thr
            740                 745                 750

Asn Val Phe Pro Gln Ile Pro Ser Ser Val Ala Thr Val Val Lys Pro
        755                 760                 765

Thr Gly Thr Pro Gln Ala Gly Gly Pro Ser Glu Pro Ala Gly Thr Pro
    770                 775                 780

Pro Val Val Ile Asn Gly Ala Ser Gly Trp Asn Val Pro Val Val Ala
785                 790                 795                 800

Ala Val Val Val Gly Ala Phe Val Ala Ala Leu
                805                 810
```

<210> 526
<211> 824
<212> PRT
<213> Metarhizium acridum

<400> 526

```
Met Met Leu Ser Ser Leu Phe Ser Leu Ala Ala Leu Pro Leu Ala Thr
1               5                   10                  15

Gln Ala Leu Ala Glu Phe Pro Val Asp Asn Arg Met Val Gln Glu Pro
            20                  25                  30

Gly Leu Ile Arg Phe Pro Leu Asp Ile Ala Ala Gly Ala Pro Thr Lys
        35                  40                  45

Asn Arg Met Pro Lys Arg Gln Asn Glu Ile Gly Val Asn Ala Glu Lys
    50                  55                  60

Ser Gly Phe Phe Tyr Ser Ile Glu Leu Gln Val Gly Thr Pro Ala Gln
65                  70                  75                  80

Ala Val Arg Val Asn Phe Asp Thr Gly Ser Ala Glu Leu Trp Ile Asn
                85                  90                  95

Pro Val Cys Ser Lys Ser Thr Asp Pro Gly Phe Cys Asp Lys Leu Gly
            100                 105                 110

Arg Phe Asn Gly Ser Gln Thr Phe Val Asp Thr Asn Thr Thr His Glu
        115                 120                 125

Ile Arg Tyr Gly Thr Gly Phe Ala Lys Leu Glu Tyr Gly Tyr Asp Tyr
    130                 135                 140

Val Gln Ile Gly Ser Ala Lys Ile Ser Gln Gln Met Phe Gly Val Ala
145                 150                 155                 160

Thr Asp Ser Glu Phe Ala Ser Ala Gly Ile Leu Gly Ala Ala Pro Gln
                165                 170                 175

Leu Lys Gly Trp Lys Ser Asp Tyr Pro Leu Val Leu Asp Asn Leu Ala
            180                 185                 190

Ala Gln Gly Phe Ile Lys Ser Arg Ala Phe Ser Leu Asp Ile Arg Ser
        195                 200                 205

Ile Ala Ser Lys Arg Gly Ser Val Val Phe Gly Gly Ile Asp Thr Lys
    210                 215                 220

Lys Phe Ser Gly His Leu Glu Lys Arg Pro Ile Ile Pro Ala Thr Glu
225                 230                 235                 240
```

```
Ser Pro Asp Lys Leu Thr Arg Tyr Trp Ile Tyr Leu Asp Gly Val Ser
                245                 250                 255

Val Thr Lys Glu Asp Gly Ser Lys Ala Val Ile Phe Asp Gln Ala Asn
            260                 265                 270

Gly Gln Pro Val Leu Leu Asp Ser Gly Tyr Thr Val Ser Ala Leu Pro
        275                 280                 285

Thr Arg His Phe Asn Lys Ile Lys Asp Ala Phe Pro Gly Val Ser Ala
    290                 295                 300

Pro Pro Glu Asp Asp Lys Ser Gly Leu Tyr Arg Val Pro Cys Asp Val
305                 310                 315                 320

Gly Ser Lys Asn Gly Ser Val Asn Phe Lys Phe Gly Lys Thr Glu Ile
                325                 330                 335

Val Val Pro Tyr Asp Asp Phe Ile Trp Lys Gln Pro Glu Asn Asn Leu
            340                 345                 350

Cys Val Leu Gly Val Thr Pro Asp Asp Glu Phe Pro Val Leu Gly Asp
        355                 360                 365

Thr Phe Leu Arg Gly Ala Tyr Ala Val Tyr Asp Gln Asp Asn Arg Asn
    370                 375                 380

Ile His Leu Ala Asn Asn Glu Asp Cys Gly Ser Ser Leu Val Ala Ile
385                 390                 395                 400

Gly Thr Gly Pro Asp Ala Val Pro Ser Val Glu Gly Asp Cys Gly Arg
                405                 410                 415

Pro Glu Pro Thr Thr Thr Ser Thr His Ser Lys Thr Thr Leu Ala Thr
            420                 425                 430

Ile Pro Thr Gly Asn Ser Thr Ile Ser Ser Ala Lys His Thr Thr Ser
        435                 440                 445

Ser Ser Ser Val Val Ser Pro Thr Ser Thr His Ser Thr Thr Ser Ser
    450                 455                 460

Ala Ala Ile Pro Thr Ala His Asn Ser Ser Val Ile Pro Ser Ala Lys
465                 470                 475                 480

Ser Thr Ala Ser Ser Ser Ser Thr Ala Ser Leu Thr Ile Pro Ala Thr
                485                 490                 495

Arg Asn Ser Thr Val Ile Ser Ala Lys Pro Thr Thr Ala Ser Thr Leu
            500                 505                 510
```

```
Val Ser Thr Gly His Glu Asp Asn Thr Val Leu Thr Thr Ser Lys Leu
        515                 520                 525

Ile Ser Thr Thr Ser Lys Pro Ile Ser Ile Thr Ser Lys Ser Thr Ser
    530                 535                 540

Thr Thr Ser Asn Pro Leu Pro Thr Gly Thr Glu Gln Asn Thr Thr Val
545                 550                 555                 560

Pro Val Thr His Thr Ser Thr Phe Thr Thr Thr Ser Val His Thr Ile
                565                 570                 575

Leu Ser Cys Pro Pro Tyr Val Thr Gly Cys Pro Ile Gly Ser Val Thr
            580                 585                 590

Thr Glu Thr Ile Thr Gly Val Thr Thr Trp Cys Pro Gly Asn Thr Ala
        595                 600                 605

Pro Ser Ala Lys Pro Pro Gln Thr Thr Glu Thr Lys Thr Pro Pro Pro
    610                 615                 620

Ala Thr Val Ile Thr Val Gln Pro Thr Val Thr Ser Ala Pro Ser Ile
625                 630                 635                 640

Thr Ser Val Phe Thr Thr Thr Lys Thr His Ala Ile Thr Ser Cys Ser
                645                 650                 655

Glu Gln Ala Ser Cys Asn Lys Gly His Val Thr Thr Glu Val Val Thr
            660                 665                 670

Ser Thr Thr Tyr Leu Cys Pro Glu Ser Thr Ala Thr Phe Thr Ile Pro
        675                 680                 685

Arg Thr His Thr Cys Arg Glu Gly Asp Asn Gly Cys Arg Ser Gly Asp
    690                 695                 700

Val Val Thr Thr Val Phe Thr Val Thr Val Glu Pro Gln Pro Thr Ala
705                 710                 715                 720

Asp Lys Pro Thr Pro Val Pro Gly Cys Gly Asp Asn Cys Val Leu Pro
                725                 730                 735

Pro Pro Ala Gln Thr Arg Pro Ala Ala Glu Thr Thr Ala Ala Glu Thr
            740                 745                 750

Gln Pro Ser Ile Thr Ala Ile Ile Thr Ala Pro Gly Pro Val Pro Thr
        755                 760                 765

Val Pro Gly Thr Asn Gly Thr Ile Thr Thr Thr Ser Lys Pro Gly Asp
    770                 775                 780
```

```
Thr Pro Cys Ser Thr Cys Ser Pro Glu Thr Thr Ser Thr Pro Met Thr
785                 790                 795                 800


Ala Gly Ala Ser Gly Phe Arg Ile Pro Ile Met Ala Val Ala Met Ile
                805                 810                 815


Val Gly Ala Leu Thr Val Ile Leu
            820
```

<210> 527
<211> 811
<212> PRT
<213> Gibberella zeae

<400> 527

```
Met Leu Ser Thr Leu Phe Leu Ala Val Ala Ala Pro Ala Leu Ala Thr
1               5                   10                  15


Ala Phe Asn Ala Pro Asn Val Pro Val Gly Thr Asp Asp Ser Ser Pro
            20                  25                  30


Asp Gly Leu Ile Arg Phe Pro Leu Lys Val Ser Thr Gly Ala Pro Val
        35                  40                  45


Val Lys Gly Val Thr Lys Arg Gln Asn Glu Val Ala Leu Glu Ser Gln
    50                  55                  60


Gln Asn Gly Phe Phe Tyr Ser Ile Asp Val Thr Leu Gly Thr Pro Gly
65                  70                  75                  80


Gln Lys Val Thr Val Asn Leu Asp Thr Gly Ser Ala Glu Leu Trp Val
                85                  90                  95


Asn Pro Val Cys Glu Lys Ala Gln Gln Pro Ala Phe Cys Lys Gln Phe
            100                 105                 110


Gly His Phe Gly Glu Ser Ser Thr Phe Val Asp Leu Asn Thr Thr Gly
        115                 120                 125


Gly Val Val Tyr Gly Thr Gly Tyr Ala Tyr Trp Asn Tyr Gly Tyr Asp
    130                 135                 140


Asn Val Val Val Gly Ser Ala Ala Ile Arg Asn Gln Val Phe Gly Val
145                 150                 155                 160


Ala Tyr Asp Ser Ser Phe Thr Gly Val Gly Ile Met Gly Ala Gly Pro
                165                 170                 175


Asp Leu Asn Gly Trp Asp Ala Pro Tyr Pro Leu Val Ile Asp Ser Met
            180                 185                 190


Val Lys Gln Gly Leu Ile Lys Ser Arg Ala Leu Ser Leu Asp Ile Arg
```

```
        195                 200                 205

Thr Ile Asn Ser Asp Arg Gly Ala Val Ile Phe Gly Gly Ile Asp Thr
    210                 215                 220

Ala Lys Tyr Thr Gly Arg Leu Gln Lys Leu Pro Ile Ile Pro Ala Ala
225                 230                 235                 240

Ser Ser Pro Asp Gly Leu Thr Arg Tyr Trp Val Ser Leu Asp Gly Ile
                245                 250                 255

Ser Leu Val Gln Glu Asp Gly Thr Val Asp Ser Ala Phe Ser Gly Ser
            260                 265                 270

Thr Pro Gln Pro Val Leu Leu Asp Ser Gly Tyr Thr Val Ser Ala Leu
        275                 280                 285

Pro Gly Ser Ile Phe Asn Lys Ile Val Ala Ala Phe Pro Thr Ala Lys
    290                 295                 300

Ser Asn Gly Gly Ala Tyr Val Asp Val Asp Cys Ser Val Ala Asp Ile
305                 310                 315                 320

Lys Gly Ser Val Asp Phe Lys Phe Gly Asp Lys Thr Ile Lys Val Pro
                325                 330                 335

Tyr Ala Asp Phe Ile Trp His Asn Asp Asp Arg Cys Val Leu Gly Val
            340                 345                 350

Phe Gln Asp Asp Glu Phe Pro Val Leu Gly Asp Thr Phe Leu Arg Ala
        355                 360                 365

Ala Tyr Val Val Tyr Asp Trp Asp Asn Arg Asn Val Trp Ile Ala Asn
    370                 375                 380

Asn Glu Asp Cys Gly Thr Asn Leu Val Ala Ile Gly Thr Gly Pro Asp
385                 390                 395                 400

Ala Val Pro Asp Leu Val Gly Gln Cys Gly Ser Asp Ser Glu Thr Thr
                405                 410                 415

Thr Ser Ala Ser Glu Thr Ala Ser Ala Thr Glu Thr Glu Thr Glu Thr
            420                 425                 430

Glu Thr Ala Ser Ala Thr Glu Ser Glu Ala Val Thr Ala Thr Thr Glu
        435                 440                 445

Asp Val Thr Ser Ala Glu Thr Asp Thr Thr Thr Gly Tyr Phe Pro Thr
    450                 455                 460

Thr Arg Tyr Ser Asn Ser Thr Ala Ser Val Thr Gly Lys Gly Thr Ser
```

```
465                 470                 475                 480

Thr Thr Lys Lys Ala Thr Gly Gly Ser Gly Glu Ser Tyr Glu Leu Pro
                485                 490                 495

Ser Tyr Thr Asp Ser Ser Ala Ser Thr Thr Ile Thr Ser Thr Val Val
            500                 505                 510

Thr Ser Lys Val Tyr Thr Val Thr Ala Cys Pro Pro Ser Val Thr Asn
        515                 520                 525

Cys Pro Val Gly Gln Val Thr Thr Glu Thr Ile Thr Ser Leu Thr Thr
    530                 535                 540

Tyr Cys Pro Gly Ser Asp Asp Ser Ser Ser His Ser Thr Thr Val Glu
545                 550                 555                 560

Gly Glu Gly Ala Thr His Pro Thr Gly Ala Val His Leu Thr Ser Tyr
                565                 570                 575

Val Thr Ala Thr Asn Met His Thr Ile Thr Ser Cys Pro Gly Glu Gly
            580                 585                 590

Ala Cys His Thr Ser Val Ile Thr Glu Ile Val His Asn Thr Gln Ile
        595                 600                 605

Ala Ser Pro Glu Glu Pro Thr Gly Ile Phe Thr Ile Pro Glu Ala Ile
    610                 615                 620

Gln Cys Gly Ala Gly Asn Phe Gly Cys Lys Glu Ala Thr Thr Lys Gly
625                 630                 635                 640

Tyr Arg Thr Val Thr Ile Thr Pro Val Val Lys Ala Pro Lys Pro Thr
                645                 650                 655

Pro Val Pro Gly Tyr Cys Ala Thr Cys Gly Pro Leu Lys Gly His Gly
            660                 665                 670

His His Asn Asp Asp Asp Lys Glu Thr Ala Thr Gly Gly Tyr Thr Ala
        675                 680                 685

Pro Gly Lys Gln Thr Gly Gly Tyr Asp Gln Pro Thr Gln Ala His Pro
    690                 695                 700

Gly Gln Asp Tyr Pro Arg Pro Thr Gly Gly Asp Ser Pro Lys Pro Thr
705                 710                 715                 720

Gly Asp Ser His Asn Pro Thr Gly Asp Ser Asp Lys Pro Ser Gly Asp
                725                 730                 735

Ala Pro Lys Pro Asn Pro Leu Glu Glu Leu His Thr Tyr Arg Pro Thr
```

740 745 750

Asn Val Phe Pro Gln Ile Pro Ser Ser Val Ala Thr Val Val Lys Pro
755 760 765

Thr Gly Thr Pro Gln Ala Gly Gly Pro Ser Glu Pro Ala Gly Thr Pro
770 775 780

Pro Val Val Ile Asn Gly Ala Ser Gly Trp Asn Val Pro Val Val Ala
785 790 795 800

Ala Val Val Val Gly Ala Phe Val Ala Ala Leu
805 810

<210> 528
<211> 668
<212> PRT
<213> Myceliophtora thermophila

<400> 528

Met Ser Phe Ala Leu Tyr Ala Ala Ala Leu Leu Pro Val Ala Val Leu
1 5 10 15

Gly Ala Gly Leu Ser Val Pro Glu Asp Asn Arg Met Val Gln Gln Asp
20 25 30

Gly Leu Leu Arg Tyr Pro Leu Met Pro Arg Leu Gly Asn Leu Leu Phe
35 40 45

Gly Lys His Ala Asn Ile Thr Arg Arg Gln Ile Asp Thr Gly Ile Phe
50 55 60

Asp Pro Leu Ser Gly Thr Leu Tyr Thr Ile Glu Leu Thr Leu Gly Thr
65 70 75 80

Pro Gly Gln Thr Val Pro Val Gln Phe Asp Thr Gly Ser Asp Met Leu
85 90 95

Trp Val Asn Pro Val Cys Ser Lys Ala Ala Glu Pro Glu Phe Cys Ala
100 105 110

Ala Gln Pro Arg Phe Thr Asp Ser Ser Thr Leu Val Asp Phe Gly Glu
115 120 125

Gln Gly Asn Ile Thr Tyr Gly Thr Gly Tyr Ala Tyr Tyr Glu Tyr Val
130 135 140

Ala Asp Tyr Val Ala Ile Gly Ser Ala Arg Ile Thr Gln Gln Val Phe
145 150 155 160

Gly Val Ala Leu Asp Ser Ala His Ala Asp Val Gly Ile Phe Gly Ala
165 170 175

```
Gly Pro Asn Leu Asp Gly Trp Asp Ser Ala Tyr Pro Leu Val Val Asp
            180                 185                 190

Ser Leu Ala Gln Gln Gly Tyr Thr Ser Ser Arg Ala Phe Ser Met Asp
        195                 200                 205

Leu Lys Gly Phe Glu Ser Ala Arg Gly Ser Val Ile Phe Gly Gly Ile
    210                 215                 220

Asp Thr Lys Lys Tyr Arg Gly Ser Leu Ile Lys Arg Leu Ile Ile Pro
225                 230                 235                 240

Ala Ala Glu Ser Pro Asp Gly Tyr Thr Arg Phe Trp Ile Tyr Leu Asp
                245                 250                 255

Gly Ile Ser Val Asn Gln Pro Asp Gly Asp Val Val Thr Val Phe Ser
            260                 265                 270

Thr Pro Asp Gly Gly Lys Gly Gln Pro Val Leu Leu Asp Ser Gly Tyr
        275                 280                 285

Thr Leu Ser Ala Leu Pro Arg Pro Ile Phe Gln Lys Leu Val Ala Ala
    290                 295                 300

Phe Pro Ser Ala Gln Tyr Val Ser Ser Ala Asp Val Tyr Val Val Asp
305                 310                 315                 320

Cys Val Asp His Gly Glu Gly Gly Ser Leu Asp Phe Ile Phe Gly Gly
                325                 330                 335

Lys Thr Ile Asn Val Pro Tyr His Glu Phe Val Trp Ala Gln Pro Glu
            340                 345                 350

Ser Asn Thr Cys Val Leu Gly Ala Phe Glu Asp Asp Phe Pro Val Leu
        355                 360                 365

Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Trp Asp Asn
    370                 375                 380

Arg Asn Ile Tyr Leu Ala Gln Ser Asp Asp Cys Gly Ser Asn Leu Val
385                 390                 395                 400

Ala Ile Gly Ser Gly Pro Asp Ala Val Pro Ser Ile Val Gly Glu Cys
                405                 410                 415

Gly Lys Pro Lys Pro Thr Ser Thr Ser Thr Phe Ser Lys Thr Ser Ser
            420                 425                 430

Lys Thr Ser Thr Ala Ser Lys Thr Ser Ser Thr Ser Asp Ser Thr Ser
        435                 440                 445
```

```
Ser Ser Ser Ser His Val Thr Thr Ser Ser Ser Ser Thr Thr Ala Thr
    450                 455                 460

Thr Leu Ser Thr His Lys Pro Pro Phe Pro Thr Ala Ser Gly Asn Phe
465                 470                 475                 480

Thr Thr Thr Arg Ser Pro Thr Thr Thr Thr Ala Ser Ser Thr Ile Ser
                485                 490                 495

Lys Ser Thr Leu Thr Ile Thr Ser Ala Thr Thr Tyr Thr Ile Thr Ser
            500                 505                 510

Cys Pro Pro Thr Val Thr Arg Cys Pro Ala His Glu Val Thr Thr Glu
        515                 520                 525

Ile Ile Thr Lys Thr Thr Ala Val Cys Pro Glu Thr Thr Ala Thr Tyr
    530                 535                 540

Thr Ile Pro Arg Thr Ile Thr Cys Pro Gly Ser Gly Gly Gly Asp Asp
545                 550                 555                 560

Cys Pro Pro Gly Ala Thr Arg Thr Thr Thr Leu Thr Val Thr Leu Ser
                565                 570                 575

Pro Val Gly Pro Thr Asp Arg Thr Thr His Val Val Pro Gly Val Thr
            580                 585                 590

Thr Thr Thr Pro Thr Thr Ile Thr Ala Pro Pro Thr Gly Gln Thr Thr
        595                 600                 605

Thr Thr Leu Val Pro Ala Leu Pro Pro Thr Thr Thr Thr Met Ser Gly
    610                 615                 620

His Arg Gly Ile Asn Gly Thr Val Thr Ala Thr Ser Lys Pro Pro Ala
625                 630                 635                 640

Val Thr Ala Gly Ser Ala Lys Val Gly Leu Val Ser Gly Ala Thr Ala
                645                 650                 655

Ile Val Ala Gly Val Met Ala Val Leu Met Ala Leu
            660                 665
```

<210> 529
<211> 551
<212> PRT
<213> Neurospora crassa

<400> 529

```
Met Leu Pro Val Pro Leu Thr Thr Leu Ser Leu Tyr Val Val Ala Leu
1               5                   10                  15
```

```
Leu Ser Pro Pro Ala Ala Ala Gly Val Leu Ala Ser Ala Thr Thr Lys
            20                  25                  30

Leu Pro Ile Lys Leu Pro Ile Ser Pro Ala Gln Gly His Arg Ser Ser
        35                  40                  45

Thr Ala Ala Ser Pro Ser Leu Thr Ser Arg Ser Ser Ser Ser Gly Asn
    50                  55                  60

Gly Phe Ile Arg Ala Ser Val His Ala Ala His Gly Ala Pro Pro Lys
65                  70                  75                  80

Leu Arg Arg Arg Gln Glu Asp Glu Gly Leu Lys Asn Gln Asn Leu Gly
                85                  90                  95

Thr Thr Tyr Thr Ile Asp Ile Asp Ile Gly Thr Pro Pro Gln Thr Val
            100                 105                 110

Thr Leu Ile Leu Asp Thr Gly Ser Pro Asp Leu Trp Val Asn Pro Gln
        115                 120                 125

Cys Glu Thr Ser Gly Gln Glu Lys Tyr Cys Asn Ser Phe Arg Gln Phe
    130                 135                 140

Asp Tyr Thr Lys Ser Lys Thr Ile Gln Asp Thr Gly Ala Ala Asp Ile
145                 150                 155                 160

Leu Lys Tyr Gly Lys Gly Asn Val Thr Ile Glu Tyr Val Thr Asp Asp
                165                 170                 175

Val Ile Ile Gly Ser Ala Lys Ile Lys Ser Gln Ile Leu Gly Ile Gly
            180                 185                 190

Phe Glu Ser Ile Asp Ile Pro Leu Gly Ile Leu Gly Leu Ser Pro Ser
        195                 200                 205

Val Ser Pro Asp Gly Thr Ser Pro Tyr Pro Tyr Leu Leu Asp Ser Met
    210                 215                 220

Ala Ser Gln Gly Ile Ile Ser Ser Arg Ala Phe Ser Leu Asp Leu Arg
225                 230                 235                 240

Ser Ile Asp Asn Pro Ser Gly Ala Ile Ile Phe Gly Gly Val Asp Leu
                245                 250                 255

Gly Lys Phe Ser Gly Ser Leu Ala Lys Leu Pro Met Leu Asp Pro Ser
            260                 265                 270

Gln Thr Pro Ala Gly Val Asp Arg Tyr Trp Ile Val Leu Ser Gly Val
        275                 280                 285
```

```
Gly Met Thr Tyr Pro Asp Gly Glu Glu Val Glu Ser Glu Glu Ile Gly
    290                 295                 300

Val Pro Val Phe Leu Asp Ser Gly Gly Thr Leu Ser Arg Leu Pro Glu
305                 310                 315                 320

Thr Ile Phe Gln Ala Ile Gly Asp Ser Phe Pro Gly Ser Gln Tyr Asp
                325                 330                 335

Pro Glu Ser Gly Phe Tyr Ile Val Asp Cys Ala Val Ala Glu Gln Ala
            340                 345                 350

Gly Ser Val Asp Phe Ile Phe Gly Ser Ser Gly Ser Arg Ser Ser Lys
        355                 360                 365

Lys Ile Arg Val Pro Tyr Gly Asp Phe Val Trp Glu Val Gln Thr Gly
    370                 375                 380

Val Cys Val Val Gly Val Leu Pro Thr Asp Asp Glu Pro Val Phe Gly
385                 390                 395                 400

Asp Ser Phe Leu Arg Ala Ala Tyr Val Val Phe Asp Gln Asp Asn Arg
                405                 410                 415

Asn Leu His Leu Ala Gln Ala Ala Asn Cys Gly Glu Gln Ile Val Glu
            420                 425                 430

Ile Gly Ser Gly Gln Asp Ala Val Pro Ser Ser Thr Gly Lys Cys Lys
        435                 440                 445

Asp Gly Ser Ala Gly Ser Thr Lys Thr Ala Gly Gly Gly Gly Leu Asp
    450                 455                 460

Val Thr Ala Thr Arg Ala Pro Thr Arg Thr Ala Gly Gly Ser Gly Pro
465                 470                 475                 480

Ala Val Thr Asn Ser Asp Phe Gly Pro Gly Pro Ala Gly Thr Arg Val
                485                 490                 495

Ser Thr Gly Gly Ile Gly Leu Pro Thr Gly Thr Gly Gly Gly Gly Gly
            500                 505                 510

Ser Gly Asp Gly Asn Gly Asn Asn Asp Asp Asp Asp Ser Ala Ala Ser
        515                 520                 525

Gly Leu Asp Val Gly Val Thr Ala Ala Ala Val Leu Ala Gly Leu Asn
    530                 535                 540

Met Leu Ile Val Trp Leu Leu
545                 550
```

<210> 530
<211> 477
<212> PRT
<213> Trichoderma reesei

<400> 530

```
Met Arg Phe Val Gln Tyr Val Ser Leu Ala Gly Leu Phe Ala Ala Ala
1               5                   10                  15

Thr Val Ser Ala Gly Val Val Thr Val Pro Phe Glu Lys Arg Asn Leu
            20                  25                  30

Asn Pro Asp Phe Ala Pro Ser Leu Leu Arg Arg Asp Gly Ser Val Ser
        35                  40                  45

Leu Asp Ala Ile Asn Asn Leu Thr Gly Gly Gly Tyr Tyr Ala Gln Phe
    50                  55                  60

Ser Val Gly Thr Pro Pro Gln Lys Leu Ser Phe Leu Leu Asp Thr Gly
65                  70                  75                  80

Ser Ser Asp Thr Trp Val Asn Ser Val Thr Ala Asp Leu Cys Thr Asp
                85                  90                  95

Glu Phe Thr Gln Gln Thr Val Gly Glu Tyr Cys Phe Arg Gln Phe Asn
            100                 105                 110

Pro Arg Arg Ser Ser Ser Tyr Lys Ala Ser Thr Glu Val Phe Asp Ile
        115                 120                 125

Thr Tyr Leu Asp Gly Arg Arg Ile Arg Gly Asn Tyr Phe Thr Asp Thr
    130                 135                 140

Val Thr Ile Asn Gln Ala Asn Ile Thr Gly Gln Lys Ile Gly Leu Ala
145                 150                 155                 160

Leu Gln Ser Val Arg Gly Thr Gly Ile Leu Gly Leu Gly Phe Arg Glu
                165                 170                 175

Asn Glu Ala Ala Asp Thr Lys Tyr Pro Thr Val Ile Asp Asn Leu Val
            180                 185                 190

Ser Gln Lys Val Ile Pro Val Pro Ala Phe Ser Leu Tyr Leu Asn Asp
        195                 200                 205

Leu Gln Thr Ser Gln Gly Ile Leu Leu Phe Gly Gly Val Asp Thr Asp
    210                 215                 220

Lys Phe His Gly Gly Leu Ala Thr Leu Pro Leu Gln Ser Leu Pro Pro
225                 230                 235                 240
```

```
Ser Ile Ala Glu Thr Gln Asp Ile Val Met Tyr Ser Val Asn Leu Asp
                245                 250                 255

Gly Phe Ser Ala Ser Asp Val Asp Thr Pro Asp Val Ser Ala Lys Ala
            260                 265                 270

Val Leu Asp Ser Gly Ser Thr Ile Thr Leu Leu Pro Asp Ala Val Val
        275                 280                 285

Gln Glu Leu Phe Asp Glu Tyr Asp Val Leu Asn Ile Gln Gly Leu Pro
    290                 295                 300

Val Pro Phe Ile Asp Cys Ala Lys Ala Asn Ile Lys Asp Ala Thr Phe
305                 310                 315                 320

Asn Phe Lys Phe Asp Gly Lys Thr Ile Lys Val Pro Ile Asp Glu Met
                325                 330                 335

Val Leu Asn Asn Leu Ala Ala Ala Ser Asp Glu Ile Met Ser Asp Pro
            340                 345                 350

Ser Leu Ser Lys Phe Phe Lys Gly Trp Ser Gly Val Cys Thr Phe Gly
        355                 360                 365

Met Gly Ser Thr Lys Thr Phe Gly Ile Gln Ser Asp Glu Phe Val Leu
    370                 375                 380

Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Gln
385                 390                 395                 400

Asn Lys Gln Ile Gly Ile Ala Gln Ala Thr Leu Asn Ser Thr Ser Ser
                405                 410                 415

Thr Ile Val Glu Phe Lys Ala Gly Ser Lys Thr Ile Pro Gly Pro Ala
            420                 425                 430

Ser Thr Gly Asp Asp Ser Asp Asp Ser Ser Asp Asp Ser Asp Glu Asp
        435                 440                 445

Ser Ala Gly Ala Ala Leu His Pro Thr Phe Ser Ile Ala Leu Ala Gly
    450                 455                 460

Thr Leu Phe Thr Ala Val Ser Met Met Met Ser Val Leu
465                 470                 475
```

<210> 531
<211> 470
<212> PRT
<213> Trichoderma virens

<400> 531

```
Met Arg Ser Ser Val Gln Tyr Ile Ser Leu Ala Gly Leu Ile Ala Ala
```

```
1               5                  10                  15

Gly Thr Val Ser Ala Gly Ile Val Ser Ile Pro Leu Glu Lys Arg Tyr
            20                  25                  30

Ile Ile Asn Asp Pro Ala Pro Ser Leu Leu Arg Arg Asp Gly Ser Ile
        35                  40                  45

Ser Leu Asp Ala Leu Asn Asn Ile Thr Gly Gly Gly Tyr Tyr Ala Glu
    50                  55                  60

Phe Ser Ile Gly Thr Pro Pro Gln Lys Leu Ser Phe Leu Leu Asp Thr
65                  70                  75                  80

Gly Ser Ser Asp Thr Trp Val Asn Ser Val Lys Ala Asp Leu Cys Thr
                85                  90                  95

Ser Pro Ser Val Gln Gln Thr Val Gly Glu Tyr Cys Tyr Lys Gln Phe
            100                 105                 110

Asn Pro Ser Ser Ser Ser Ser Tyr Lys Ser Ser Thr Glu Asp Phe Asp
        115                 120                 125

Ile Lys Tyr Leu Asp Gly Arg Arg Ile Gln Gly Thr Tyr Phe Lys Asp
    130                 135                 140

Thr Val Thr Ile Asn Gly Ala Ser Ile Lys Ser Gln Gln Leu Gly Leu
145                 150                 155                 160

Ala Leu Val Ser Val Arg Gly Thr Gly Ile Met Gly Leu Gly Phe Thr
                165                 170                 175

Asp Asn Val Ala Ala Asp Val Lys Tyr Pro Thr Ile Ile Asp Asn Met
            180                 185                 190

Val Ser Gln Asn Val Ile Pro Val Pro Ala Phe Ser Leu Tyr Leu Asn
        195                 200                 205

Asp Leu Gln Thr Ser Gln Gly Ala Ile Leu Phe Gly Gly Val Asp Thr
    210                 215                 220

Asp Lys Phe His Asp Gly Leu Ala Thr Leu Pro Leu Gln Pro Leu Pro
225                 230                 235                 240

Ala Asn Val Ala Thr Thr Gln Glu Ile Val Met Tyr Asn Val Gln Leu
                245                 250                 255

Asn Gly Phe Thr Ala Ser Gly Val Asp Thr Pro Ala Val Asn Gly Ser
            260                 265                 270

Ala Ile Leu Asp Ser Gly Ser Thr Leu Thr Leu Leu Pro Asp Ala Val
```

275 280 285

Ala Gln Ser Leu Trp Lys Lys Tyr Gly Val Ile Asn Leu Gln Gly Leu
290 295 300

Pro Ile Pro Phe Val Asp Cys Gly Lys Ala Asn Thr Lys Asp Ala Thr
305 310 315 320

Phe Asn Phe Lys Phe Thr Asn Lys Thr Ile Lys Val Pro Ile Asp Glu
325 330 335

Met Val Ile Asn Asn Leu Ala Ser Ile Gln Gly Glu Ile Met Ser Asp
340 345 350

Pro Thr Leu Ser Ser Leu Phe Lys Gly Trp Ser Gly Val Cys Thr Phe
355 360 365

Gly Ile Ser Ser Thr Arg Asn Tyr Gly Ile Arg Thr Asp Asn Phe Ile
370 375 380

Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu
385 390 395 400

Gln Asn Lys Gln Ile Gly Ile Ala Gln Ala Thr Leu Asn Ser Thr Thr
405 410 415

Ser Ser Ile Val Glu Phe Gln Lys Gly Ser Lys Thr Ile Pro Gly Pro
420 425 430

Val Ser Thr Gly Ala Asp Asp Ser Gly Ser Ala Gly Ser Ala Ile Tyr
435 440 445

Pro Thr Phe Ser Ile Ala Leu Ala Gly Thr Val Phe Thr Ala Leu Ser
450 455 460

Met Met Leu Ser Ala Leu
465 470

<210> 532
<211> 480
<212> PRT
<213> Trichoderma atroviride

<400> 532

Met Arg Ser Thr Leu Gln Tyr Ala Ser Leu Ala Ala Leu Val Ala Ala
1 5 10 15

Gly Thr Ala Ser Ala Gly Val Val Ser Val Pro Phe Glu Lys Arg Phe
20 25 30

Leu Asp Ser Asn Pro Leu Pro Ser Leu Leu Arg Arg Asp Gly Thr Val
35 40 45

```
Ala Leu Asp Ala Leu Asn Asn Ile Thr Gly Gly Gly Tyr Tyr Ala Glu
    50                  55                  60

Phe Ser Val Gly Thr Pro Pro Gln Lys Leu Ser Phe Met Leu Asp Thr
65                  70                  75                  80

Gly Ser Ser Asp Thr Trp Val Asn Ser Val Asp Ala Asp Leu Cys Thr
                85                  90                  95

Asp Ser Ile Ile Gln Glu Glu Val Gly Glu Phe Cys Ser Lys Gln Phe
            100                 105                 110

Asp Gln Thr Lys Ser Lys Ser Phe Asn Ser Thr Arg Gln Leu Phe Asn
        115                 120                 125

Ile Thr Tyr Leu Asp Gly Arg Asn Ile Arg Gly Arg Tyr Phe Lys Asp
    130                 135                 140

Thr Val Thr Ile Asn Asn Ala Ala Ile Lys Asn Gln Gln Met Gly Leu
145                 150                 155                 160

Ala Leu Glu Ser Val Arg Gly Thr Gly Leu Met Gly Leu Gly Phe Arg
                165                 170                 175

Ser Asn Glu Ala Ala Ala Ile Lys Tyr Pro Thr Val Ile Glu Asn Met
            180                 185                 190

Val Ser Gln Lys Ile Ile Ala Met Pro Ala Phe Ser Leu Tyr Leu Asn
        195                 200                 205

Asp Leu Gln Thr Ser Gln Gly Ser Ile Leu Phe Gly Gly Val Asp Thr
    210                 215                 220

Asp Lys Phe His Gly Gly Leu Ala Thr Leu Pro Phe Gln Ser Leu Pro
225                 230                 235                 240

Ala Ser Val Ser Arg Thr Ser Asp Ile Val Met Tyr Ala Val Gln Leu
                245                 250                 255

Asn Gly Leu Lys Val Ser Gly Val Asp Thr Pro Ser Val Asn Ala Thr
            260                 265                 270

Ala Val Leu Asp Ser Gly Ser Thr Ile Ser Leu Leu Pro Gly Asp Val
        275                 280                 285

Val Gln Ala Val Trp Lys Glu Phe Gly Val Met Asn Val Gln Gly Val
    290                 295                 300

Pro Asn Pro Phe Val Asp Cys Ala Lys Ala Asn Leu Lys Asp Thr Ser
305                 310                 315                 320
```

```
Leu Ser Phe Gln Phe Thr Asn Lys Thr Ile Gln Val Pro Ile Asp Glu
                325                 330                 335

Met Val Ile Asn Asn Leu Ala Ser Val Gln Asp Gln Ile Phe Ser Asp
            340                 345                 350

Pro Thr Leu Lys Gln Val Phe Lys Gly Trp Ser Gly Val Cys Thr Phe
        355                 360                 365

Gly Met Ala Ser Thr Ser Asp Phe Gly Ile Ser Ser Asp Gln Phe Val
    370                 375                 380

Leu Leu Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu
385                 390                 395                 400

Gln Asn Gln Gln Val Gly Ile Ala Gln Ala Thr Leu Asn Ser Thr Ser
                405                 410                 415

Ser Ser Ile Ile Glu Phe Gln Ala Gly Ser Lys Ser Ile Pro Gly Pro
            420                 425                 430

Val Ser Thr Gly Ser Asp Asp Ser Ser Ser Asp Asp Gly Asp Ser Ser
        435                 440                 445

Gly Lys Asp Asn Ala Gly Val Ala Leu His Pro Ala Phe Ser Ala Ala
    450                 455                 460

Ile Ala Gly Thr Leu Phe Val Thr Leu Ser Met Ile Met Thr Ala Leu
465                 470                 475                 480

<210>  533
<211>  461
<212>  PRT
<213>  Fusarium pseudograminearum

<400>  533

Met Arg Thr Phe Thr Ile Leu Ala Ser Leu Thr Ile Gly Ala Ser Ala
1               5                   10                  15

Gly Thr Val Ser Ala Pro Phe Val Lys His Gly Phe His Tyr Gly Ala
            20                  25                  30

Ser Ile Asp Lys Arg Asp Thr Leu Asn Leu Glu Ala Leu Asn Asn Ile
        35                  40                  45

Thr Gly Gly Gly Tyr Tyr Ala Glu Phe Gln Ile Gly Thr Pro Pro Gln
    50                  55                  60

Asn Ile Ser Phe Leu Leu Asp Thr Gly Ser Ser Asp Thr Trp Val Asn
65                  70                  75                  80
```

```
Ser Asn Asn Thr Asp Leu Cys His Ser Gln Ala Ala Gln Lys Lys Asn
                85                  90                  95

Gly Tyr Cys Met Thr Thr Phe Lys Pro Glu Asn Ser Arg Thr Phe Lys
            100                 105                 110

Val Val Asp Arg Asp Gly Phe Asp Ile Arg Tyr Leu Asp Thr Arg Arg
        115                 120                 125

Ile Glu Gly Asp Tyr Phe Asn Asp Thr Val Thr Ile Asp Gly Lys Thr
    130                 135                 140

Val Lys Gln Gln Gln Leu Gly Leu Ala Ile Lys Ser Val Arg Pro Thr
145                 150                 155                 160

Gly Ile Met Gly Leu Gly Phe Ser Ala Asn Val Ala Thr Asn Lys Ser
                165                 170                 175

Tyr Pro Ala Ile Val Asp Asn Met Val Ser Gln Gly Leu Ile Asp Thr
            180                 185                 190

Ala Thr Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ser Asp Gln Gly Thr
        195                 200                 205

Ile Leu Phe Gly Gly Ile Asp Thr Lys Arg Phe Tyr Gly Lys Leu Ala
    210                 215                 220

Thr Leu Pro Leu Leu Pro Glu Ser Thr Lys Ser Leu Asn Val Thr Ser
225                 230                 235                 240

Phe Ser Val Ser Leu Gln Gly Leu Asn Val Lys Thr Pro Lys Asn Ser
                245                 250                 255

Asn Gly Ile Lys Met Asp Ser Leu Lys Lys Asn Thr Val Ala Ile Leu
            260                 265                 270

Asp Ser Gly Ser Thr Val Cys Leu Leu Pro Asp Pro Gln Val Asn Glu
        275                 280                 285

Ile Tyr Lys Ala Phe Asp Val Leu Ser Val Gln Asp Val Pro Ile Pro
    290                 295                 300

Phe Val Asp Cys Gly Tyr Gly Lys Asp Lys Gly Lys Gly Ile Ser Phe
305                 310                 315                 320

Asp Phe Glu Phe Asp Gly Lys Thr Ile Ser Ile Pro Met Ser Glu Met
                325                 330                 335

Ile Val Asn Ala Phe Pro Asp Asn Gln Asp Leu Phe Lys Asp Pro Arg
            340                 345                 350
```

```
Leu Asp Ile Tyr Phe Lys Asp Trp Asp Gly Val Cys Met Phe Gly Ile
        355                 360                 365

Ser Pro Ala Ser Thr Tyr Gly Ile Gly Thr Ser Lys Phe Ala Ile Leu
    370                 375                 380

Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Ala Asn
385                 390                 395                 400

Glu Gln Val Gly Ile Ala Glu Ala Tyr His Ser Asn Asn Glu Ser Ser
                405                 410                 415

Val Val Glu Leu Lys Ala Asn Ser Lys Leu Pro Asp Val Ser Gly Val
            420                 425                 430

Pro Glu Pro Gln Asn Ala Ala Gly His Val Ser Pro Ala Ser Leu Val
        435                 440                 445

Thr Leu Ile Val Ala Thr Gly Ile Ala Leu Thr Leu Leu
    450                 455                 460
```

<210> 534
<211> 482
<212> PRT
<213> Gibberella zeae

<400> 534

```
Met Arg Thr Phe Thr Ile Leu Ala Ser Leu Thr Ile Gly Ala Ser Ala
1               5                   10                  15

Gly Thr Val Ser Ala Pro Leu Val Lys His Gly Phe His Tyr Gly Ala
            20                  25                  30

Ser Ile Asp Lys Arg Asp Thr Leu Asn Leu Glu Ala Leu Asn Asn Ile
        35                  40                  45

Thr Gly Gly Gly Tyr Tyr Ala Glu Phe Gln Ile Gly Thr Pro Pro Gln
    50                  55                  60

Asn Ile Ser Phe Leu Leu Asp Thr Gly Ser Ser Asp Thr Trp Val Asn
65                  70                  75                  80

Ser Asn Asn Thr Asp Leu Cys His Ser Gln Ala Ala Gln Lys Lys Asn
                85                  90                  95

Gly Tyr Cys Met Thr Thr Phe Lys Pro Glu Lys Ser Arg Thr Phe Lys
            100                 105                 110

Val Val Asp Arg Asp Gly Phe Asp Ile Arg Tyr Leu Asp Thr Arg Arg
        115                 120                 125
```

```
Ile Glu Gly Asp Tyr Phe Asn Asp Thr Val Thr Ile Asp Gly Lys Thr
    130                 135                 140

Val Lys Gln Gln Gln Leu Gly Leu Ala Ile Lys Ser Val Arg Pro Thr
145                 150                 155                 160

Gly Ile Met Gly Leu Gly Phe Ser Ala Asn Val Ala Thr Asn Lys Ser
                165                 170                 175

Tyr Pro Ala Ile Val Asp Asn Met Val Ser Gln Gly Leu Ile Asp Thr
            180                 185                 190

Ala Ala Tyr Ser Leu Trp Leu Asn Asp Leu Asp Ser Asp Gln Gly Thr
        195                 200                 205

Ile Leu Phe Gly Gly Ile Asp Thr Lys Arg Phe Tyr Gly Lys Leu Ala
    210                 215                 220

Thr Leu Pro Leu Leu Pro Glu Ser Thr Lys Ser Leu Asn Val Thr Ser
225                 230                 235                 240

Phe Ser Val Ser Leu Gln Gly Leu Asn Val Lys Thr Pro Lys Asn Ser
                245                 250                 255

Asn Gly Ile Lys Met Asp Ser Leu Lys Lys Asn Thr Val Ala Ile Leu
            260                 265                 270

Asp Ser Gly Ser Thr Val Cys Leu Leu Pro Asp Pro Gln Val Asn Glu
        275                 280                 285

Ile Tyr Lys Ala Phe Asp Val Leu Ser Val Gln Asp Val Pro Ile Pro
    290                 295                 300

Phe Ala Asp Cys Gly Tyr Gly Lys Asp Lys Gly Lys Gly Ile Ser Phe
305                 310                 315                 320

Asp Phe Glu Phe Asp Gly Lys Thr Ile Ser Ile Pro Met Ser Glu Met
                325                 330                 335

Ile Val Asn Ala Phe Pro Asp Asn Gln Asp Leu Phe Lys Asp Pro Arg
            340                 345                 350

Leu Asp Ile Tyr Phe Lys Asp Trp Asp Gly Val Cys Met Phe Gly Ile
        355                 360                 365

Ser Pro Ala Ser Thr Tyr Gly Ile Gly Thr Ser Lys Phe Ala Ile Leu
    370                 375                 380

Gly Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Ala Asn
385                 390                 395                 400
```

Glu Gln Val Gly Ile Ala Glu Ala Tyr Arg Ser Asn Asn Glu Ser Ser
405 410 415

Val Val Glu Leu Lys Ala Asn Ser Lys Leu Pro Asp Val Ser Gly Val
420 425 430

Pro Glu Pro Glu Ser Ala Ala Gly His Val Ser Pro Ala Ser Leu Val
435 440 445

Thr Leu Ile Val Ala Ala Gly Ile Thr Leu Thr Leu Leu Lys Asp Leu
450 455 460

Arg His Leu Cys Tyr Cys Ser Tyr Cys Ser Pro Asn Cys Tyr Thr Val
465 470 475 480

Pro Ala

<210> 535
<211> 482
<212> PRT
<213> Metarhizium anisopliae

<400> 535

Met Pro Ser Leu His His Val Ala Leu Val Leu Gly Ala Val Ala Thr
1 5 10 15

Val Ser Ala Gly Thr Leu Ser Val Pro Leu Glu Arg Arg Gly Pro Ser
20 25 30

Glu Glu His Tyr Arg Leu Leu Gly Arg Ala Ile Ser Arg Arg Ala Ala
35 40 45

Asp Asn Gly Thr Ala Glu Leu Thr Ala Leu Asn Asn Ile Thr Ala Ala
50 55 60

Gly Tyr Tyr Ala Asn Phe Ala Ile Gly Thr Pro Gly Gln Asn Leu Thr
65 70 75 80

Phe Gln Leu Asp Thr Gly Ser Ser Asp Thr Trp Met Asn Ser Pro Gln
85 90 95

Thr Arg Tyr Cys Arg Ser Ala Thr Ala Gln Ser Glu Ala Gly Tyr Cys
100 105 110

Thr Thr Thr Phe Asn Pro Arg Asp Ser Lys Thr Tyr Thr Leu Val Asp
115 120 125

Gln Gly Gly Phe Asn Ile Thr Tyr Leu Asp Gln Arg Arg Ile Thr Gly
130 135 140

Asp Tyr Phe Asn Asp Thr Val Thr Ile Gly Gly His Glu Ile Ala Asn

145 150 155 160

Gln Gln Leu Gly Leu Ala Ile Ser Ser Thr Arg Pro Thr Gly Ile Met
165 170 175

Gly Leu Gly Phe Ser Ile Asn Val Ala Thr Pro Asn Lys Tyr Pro Thr
180 185 190

Ile Ile Asp Asn Met Val Ser Glu Gly Val Ile Ala His Pro Ser Phe
195 200 205

Ser Leu Tyr Leu Asn Asp Leu Asp Ala Thr Ser Gly Thr Ile Leu Phe
210 215 220

Gly Gly Ile Asp Ser Ala Lys Phe Leu Gly Ser Leu Ala Thr Leu Pro
225 230 235 240

Ile Lys Pro Met Pro Asn Ala Glu Asp Thr Asn Val Thr Ser Tyr Ala
245 250 255

Val Ala Ile Lys Ser Val Ser Ala Thr Gly Val Lys Val Pro Ser Val
260 265 270

Ala Pro Gln Ser Val Gly Ile Leu Asp Ser Gly Ser Thr Ile Ser Leu
275 280 285

Ile Pro Asp Ser Leu Val Lys Pro Ile Gln Asp Lys Phe Gly Val Ile
290 295 300

Val Val Gln Ile Gln Gly Gln Ala Ala Pro Pro Met Ile Asp Cys Ala
305 310 315 320

Trp Lys Gly Ser Lys Gly Asp Gly Ile Leu Ile Ser Phe Glu Phe Asp
325 330 335

Asn Lys Thr Ile Lys Val Pro Ile Ala Asp Met Ala Ile Asp Ser Leu
340 345 350

Pro Asp Glu Leu Gln Gln Ile Leu Lys Ser Asn Asp Ala Pro Ser Gly
355 360 365

Phe Arg Ser Trp Thr Arg Ala Cys Leu Phe Gly Leu Gly Gly Ser Ser
370 375 380

Ala Phe Gly Val Arg Asp Asp Gln Phe Tyr Leu Leu Gly Asp Thr Phe
385 390 395 400

Leu Arg Ser Ala Tyr Val Ala Tyr Asp Met Ala Asn Gln Gln Ile Gly
405 410 415

Leu Ala Gln Ser Asn Pro Asn Ala Thr Gly Ser Asn Val Val Glu Ile

420 425 430

Gln Lys Asp Ala Lys Ser Phe Pro Asn Val Gln Gly Ser Asp Ala Pro
435 440 445

Gly Pro Gly Glu Lys Ala Ser Ala Ser Gly Arg Leu Ala Pro Ser Ser
450 455 460

Ser Val Ala Ala Thr Leu Leu Leu Gly Val Ala Val Val Phe Ser Ala
465 470 475 480

Leu Leu

<210> 536
<211> 529
<212> PRT
<213> Neurospora crassa

<400> 536

Met Lys Ser Thr Leu Ala Thr Leu Leu Ala Leu Ala Ser Val Ala Val
1 5 10 15

Ala Glu Asn Gly Val Val Asn Phe Pro Leu Asn Arg Gly Val Pro His
20 25 30

Phe Arg Val Gly Asn Val Arg Gln Asn Val Lys Arg Asp Thr Tyr Ser
35 40 45

Gln Ala Leu Ile Asn Asn Ile Thr Gly Gly Ala Tyr Tyr Ala Glu Val
50 55 60

Thr Val Gly Thr Pro Gly Gln Lys Val Ser Val Val Leu Asp Thr Gly
65 70 75 80

Ser Ser Asp Leu Trp Val Val Ser Tyr Lys Ala Asp Leu Cys Thr Asp
85 90 95

Pro Ser Ile Gln Arg Gln Trp Gly Asp Ser Cys Asp Lys Thr Tyr Asn
100 105 110

Pro Thr Lys Ser Ser Ser Tyr Lys Val Leu Glu Glu Asp Ser Phe Glu
115 120 125

Ile Arg Tyr Leu Asp Asn Ser Thr Ala Ala Gly Asp Tyr Ile Thr Asp
130 135 140

Asp Leu Asn Ile Gly Gly Ala Thr Ile Lys Ser Leu Gln Met Gly Tyr
145 150 155 160

Ala Thr Lys Thr Val Arg Gly Ala Gly Ile Leu Gly Val Gly Tyr Ser
165 170 175

```
Ser Asn Val Ala Ser Gln Gln Arg Tyr Pro Asn Leu Ile Asp Gln Phe
            180                 185                 190

Val Ala Gln Lys Leu Ile Thr Thr Lys Ala Tyr Ser Leu Tyr Leu Asn
        195                 200                 205

Asp Arg Arg Ser Asp Thr Gly Ser Ile Leu Phe Gly Gly Ile Asp Lys
    210                 215                 220

Asp Lys Phe Ile Gly Asp Leu Ser Ile Leu Pro Ile Tyr Leu Ala Lys
225                 230                 235                 240

Gly Gln Ala Glu Pro Ile His Phe Glu Val Glu Met Gln Ser Val Ser
                245                 250                 255

Leu Ala Leu Thr Lys Asn Gly Lys Thr Thr Lys Ile Ile Ser Thr Asp
            260                 265                 270

Pro Ser Leu Ser Gln Thr Ser Thr Ile Ala Ile Leu Asp Ser Gly Thr
        275                 280                 285

Thr Leu Ser Tyr Leu Pro Ser Lys Ile Thr Asp Gln Ile His Thr Lys
    290                 295                 300

Leu Ser Val Tyr Val Asp Glu Ile Trp Thr Gly Leu Thr Phe Ile Asp
305                 310                 315                 320

Cys Gln Tyr Leu Thr Ser Asn Pro Asp Leu Arg Leu Ser Phe Thr Phe
                325                 330                 335

Gly Ala Asn Ala Thr Ile Ser Val Pro Val Trp Glu Leu Val Leu Asp
            340                 345                 350

Leu Leu Gly Glu Ser Gln Ser Glu Leu Pro Phe Lys Met Pro Phe Lys
        355                 360                 365

Asn Ala Cys Ile Phe Gly Ile Gln Ser Thr Ala Gly Phe Gln Glu Asp
    370                 375                 380

Asn Phe Asp Glu Asp Trp Ala Leu Leu Gly Glu Thr Phe Leu Arg Ser
385                 390                 395                 400

Ala Tyr Val Val Tyr Asp Leu Thr His His Gln Ile Gly Ile Ala Gln
                405                 410                 415

Ala Asn Leu Asn Ser Thr Thr Thr Asp Ile Val Glu Leu Ser Gly Ala
            420                 425                 430

Asp Gly Gly Leu Pro Thr Gly Leu Thr Gly Val Lys Glu Gln Gln Thr
        435                 440                 445
```

```
Ser Asn Asp Pro Ser Gly Asn Ala Gly Ser Gly Ser Gly Ser Ser Thr
    450                 455                 460

Asp Lys Asp Gly Ala Lys Glu Thr Glu Thr Val Thr Ala Gly Ser Thr
465                 470                 475                 480

Ala Ala Thr Gly Thr Ala Ala Ser Gly Ala Lys Glu Thr Asp Ser Ala
                485                 490                 495

Ala Ala Gly Leu Ser Ala Arg Gly Gly Ala Val Gly Ala Leu Ala Val
            500                 505                 510

Ala Ser Leu Thr Gly Phe Leu Ala Leu Val Gly Gly Ala Val Val Ala
        515                 520                 525

Leu
```

<210> 537
<211> 566
<212> PRT
<213> Myceliophthora thermophila

<400> 537

```
Met Lys Pro Ser Ser Ala Ile Leu Leu Ala Leu Ala Pro Gly Ser Ser
1               5                   10                  15

Ser Lys Asn Val Val Glu Phe Ser Val Ser Arg Gly Leu Pro Gly Asn
            20                  25                  30

Arg Thr Pro Leu Ser Phe Pro Pro Leu Thr Arg Arg Glu Thr Tyr Ser
        35                  40                  45

Glu Arg Leu Ile Asn Asn Ile Ala Gly Gly Gly Tyr Tyr Val Gln Val
    50                  55                  60

Gln Val Gly Thr Pro Pro Gln Asn Leu Thr Met Leu Leu Asp Thr Gly
65                  70                  75                  80

Ser Ser Asp Ala Trp Val Leu Ser His Glu Ala Asp Leu Cys Ile Ser
                85                  90                  95

Pro Ala Leu Gln Asp Phe Tyr Gly Met Pro Cys Thr Asp Thr Tyr Asp
            100                 105                 110

Pro Ser Lys Ser Ser Ser Lys Lys Met Val Glu Glu Gly Gly Phe Lys
        115                 120                 125

Ile Thr Tyr Leu Asp Gly Gly Thr Ala Ser Gly Asp Tyr Ile Thr Asp
    130                 135                 140
```

```
His Phe Thr Ile Gly Gly Val Thr Val Gln Ser Leu Gln Met Ala Cys
145                 150                 155                 160

Val Thr Lys Ala Val Arg Gly Thr Gly Ile Leu Gly Leu Gly Phe Ser
                165                 170                 175

Ile Ser Glu Arg Ala Ser Thr Lys Tyr Pro Asn Ile Ile Asp Glu Met
            180                 185                 190

Tyr Ser Gln Gly Leu Ile Lys Ser Lys Ala Phe Ser Leu Tyr Leu Asn
        195                 200                 205

Asp Arg Arg Ala Asp Ser Gly Thr Leu Leu Phe Gly Gly Ile Asp Thr
    210                 215                 220

Asp Lys Phe Ile Gly Pro Leu Gly Val Leu Pro Leu His Lys Pro Pro
225                 230                 235                 240

Gly Asp Arg Asp Tyr Ser Ser Phe Glu Val Asn Phe Thr Ser Val Ser
                245                 250                 255

Leu Thr Tyr Thr Asn Gly Ser Arg His Thr Ile Pro Thr Ala Ile Leu
            260                 265                 270

Asn His Pro Ala Pro Ala Val Leu Asp Ser Gly Thr Thr Leu Ser Tyr
        275                 280                 285

Leu Pro Asp Glu Leu Ala Asp Pro Ile Asn Thr Ala Leu Asp Thr Phe
    290                 295                 300

Tyr Asp Asp Arg Leu Gln Met Thr Leu Ile Asp Cys Ser His Pro Leu
305                 310                 315                 320

Leu Arg Thr Asp Pro Asp Phe His Leu Ala Phe Thr Phe Thr Pro Thr
                325                 330                 335

Thr Ser Ile Thr Val Pro Leu Gly Asp Leu Val Leu Asp Ile Leu Pro
            340                 345                 350

Pro Thr Tyr Pro Gln Ser Asn Ser Asn Asn Asn Asn Glu Val Glu Asp
        355                 360                 365

Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Lys Val Pro Pro
    370                 375                 380

Ala Thr Glu Arg Arg Trp Cys Val Phe Gly Ile Gln Ser Thr Thr Arg
385                 390                 395                 400

Phe Ala Ala Ser Ser Gly Gln Ser Glu Ala Asn Phe Thr Leu Leu Gly
                405                 410                 415
```

```
Asp Thr Phe Leu Arg Ser Ala Tyr Val Val Tyr Asp Leu Ser His Tyr
            420                 425                 430

Gln Ile Gly Leu Ala Gln Ala Asn Leu Asn Ser Ser Ser Ser Ser Thr
        435                 440                 445

Asn Thr Asn Thr Ile Val Glu Leu Thr Ala Asp Asn His Asp Asp Gly
    450                 455                 460

Ala Ser Glu Arg Gly Glu Gly Ala Gly Ala Gly Ala Asp Ala Gly Thr
465                 470                 475                 480

Arg Thr Val Ile Ala Gly Gly Leu Pro Ser Gly Leu Met Gly Val Glu
                485                 490                 495

Ala Gln Gln Thr Thr Phe Thr Pro Thr Ala Thr Ala Asn Gly His Pro
            500                 505                 510

Gly Tyr Gly Gly Gly Pro Gly Gly Ser Thr Arg Pro Gly Ser Glu Arg
        515                 520                 525

Asn Ala Ala Ala Gly Gly Phe Thr Ala Val Arg Thr Gly Leu Leu Gly
    530                 535                 540

Glu Leu Val Gly Val Ala Ala Val Thr Ala Leu Phe Ile Leu Leu Gly
545                 550                 555                 560

Gly Ala Leu Ile Ala Val
                565


<210>  538
<211>  249
<212>  PRT
<213>  Aspergillus nidulans

<400>  538

Met Lys Thr Ala Val Lys Thr Thr Ala Leu Leu Ser Leu Leu Ser Thr
1               5                   10                  15

Ala Met Ala Asp Lys Ala Ile Val Gly Gly Asp Asp Ala Glu Ile Thr
            20                  25                  30

Glu Tyr Pro Tyr Gln Ile Ala Leu Leu Ser Gly Gly Ser Leu Ile Cys
        35                  40                  45

Gly Gly Ser Ile Ile Ser Ser Lys Tyr Val Val Thr Ala Gly His Cys
    50                  55                  60

Thr Asp Gly Ala Ser Ala Ser Ser Leu Ser Ile Arg Ala Gly Ser Thr
65                  70                  75                  80
```

```
Tyr His Asp Lys Gly Gly Thr Val Val Asp Val Glu Ala Ile Thr Val
                85                  90                  95

His Pro Glu Tyr Asn Ala Asn Thr Val Asp Asn Asp Ile Ser Ile Leu
            100                 105                 110

Glu Leu Ala Glu Glu Leu Gln Phe Gly Asp Gly Ile Lys Ala Ile Asp
        115                 120                 125

Leu Pro Ser Ser Ser Ser Leu Pro Ser Glu Gly Thr Ile Gly Thr Ala
    130                 135                 140

Thr Gly Trp Gly Ala Leu Thr Glu Gly Gly Asn Val Ser Pro Asn Leu
145                 150                 155                 160

Gln Tyr Val Glu Val Pro Val Val Ser Lys Ser Gln Cys Ser Ser Asp
                165                 170                 175

Tyr Ser Gly Phe Asn Glu Ile Thr Ala Ser Met Phe Cys Ala Gly Glu
            180                 185                 190

Glu Glu Gly Gly Lys Asp Gly Cys Gln Gly Asp Ser Gly Gly Pro Phe
        195                 200                 205

Ala Ala Asp Gly Val Leu Ile Gly Ile Thr Ser Trp Gly Asn Gly Cys
    210                 215                 220

Ala Arg Ala Gly Tyr Pro Gly Val Tyr Ser Ser Pro Ala Tyr Phe Arg
225                 230                 235                 240

Asp Phe Ile Gln Gln Val Thr Gly Leu
                245
```

<210> 539
<211> 897
<212> PRT
<213> Myceliophthora thermophila

<400> 539

```
Met Val Arg Leu Asp Trp Ala Ala Val Leu Leu Ala Ala Thr Ala Val
1               5                   10                  15

Ala Lys Ala Val Thr Pro His Thr Pro Ser Phe Val Pro Gly Ala Tyr
            20                  25                  30

Ile Val Glu Tyr Glu Glu Asp Gln Asp Ser His Ala Phe Val Asn Lys
        35                  40                  45

Leu Gly Gly Lys Ala Ser Leu Arg Lys Asp Leu Arg Phe Lys Leu Phe
    50                  55                  60

Lys Gly Ala Ser Ile Gln Phe Lys Asp Thr Glu Thr Ala Asp Gln Met
```

```
65                  70                  75                  80

Val Ala Lys Val Ala Glu Met Pro Lys Val Lys Ala Val Tyr Pro Val
                85                  90                  95

Arg Arg Tyr Pro Val Pro Asn His Val Val His Ser Thr Gly Asn Val
            100                 105                 110

Ala Asp Glu Val Leu Val Lys Arg Gln Ala Ala Gly Asn Asp Thr Phe
        115                 120                 125

Ser Thr His Leu Met Thr Gln Val Asn Lys Phe Arg Asp Ala Gly Ile
    130                 135                 140

Thr Gly Lys Gly Ile Lys Ile Ala Val Ile Asp Thr Gly Ile Asp Tyr
145                 150                 155                 160

Leu His Glu Ala Leu Gly Gly Cys Phe Gly Pro Asp Cys Leu Val Ser
                165                 170                 175

Tyr Gly Thr Asp Leu Val Gly Asp Asp Phe Asn Gly Ser Asn Thr Pro
            180                 185                 190

Lys Pro Asp Pro Asp Pro Ile Asp Asn Cys Gln Gly His Gly Thr His
        195                 200                 205

Val Ala Gly Ile Ile Ala Ala Gln Thr Asn Asn Pro Phe Gly Ile Ile
    210                 215                 220

Gly Ala Ala Thr Asp Val Thr Leu Gly Ala Tyr Arg Val Phe Gly Cys
225                 230                 235                 240

Asn Gly Asp Thr Pro Asn Asp Val Leu Ile Ala Ala Tyr Asn Met Ala
                245                 250                 255

Tyr Glu Ala Gly Ser Asp Ile Ile Thr Ala Ser Ile Gly Gly Pro Ser
            260                 265                 270

Gly Trp Ser Glu Asp Pro Trp Ala Ala Val Val Thr Arg Ile Val Glu
        275                 280                 285

Asn Gly Val Pro Cys Val Val Ser Ala Gly Asn Asp Gly Asp Ala Gly
    290                 295                 300

Ile Phe Tyr Ala Ser Thr Ala Ala Asn Gly Lys Lys Val Thr Ala Ile
305                 310                 315                 320

Ala Ser Val Asp Asn Ile Val Thr Pro Ala Leu Leu Ser Asn Ala Ser
                325                 330                 335

Tyr Thr Leu Asn Gly Thr Asp Asp Phe Phe Gly Phe Thr Ala Gly Asp
```

```
            340                 345                 350

Pro Gly Ser Trp Asp Asp Val Asn Leu Pro Leu Trp Ala Val Ser Phe
        355                 360                 365

Asp Thr Thr Asp Pro Ala Asn Gly Cys Asn Pro Tyr Pro Asp Ser Thr
    370                 375                 380

Pro Asp Leu Ser Gly Tyr Ile Val Leu Ile Arg Arg Gly Thr Cys Thr
385                 390                 395                 400

Phe Val Glu Lys Ala Ser Tyr Ala Ala Ala Lys Gly Ala Lys Tyr Val
                405                 410                 415

Met Phe Tyr Asn Asn Val Gln Gln Gly Thr Val Thr Val Ser Ala Ala
            420                 425                 430

Glu Ala Lys Gly Ile Glu Gly Val Ala Met Val Thr Ala Gln Gln Gly
        435                 440                 445

Glu Ala Trp Val Arg Ala Leu Glu Ala Gly Ser Glu Val Val Leu His
    450                 455                 460

Met Lys Asp Pro Leu Lys Ala Gly Lys Phe Leu Thr Thr Thr Pro Asn
465                 470                 475                 480

Thr Ala Thr Gly Gly Phe Met Ser Asp Tyr Thr Ser Trp Gly Pro Thr
                485                 490                 495

Trp Glu Val Glu Val Lys Pro Gln Phe Gly Thr Pro Gly Gly Ser Ile
            500                 505                 510

Leu Ser Thr Tyr Pro Arg Ala Leu Gly Ser Tyr Ala Val Leu Ser Gly
        515                 520                 525

Thr Ser Met Ala Cys Pro Leu Ala Ala Ala Ile Tyr Ala Leu Leu Ile
    530                 535                 540

Asn Thr Arg Gly Thr Lys Asp Pro Lys Thr Leu Glu Asn Leu Ile Ser
545                 550                 555                 560

Ser Thr Ala Arg Pro Asn Leu Phe Arg Leu Asn Gly Glu Ser Leu Pro
                565                 570                 575

Leu Leu Ala Pro Val Pro Gln Gln Gly Gly Gly Ile Val Gln Ala Trp
            580                 585                 590

Asp Ala Ala Gln Ala Thr Thr Leu Leu Ser Val Ser Ser Leu Ser Phe
        595                 600                 605

Asn Asp Thr Asp His Phe Lys Pro Val Gln Thr Phe Thr Ile Thr Asn
```

610 615 620

Thr Gly Lys Lys Ala Val Thr Tyr Ser Leu Ser Asn Val Gly Ala Ala
625 630 635 640

Thr Ala Tyr Thr Phe Ala Asp Ala Lys Ser Ile Glu Pro Ala Pro Phe
645 650 655

Pro Asn Glu Leu Thr Ala Asp Phe Ala Ser Leu Thr Phe Val Pro Lys
660 665 670

Arg Leu Thr Ile Pro Ala Gly Lys Arg Gln Thr Val Thr Val Ile Ala
675 680 685

Lys Pro Ser Glu Gly Val Asp Ala Lys Arg Leu Pro Val Tyr Ser Gly
690 695 700

Tyr Ile Ala Ile Asn Gly Ser Asp Ser Ser Ala Leu Ser Leu Pro Tyr
705 710 715 720

Leu Gly Val Val Gly Ser Leu His Ser Ala Val Val Leu Asp Ser Asn
725 730 735

Gly Ala Arg Ile Ser Leu Ala Ser Asp Asp Thr Asn Lys Pro Leu Pro
740 745 750

Ala Asn Thr Ser Phe Val Leu Pro Pro Ala Gly Phe Pro Asn Asp Thr
755 760 765

Ser Tyr Ala Asn Ser Thr Asp Leu Pro Lys Leu Val Val Asp Leu Ala
770 775 780

Met Gly Ser Ala Leu Leu Arg Ala Asp Val Val Pro Leu Ser Gly Gly
785 790 795 800

Ala Ala Thr Ala Thr Ala Arg Leu Thr Arg Thr Val Phe Gly Thr Arg
805 810 815

Thr Ile Gly Gln Pro Tyr Gly Leu Pro Ala Arg Tyr Asn Pro Arg Gly
820 825 830

Thr Phe Glu Tyr Ala Trp Asp Gly Arg Leu Asp Asp Gly Ser Tyr Ala
835 840 845

Pro Ala Gly Arg Tyr Arg Phe Ala Val Lys Ala Leu Arg Ile Phe Gly
850 855 860

Asp Ala Lys Arg Ala Arg Glu Tyr Asp Ala Ala Glu Thr Val Glu Phe
865 870 875 880

Asn Ile Glu Tyr Leu Pro Gly Pro Ser Ala Lys Phe Arg Arg Arg Leu

885 890 895

Phe

<210> 540
<211> 534
<212> PRT
<213> Myceliophthora thermophila

<400> 540

Met Arg Gly Leu Val Ala Phe Ser Leu Ala Ala Cys Val Ser Ala Ala
1 5 10 15

Pro Ser Phe Lys Thr Glu Thr Ile Asn Gly Glu His Ala Pro Ile Leu
20 25 30

Ser Ser Ser Asn Ala Glu Val Val Pro Asn Ser Tyr Ile Ile Lys Phe
35 40 45

Lys Lys His Val Asp Glu Ser Ser Ala Ser Ala His His Ala Trp Ile
50 55 60

Gln Asp Ile His Thr Ser Arg Glu Lys Val Arg Gln Asp Leu Lys Lys
65 70 75 80

Arg Gly Gln Val Pro Leu Leu Asp Asp Val Phe His Gly Leu Lys His
85 90 95

Thr Tyr Lys Ile Gly Gln Glu Phe Leu Gly Tyr Ser Gly His Phe Asp
100 105 110

Asp Glu Thr Ile Glu Gln Val Arg Arg His Pro Asp Val Glu Tyr Ile
115 120 125

Glu Arg Asp Ser Ile Val His Thr Met Arg Val Thr Glu Glu Thr Cys
130 135 140

Asp Gly Glu Leu Glu Lys Ala Ala Pro Trp Gly Leu Ala Arg Ile Ser
145 150 155 160

His Arg Asp Thr Leu Gly Phe Ser Thr Phe Asn Lys Tyr Leu Tyr Ala
165 170 175

Ala Glu Gly Gly Glu Gly Val Asp Ala Tyr Val Ile Asp Thr Gly Thr
180 185 190

Asn Ile Glu His Val Asp Phe Glu Gly Arg Ala Lys Trp Gly Lys Thr
195 200 205

Ile Pro Ala Gly Asp Ala Asp Val Asp Gly Asn Gly His Gly Thr His
210 215 220

```
Cys Ser Gly Thr Ile Ala Gly Lys Lys Tyr Gly Val Ala Lys Lys Ala
225                 230                 235                 240

Asn Val Tyr Ala Val Lys Val Leu Arg Ser Asn Gly Ser Gly Thr Met
                245                 250                 255

Ala Asp Val Val Ala Gly Val Glu Trp Ala Ala Lys Ser His Leu Glu
            260                 265                 270

Gln Val Gln Ala Ala Lys Asp Gly Lys Arg Lys Gly Phe Lys Gly Ser
        275                 280                 285

Val Ala Asn Met Ser Leu Gly Gly Gly Lys Thr Arg Ala Leu Asp Asp
    290                 295                 300

Thr Val Asn Ala Ala Val Ser Val Gly Ile His Phe Ala Val Ala Ala
305                 310                 315                 320

Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser Pro Ala Ala Ala Glu
                325                 330                 335

Lys Ala Val Thr Val Gly Ala Ser Ala Ile Asp Asp Ser Arg Ala Tyr
            340                 345                 350

Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe Ala Pro Gly Leu Ser
        355                 360                 365

Ile Leu Ser Thr Trp Ile Gly Ser Lys Tyr Ala Thr Asn Thr Ile Ser
    370                 375                 380

Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly Leu Leu Ala Tyr Tyr
385                 390                 395                 400

Leu Ser Leu Gln Pro Ala Thr Asp Ser Glu Tyr Ser Val Ala Pro Ile
                405                 410                 415

Thr Pro Glu Lys Met Lys Ser Asn Leu Leu Lys Ile Ala Thr Gln Asp
            420                 425                 430

Ala Leu Thr Asp Ile Pro Asp Glu Thr Pro Asn Leu Leu Ala Trp Asn
        435                 440                 445

Gly Gly Gly Cys Asn Asn Tyr Thr Ala Ile Val Glu Ala Gly Gly Tyr
    450                 455                 460

Lys Ala Lys Lys Lys Thr Thr Thr Asp Lys Val Asp Ile Gly Ala Ser
465                 470                 475                 480

Val Ser Glu Leu Glu Lys Leu Ile Glu His Asp Phe Glu Val Ile Ser
                485                 490                 495
```

```
Gly Lys Val Val Lys Gly Val Ser Ser Phe Ala Asp Lys Ala Glu Lys
            500                 505                 510

Phe Ser Glu Lys Ile His Glu Leu Val Asp Glu Glu Leu Lys Glu Phe
        515                 520                 525

Leu Glu Asp Ile Ala Ala
    530
```

<210> 541
<211> 497
<212> PRT
<213> Aspergillus niger

<400> 541

```
Met Lys Gly Ile Leu Gly Leu Ser Leu Leu Pro Leu Leu Thr Ala Ala
1               5                   10                  15

Ser Pro Val Phe Val Asp Ser Ile His Asn Glu Ala Ala Pro Ile Leu
            20                  25                  30

Ser Ala Thr Asn Ala Lys Glu Val Pro Asp Ser Tyr Ile Val Val Phe
        35                  40                  45

Lys Lys His Val Thr Ser Glu Leu Ala Ser Ala His His Ser Trp Val
    50                  55                  60

Gln Asp Ile His Asp Ser Gln Ser Glu Arg Thr Glu Leu Lys Lys Arg
65                  70                  75                  80

Ser Leu Phe Gly Leu Gly Asp Glu Val Tyr Leu Gly Leu Lys Asn Thr
                85                  90                  95

Phe Asp Ile Ala Gly Ser Leu Ile Gly Tyr Ser Gly His Phe His Glu
            100                 105                 110

Asp Val Ile Glu Gln Val Arg Arg His Pro Asp Val Asp Tyr Ile Glu
        115                 120                 125

Arg Asp Ser Glu Val His Thr Met Glu Gly Ala Thr Glu Lys Asn Ala
    130                 135                 140

Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Ser Leu Thr Phe Gly
145                 150                 155                 160

Asn Phe Asn Lys Tyr Leu Tyr Ala Ser Glu Gly Gly Glu Gly Val Asp
                165                 170                 175

Ala Tyr Thr Ile Asp Thr Gly Ile Asn Val Asp His Val Asp Phe Glu
            180                 185                 190
```

```
Gly Arg Ala Thr Trp Gly Lys Thr Ile Pro Thr Asn Asp Glu Asp Leu
        195                 200                 205

Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Met Ala Gly Lys
    210                 215                 220

Lys Tyr Gly Val Ala Lys Lys Ala Asn Leu Tyr Ala Val Lys Val Leu
225                 230                 235                 240

Arg Ser Ser Gly Ser Gly Thr Met Ser Asp Val Val Ser Gly Val Glu
                245                 250                 255

Tyr Ala Val Gln Ala His Ile Lys Lys Ala Lys Asp Ala Lys Asn Gly
            260                 265                 270

Lys Val Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly
        275                 280                 285

Gly Lys Ser Lys Thr Leu Glu Asp Ala Val Asn Ala Gly Val Glu Ala
    290                 295                 300

Gly Leu His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys
305                 310                 315                 320

Asn Tyr Ser Pro Ala Ala Ala Glu Lys Ala Ile Thr Val Gly Ala Ser
                325                 330                 335

Thr Leu Ala Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Glu Cys Thr
            340                 345                 350

Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly Ser
        355                 360                 365

Asn Tyr Ala Thr Asn Ile Ile Ser Gly Thr Ser Met Ala Ser Pro His
    370                 375                 380

Ile Ala Gly Leu Leu Ala Tyr Phe Val Ser Leu Gln Pro Pro Ser Asp
385                 390                 395                 400

Ser Ala Phe Ala Val Glu Glu Leu Thr Pro Ala Lys Leu Lys Lys Asp
                405                 410                 415

Ile Ile Ala Ile Ala Thr Glu Gly Ala Leu Thr Asp Ile Pro Ser Asn
            420                 425                 430

Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ser Glu Asn Tyr Thr
        435                 440                 445

Asp Ile Val Gly Ser Gly Gly Tyr Lys Val Ser Ser Ala Lys Asn Arg
    450                 455                 460
```

```
Ile Glu Asp Arg Ile Glu Gly Leu Val His Lys Ala Glu Glu Leu Leu
465                 470                 475                 480


Thr Glu Glu Leu Gly Ala Ile Tyr Ser Glu Ile Gln Asp Ala Val Val
                485                 490                 495


Ala



<210>  542
<211>  495
<212>  PRT
<213>  Aspergillus oryzae

<400>  542

Met Arg Gly Ile Leu Gly Leu Ser Leu Leu Pro Leu Leu Ala Ala Ala
1               5                   10                  15


Ser Pro Val Ala Val Asp Ser Ile His Asn Gly Ala Ala Pro Ile Leu
            20                  25                  30


Ser Ala Ser Asn Ala Lys Glu Val Pro Asp Ser Tyr Ile Val Val Phe
        35                  40                  45


Lys Lys His Val Ser Ala Glu Thr Ala Ala Ala His His Thr Trp Val
    50                  55                  60


Gln Asp Ile His Asp Ser Met Thr Gly Arg Ile Asp Leu Lys Lys Arg
65                  70                  75                  80


Ser Leu Phe Gly Phe Ser Asp Asp Leu Tyr Leu Gly Leu Lys Asn Thr
                85                  90                  95


Phe Asp Ile Ala Gly Ser Leu Ala Gly Tyr Ser Gly His Phe His Glu
            100                 105                 110


Asp Val Ile Glu Gln Val Arg Arg His Pro Asp Val Glu Tyr Ile Glu
        115                 120                 125


Lys Asp Thr Glu Val His Thr Met Glu Glu Thr Thr Glu Lys Asn Ala
    130                 135                 140


Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp Ser Leu Ser Phe Gly
145                 150                 155                 160


Thr Phe Asn Lys Tyr Leu Tyr Ala Ser Glu Gly Gly Glu Gly Val Asp
                165                 170                 175


Ala Tyr Thr Ile Asp Thr Gly Ile Asn Ile Glu His Val Asp Phe Glu
            180                 185                 190
```

```
Asp Arg Ala His Trp Gly Lys Thr Ile Pro Ser Asn Asp Glu Asp Ala
        195                 200                 205

Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly Lys
    210                 215                 220

Lys Tyr Gly Val Ala Lys Lys Ala Asn Ile Tyr Ala Val Lys Val Leu
225                 230                 235                 240

Arg Ser Ser Gly Ser Gly Thr Met Ser Asp Val Val Leu Gly Val Glu
                245                 250                 255

Trp Ala Val Gln Ser His Leu Lys Lys Ala Lys Asp Ala Lys Asp Gly
            260                 265                 270

Lys Val Lys Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly
        275                 280                 285

Gly Lys Ser Arg Thr Leu Glu Ala Ala Val Asn Ala Gly Val Glu Ala
    290                 295                 300

Gly Leu His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys
305                 310                 315                 320

Asn Tyr Ser Pro Ala Ala Ala Glu Asn Ala Ile Thr Val Gly Ala Ser
                325                 330                 335

Thr Leu Gln Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr
            340                 345                 350

Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Thr Gly Ser
        355                 360                 365

Lys His Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His
    370                 375                 380

Ile Ala Gly Leu Leu Ala Tyr Phe Val Ser Leu Gln Pro Ala Gln Asp
385                 390                 395                 400

Ser Ala Phe Ala Val Asp Glu Leu Thr Pro Ala Lys Leu Lys Lys Asp
                405                 410                 415

Ile Ile Ser Ile Ala Thr Gln Gly Ala Leu Thr Asp Ile Pro Ser Asp
            420                 425                 430

Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ala Asp Asn Tyr Thr
        435                 440                 445

Gln Ile Val Ala Lys Gly Gly Tyr Lys Ala Gly Ser Asp Asn Leu Lys
    450                 455                 460
```

```
Asp Arg Phe Asp Gly Leu Val Asn Lys Ala Glu Lys Leu Leu Ala Glu
465                 470                 475                 480


Glu Leu Gly Ala Ile Tyr Ser Glu Ile Gln Gly Ala Val Val Ala
                485                 490                 495


<210>  543
<211>  494
<212>  PRT
<213>  Penicillium chrysogenum

<400>  543

Met Lys Gly Phe Leu Ser Leu Thr Leu Leu Pro Leu Leu Val Ala Ala
1               5                   10                  15


Ser Pro Val Ala Val Asn Ser Ile His Asn Asp Ala Ala Pro Ile Leu
            20                  25                  30


Ser Ser Met Thr Ser Lys Asp Ile Pro Asp Ser Tyr Ile Val Val Phe
        35                  40                  45


Lys Lys His Val Asp Pro Ser Ser Ala Ser Ala His Gln Ser Trp Leu
    50                  55                  60


Gln Glu Val His Thr Ala His Thr Gly Arg Met Glu Leu Lys Lys Arg
65                  70                  75                  80


Ser Leu Phe Gly Phe Asp Phe Glu Ala Phe Met Gly Leu Lys His Thr
                85                  90                  95


Phe His Ile Ala Gly Ser Leu Leu Gly Tyr Ala Gly His Phe His Glu
            100                 105                 110


Asp Val Ile Glu Gln Ile Arg Arg His Pro Asp Val Asp Tyr Ile Glu
        115                 120                 125


Lys Asp Ser Glu Val Arg Thr Met Ser Glu Gly Ser Val Glu Lys Asn
    130                 135                 140


Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Glu Ser Leu Ser Phe
145                 150                 155                 160


Gly Asn Phe Asn Lys Tyr Leu Tyr Ala Glu Glu Gly Gly Glu Gly Val
                165                 170                 175


Asp Ala Tyr Val Ile Asp Thr Gly Ala Asn Val Lys His Val Asp Phe
            180                 185                 190


Glu Gly Arg Ala Asn Trp Gly Lys Thr Ile Pro Gln Gly Asp Ala Asp
        195                 200                 205


Glu Asp Gly Asn Gly His Gly Thr His Cys Ser Gly Thr Ile Ala Gly
```

210 215 220

Lys Lys Phe Gly Val Ala Lys Lys Ala Asn Val Tyr Ala Val Lys Val
225 230 235 240

Leu Arg Ser Asn Gly Ser Gly Thr Met Ser Asp Val Val Lys Gly Val
245 250 255

Glu Trp Ala Ala Glu Ala His Ile Lys Lys Ser Lys Lys Gly Asp Lys
260 265 270

Lys Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly Gly Gly Ser Ser
275 280 285

Arg Thr Leu Asp Leu Ala Val Asn Ala Ala Val Asp Ala Gly Ile His
290 295 300

Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala Cys Asn Tyr Ser
305 310 315 320

Pro Ala Ala Ala Glu Lys Ala Ile Thr Val Gly Ala Ser Thr Leu Ala
325 330 335

Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys Thr Asp Ile Phe
340 345 350

Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Val Gly Ser Asp His Ala
355 360 365

Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro His Ile Ala Gly
370 375 380

Leu Leu Ala Tyr Tyr Val Ser Leu Ala Pro Ala Lys Asp Ser Ala Tyr
385 390 395 400

Ala Val Ala Asp Val Thr Pro Lys Gln Leu Lys Ala Ala Leu Ile Ser
405 410 415

Val Ala Thr Glu Gly Thr Leu Thr Asp Ile Pro Ser Asp Thr Pro Asn
420 425 430

Leu Leu Ala Trp Asn Gly Gly Gly Ser Ala Asn Tyr Thr Lys Ile Leu
435 440 445

Ala Asp Gly Gly Tyr Lys Ala His Asn Ala Glu Thr Thr Val Glu Asp
450 455 460

Arg Ile Gly Gly Ile Ile Asp Ser Ala Glu Lys Ala Phe His Lys Glu
465 470 475 480

Leu Gly Ala Ile Tyr Ser Glu Ile Lys Asp Ala Val Ser Ala

485 490

<210> 544
<211> 477
<212> PRT
<213> Aspergillus nidulans

<400> 544

Met Lys Gly Ile Phe Gly Leu Ser Leu Leu Pro Leu Leu Val Ala Ala
1 5 10 15

Ser Pro Val Val Val Asp Ser Ile His Asn Gly Ala Ala Pro Ile Leu
20 25 30

Ser Ser Thr Asn Ala Lys Glu Val Pro Asp Ser Tyr Ile Val Val Phe
35 40 45

Lys Lys His Val Asp Pro Val Ala Ala Ser Val His His Ser Trp Val
50 55 60

Gln Asp Ile His Gly Gln Lys Ser Gly Gly Arg Ala Asp Leu Lys Lys
65 70 75 80

Arg Phe Leu Gly Leu Glu Phe Gly Phe Gly Glu Glu Ile Tyr Asp Gly
85 90 95

Leu Lys Ala Thr Phe Asn Ile Ala Gly Ser Leu Met Gly Tyr Ser Gly
100 105 110

His Phe His Glu Asp Thr Ile Glu Glu Ile Arg Lys His Pro Asp Ile
115 120 125

Glu Tyr Ile Glu Arg Asn Ser Glu Val His Thr Leu Glu Asp Thr Asp
130 135 140

Val Glu Lys Asn Ala Pro Trp Gly Leu Ala Arg Ile Ser His Arg Asp
145 150 155 160

Arg Leu Thr Phe Gly Thr Phe Asn Lys Tyr Leu Tyr Ala Ser Glu Gly
165 170 175

Gly Glu Gly Val Asp Val Tyr Thr Ile Asp Thr Gly Ile Asn Ile Glu
180 185 190

His Glu Asp Phe Glu Gly Arg Ala Phe Trp Gly Lys Thr Ile Pro Asn
195 200 205

Asn Asp Ala Asp Glu Asp Gly Asn Gly His Gly Thr His Cys Ser Gly
210 215 220

Thr Ile Ala Gly Lys Lys Tyr Gly Val Ser Lys Lys Ala Asn Ile Tyr
225 230 235 240

```
Ala Val Lys Val Leu Arg Ser Ser Gly Ser Gly Thr Met Ala Asp Val
                245                 250                 255

Val Gln Gly Val Glu Trp Ala Val Glu Ser His Leu Lys Lys Ala Lys
            260                 265                 270

Lys Gly Gly Asn Gly Phe Lys Gly Ser Val Ala Asn Met Ser Leu Gly
        275                 280                 285

Gly Gly Lys Ser Lys Thr Leu Glu Asp Ala Val Asn Ala Gly Val Glu
    290                 295                 300

Ala Gly Val His Phe Ala Val Ala Ala Gly Asn Asp Asn Ala Asp Ala
305                 310                 315                 320

Cys Ser Tyr Ser Pro Ala Ala Ala Glu Lys Ala Val Thr Val Gly Ala
                325                 330                 335

Ser Thr Leu Ala Asp Glu Arg Ala Tyr Phe Ser Asn Tyr Gly Lys Cys
            340                 345                 350

Thr Asp Ile Phe Ala Pro Gly Leu Asn Ile Leu Ser Thr Trp Ile Gly
        355                 360                 365

Ser Lys Ser Ala Val Asn Thr Ile Ser Gly Thr Ser Met Ala Ser Pro
    370                 375                 380

His Ile Ala Gly Leu Leu Ala Tyr Phe Val Ser Leu Gln Pro Ser Lys
385                 390                 395                 400

Asp Ser Ala Phe Ala Val Asp Phe Thr Pro Glu Lys Leu Lys Lys Asp
                405                 410                 415

Ile Ile Ser Ile Ala Thr Glu Gly Val Leu Thr Asp Ile Pro Ala Asp
            420                 425                 430

Thr Pro Asn Leu Leu Ala Trp Asn Gly Gly Gly Ser Thr Asn Tyr Ser
        435                 440                 445

Asp Ile Ile Ala Lys Gly Gly Tyr Lys Ser Gly Ser His Val Asp Ser
    450                 455                 460

Thr Pro Phe Lys Ala Gly Gly Ile Leu Ala Gln Ala Met
465                 470                 475

<210>  545
<211>  396
<212>  PRT
<213>  Neurospora crassa

<400>  545
```

```
Met Lys Leu Ser Ala Val Leu Ala Leu Leu Pro Leu Ala Met Ala Ala
1               5                  10                  15

Pro Ser Ala Pro Ile Asp Lys Arg Ala Pro Ile Leu Glu Ala Arg Ala
            20                  25                  30

Gly Thr Gln Ala Val Pro Gly Lys Tyr Ile Val Lys Leu Arg Glu Thr
        35                  40                  45

Ala Ser Asp Asp Asp Leu Asp Lys Ala Val Lys Lys Leu Gly Asn Ser
    50                  55                  60

Lys Ala Asp His Val Tyr Lys His Ala Phe Arg Gly Phe Ala Gly Arg
65                  70                  75                  80

Ile Asp Asp Lys Thr Leu Asp Asp Ile Arg Ser Leu Pro Glu Val Glu
                85                  90                  95

Tyr Val Glu Gln Glu Ala Val Phe Thr Ile Asn Thr Tyr Thr Ser Gln
            100                 105                 110

Ser Ser Val Pro Ser Trp Gly Leu Ala Arg Leu Ser Ser Lys Thr Thr
        115                 120                 125

Gly Lys Thr Thr Tyr Val Tyr Asp Ser Ser Ala Gly Ala Gly Thr Cys
    130                 135                 140

Ala Tyr Ile Ile Asp Thr Gly Ile Asn Thr Ala His Ser Asp Phe Gly
145                 150                 155                 160

Gly Arg Ala Thr Trp Leu Ala Asn Tyr Ala Gly Asp Gly Ile Asn Ser
                165                 170                 175

Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val Gly Gly Thr
            180                 185                 190

Thr Tyr Gly Val Ala Lys Lys Thr Gln Leu Tyr Ala Val Lys Val Leu
        195                 200                 205

Asp Ser Asn Gly Ser Gly Ser Asn Ser Gly Val Ile Ala Gly Met Asn
    210                 215                 220

Phe Val Ala Gln Asp Ala Gln Ser Arg Asn Cys Pro Asn Gly Thr Val
225                 230                 235                 240

Ala Asn Met Ser Leu Gly Gly Gly Tyr Ser Ala Ser Thr Asn Ser Ala
                245                 250                 255

Ala Ala Ala Met Val Arg Ala Gly Val Phe Leu Ala Val Ala Ala Gly
            260                 265                 270
```

```
Asn Asp Gly Ala Asn Ala Ala Asn Tyr Ser Pro Ala Ser Glu Pro Thr
        275                 280                 285

Val Cys Thr Val Gly Ala Thr Thr Ser Ala Asp Ala Ile Ala Tyr Tyr
    290                 295                 300

Ser Asn Tyr Gly Thr Ile Val Asp Ile Phe Ala Pro Gly Thr Ser Ile
305                 310                 315                 320

Thr Ser Ala Trp Ile Gly Ser Thr Thr Ala Lys Asn Thr Ile Ser Gly
                325                 330                 335

Thr Ser Met Ala Thr Pro His Ile Thr Gly Leu Gly Ala Tyr Leu Leu
            340                 345                 350

Thr Leu Leu Gly Lys Lys Ser Pro Ala Ala Leu Cys Ser Tyr Ile Ala
        355                 360                 365

Ser Thr Ala Asn Ser Gly Val Ile Ser Gly Ile Pro Arg Gly Thr Val
    370                 375                 380

Asn Lys Leu Ala Phe Asn Gly Asn Pro Ser Ala Tyr
385                 390                 395
```

<210> 546
<211> 392
<212> PRT
<213> Myceliophthora thermophila

<400> 546

```
Met His Phe Ser Thr Ala Leu Leu Ala Phe Leu Pro Ala Ala Leu Ala
1               5                   10                  15

Ala Pro Thr Ala Glu Thr Leu Asp Lys Arg Ala Pro Ile Leu Thr Ala
            20                  25                  30

Arg Ala Gly Gln Val Val Pro Gly Lys Tyr Ile Ile Lys Leu Arg Asp
        35                  40                  45

Gly Ala Ser Asp Asp Val Leu Glu Ala Ala Ile Gly Lys Leu Arg Ser
    50                  55                  60

Lys Ala Asp His Val Tyr Arg Gly Lys Phe Arg Gly Phe Ala Gly Lys
65                  70                  75                  80

Leu Glu Asp Asp Val Leu Asp Ala Ile Arg Leu Leu Pro Glu Val Glu
                85                  90                  95

Tyr Val Glu Glu Glu Ala Ile Phe Thr Ile Asn Ala Tyr Thr Ser Gln
            100                 105                 110
```

```
Ser Asn Ala Pro Trp Gly Leu Ala Arg Leu Ser Ser Lys Thr Ala Gly
        115                 120                 125

Ser Thr Thr Tyr Thr Tyr Asp Thr Ser Ala Gly Glu Gly Thr Cys Ala
    130                 135                 140

Tyr Val Ile Asp Thr Gly Ile Tyr Thr Ser His Ser Asp Phe Gly Gly
145                 150                 155                 160

Arg Ala Thr Phe Ala Ala Asn Phe Val Asp Ser Ser Asn Thr Asp Gly
                165                 170                 175

Asn Gly His Gly Thr His Val Ala Gly Thr Ile Gly Gly Thr Thr Tyr
            180                 185                 190

Gly Val Ala Lys Lys Thr Lys Leu Tyr Ala Val Lys Val Leu Gly Ser
        195                 200                 205

Asp Gly Ser Gly Thr Thr Ser Gly Val Ile Ala Gly Ile Asn Phe Val
    210                 215                 220

Ala Asp Asp Ala Pro Lys Arg Ser Cys Pro Lys Gly Val Val Ala Asn
225                 230                 235                 240

Met Ser Leu Gly Gly Ser Tyr Ser Ala Ser Ile Asn Asn Ala Ala Ala
                245                 250                 255

Ala Leu Val Arg Ser Gly Val Phe Leu Ala Val Ala Ala Gly Asn Glu
            260                 265                 270

Asn Gln Asn Ala Ala Asn Ser Ser Pro Ala Ser Glu Ala Ser Ala Cys
        275                 280                 285

Thr Val Gly Ala Thr Asp Arg Asn Asp Ala Lys Ala Ser Tyr Ser Asn
    290                 295                 300

Tyr Gly Ser Val Val Asp Ile Gln Ala Pro Gly Ser Asn Ile Leu Ser
305                 310                 315                 320

Thr Trp Ile Gly Ser Thr Ser Ala Thr Asn Thr Ile Ser Gly Thr Ser
                325                 330                 335

Met Ala Ser Pro His Ile Ala Gly Leu Gly Ala Tyr Leu Leu Ala Leu
            340                 345                 350

Glu Gly Ser Lys Thr Pro Ala Glu Leu Cys Asn Tyr Ile Lys Ser Thr
        355                 360                 365

Gly Asn Ala Ala Ile Thr Gly Val Pro Ser Gly Thr Thr Asn Arg Ile
    370                 375                 380
```

Ala Phe Asn Gly Asn Pro Ser Ala
385 390

<210> 547
<211> 403
<212> PRT
<213> Aspergillus nidulans

<400> 547

Met His Ser Phe Lys Arg Ser Leu Leu Leu Gly Ala Leu Leu Pro
1 5 10 15

Ala Val Phe Gly Ala Pro Val Glu Pro Arg Arg Ala Ala Glu Lys Val
20 25 30

Pro Gly Lys Tyr Ile Val Thr Phe Lys Ser Gly Leu Asn Val Asp Gln
35 40 45

Ile Asp Ala His Thr Ser Trp Ala Ser Asn Val His Lys Arg Asn Leu
50 55 60

Glu Arg Arg Gly Leu Ala Glu Arg Asp Gln Tyr Ser Gly Ile Glu Lys
65 70 75 80

Asn Tyr Lys Ile Asn Lys Phe Ala Ala Tyr Ser Gly Ser Phe Asp Asp
85 90 95

Ala Thr Ile Glu Glu Ile Arg Asn Ser Ala Asp Val Ala His Val Glu
100 105 110

Glu Asp Gln Ile Trp Tyr Ile Asp Ala Leu Thr Ser Gln Ser Gly Ala
115 120 125

Pro Trp Gly Leu Gly Ala Ile Ser His Lys Gly Glu Ala Ser Thr Thr
130 135 140

Tyr Val Tyr Asp Thr Ser Ala Gly Glu Gly Thr Tyr Ala Tyr Val Val
145 150 155 160

Asp Thr Gly Ile Asn Ala Asp His Glu Glu Phe Gly Gly Arg Ala Ser
165 170 175

Leu Ala Tyr Asn Ala Val Gly Gly Gln His Val Asp Ser Val Gly His
180 185 190

Gly Thr His Val Ala Gly Thr Ile Gly Gly Glu Thr Tyr Gly Val Ser
195 200 205

Lys Lys Ala Asn Leu Leu Ser Val Lys Val Phe Gln Gly Glu Ser Ser
210 215 220

Ser Thr Ser Ile Ile Leu Asp Gly Phe Asn Trp Ala Ala Asn Asp Ile

225 230 235 240

Val Ser Lys Gly Arg Thr Gly Lys Ser Ala Ile Asn Met Ser Leu Gly
245 250 255

Gly Gly Tyr Ser Tyr Ala Phe Asn Gln Ala Val Glu Asp Ala Tyr Asp
260 265 270

Glu Gly Val Leu Ser Val Val Ala Ala Gly Asn Asp Asn Ile Asp Ala
275 280 285

Ser Asp Ser Ser Pro Ala Ser Ala Pro Asn Ala Leu Thr Val Ala Ala
290 295 300

Ser Thr Lys Ser Asn Thr Arg Ala Ser Phe Ser Asn Tyr Gly Ser Val
305 310 315 320

Val Asp Ile Phe Ala Pro Gly Gln Asp Ile Leu Ser Ala Trp Ile Gly
325 330 335

Ser Thr Thr Ala Thr Asn Thr Ile Ser Gly Thr Ser Met Ala Thr Pro
340 345 350

His Val Val Gly Leu Ser Leu Tyr Leu Ile Ala Leu Glu Gly Leu Ser
355 360 365

Ser Ala Ser Ala Val Val Ser Arg Ile Lys Glu Leu Ala Thr Gln Gly
370 375 380

Val Leu Ser Asn Val Gln Gly Ser Pro Asn Leu Leu Ala Tyr Asn Gly
385 390 395 400

Ala Asp Glu

<210> 548
<211> 420
<212> PRT
<213> Myceliophthora thermophila

<400> 548

Met Ala Gly Arg Leu Leu Leu Cys Leu Thr Ala Ala Leu Ser Ala Leu
1 5 10 15

Gly Val Ser Ala Ala Pro Ala Pro Asp Ala Ser Gly Arg Pro Phe Ile
20 25 30

Gly Val Pro Val Ser Asn Pro Gly Ile Ala Asn Ala Ile Pro Asn Arg
35 40 45

Tyr Ile Val Val Tyr Asn Asn Thr Phe Asn Asp Glu Asp Ile Asp Leu
50 55 60

```
His Gln Ser Asn Val Ile Lys Thr Ile Ala Lys Arg Asn Ile Ala Lys
65                  70                  75                  80

Arg Ser Leu Thr Gly Lys Leu Leu Ser Thr Thr Val Asn Thr Tyr Lys
                85                  90                  95

Ile Asn Asn Trp Arg Ala Met Ala Leu Glu Ala Asp Asp Ala Thr Ile
            100                 105                 110

Asn Glu Ile Phe Ala Ala Lys Glu Val Ser Tyr Ile Glu Gln Asp Ala
        115                 120                 125

Val Ile Ser Leu Asn Val Arg Gln Met Gln Ser Gln Ala Thr Thr Gly
    130                 135                 140

Leu Ala Arg Ile Ser His Ala Gln Pro Gly Ala Arg Thr Tyr Ile Phe
145                 150                 155                 160

Asp Ser Ser Ala Gly Glu Gly Ile Thr Ala Tyr Val Val Asp Thr Gly
                165                 170                 175

Ile Arg Val Thr His Glu Glu Phe Glu Gly Arg Ala Thr Phe Ala Ala
            180                 185                 190

Asn Phe Ile Asp Asp Val Asp Thr Asp Glu Gln Gly His Gly Ser His
        195                 200                 205

Val Ala Gly Thr Ile Gly Gly Lys Thr Phe Gly Val Ala Lys Lys Val
    210                 215                 220

Asn Leu Val Ala Val Lys Val Leu Gly Ala Asp Gly Ser Gly Ser Asn
225                 230                 235                 240

Ser Gly Val Ile Ala Gly Met Gln Phe Val Ala Ser Asn Ala Thr Ala
                245                 250                 255

Met Gly Leu Lys Gly Arg Ala Val Met Asn Met Ser Leu Gly Gly Pro
            260                 265                 270

Ala Ser Arg Ala Val Asn Ser Ala Ile Asn Gln Val Glu Ala Ala Gly
        275                 280                 285

Val Val Pro Val Val Ala Ala Gly Asn Glu Ser Gln Asp Thr Ala Asn
    290                 295                 300

Thr Ser Pro Gly Ser Ala Glu Ala Ala Ile Thr Val Gly Ala Ile Asp
305                 310                 315                 320

Gln Thr Asn Asp Arg Met Ala Ser Phe Ser Asn Phe Gly Glu Leu Val
                325                 330                 335
```

```
Asp Ile Phe Ala Pro Gly Val Asn Val Gln Ser Val Gly Ile Arg Ser
            340                 345                 350

Asp Thr Ser Thr Asn Thr Leu Ser Gly Thr Ser Met Ala Ser Pro His
        355                 360                 365

Val Ala Gly Leu Ala Ala Tyr Ile Met Ser Leu Glu Asn Ile Thr Gly
    370                 375                 380

Val Gln Ala Val Ser Asp Arg Leu Lys Glu Leu Ala Gln Ala Thr Gly
385                 390                 395                 400

Ala Arg Ala Arg Gly Val Pro Arg Gly Thr Thr Thr Leu Ile Ala Asn
                405                 410                 415

Asn Gly Phe Ala
            420


<210>  549
<211>  398
<212>  PRT
<213>  Penicillium chrysogenum

<400>  549

Met Gly Phe Leu Lys Val Leu Ala Thr Ser Leu Ala Thr Leu Ala Val
1               5                   10                  15

Val Asn Ala Gly Lys Leu Leu Thr Gly Ser Asp Ala Gly Ala Val Val
            20                  25                  30

Pro Gly Ser Tyr Ile Val Val Met Asn Asp Gly Val Ser Asn Asp Val
        35                  40                  45

Phe Lys Asn His Arg Asp Trp Ala Ala Thr Val His Ala Arg Ile Ala
    50                  55                  60

Ser Arg Lys Gly Gly Glu Ser Gly Pro Gly Lys Asn Phe Asp Ile Asn
65                  70                  75                  80

Gly Met Lys Gly Tyr Thr Ala Ser Phe Asp Asp Arg Thr Val Lys Asp
                85                  90                  95

Ile Ala Ser Asp Pro Ala Val Lys Tyr Val Glu Pro Asp Met Val Val
            100                 105                 110

Asn Ala Thr Glu Asn Val Val Gln Pro Asn Ala Pro Ser Trp Gly Leu
        115                 120                 125

Pro Arg Ile Ser Ser Gln Lys Pro Gly Ala Thr Asp Tyr Val Tyr Asp
    130                 135                 140
```

```
Ser Thr Ala Gly Glu Gly Ile Val Val Tyr Gly Val Asp Thr Gly Ile
145                 150                 155                 160

Asp Ile Arg His Ser Asp Phe Glu Gly Arg Ala Glu Trp Gly Thr Asn
                165                 170                 175

Thr Val Asp Asn Asp Asn Thr Asp Gly Asn Gly His Gly Thr His Thr
            180                 185                 190

Ala Ser Thr Ala Val Gly Ser Lys Phe Gly Val Ala Lys Lys Ala Ser
        195                 200                 205

Val Val Ala Val Lys Val Leu Ser Ala Asp Gly Ser Gly Thr Asn Ser
    210                 215                 220

Gln Val Ile Ala Gly Met Glu Trp Ala Val Lys Asp Ala Lys Ser Arg
225                 230                 235                 240

Gly Val Thr Gly Lys Ser Val Met Asn Met Ser Leu Gly Gly Ala Phe
                245                 250                 255

Ser Arg Ala Met Asn Asp Ala Ala Ala Asn Val Val Lys Ser Gly Val
            260                 265                 270

Phe Leu Ser Val Ala Ala Gly Asn Glu Ala Gln Asp Ala Ser Asn Ser
        275                 280                 285

Ser Pro Ala Ser Ala Pro Asn Val Cys Thr Ile Ala Ala Ser Thr Ser
    290                 295                 300

Ser Asp Arg Ser Ala Ser Phe Ser Asn Phe Gly Ser Val Val Asp Leu
305                 310                 315                 320

Tyr Ala Pro Gly Glu Ser Ile Thr Ala Ala Tyr Pro Gly Gly Gly Ser
                325                 330                 335

Lys Thr Leu Ser Gly Thr Ser Met Ala Ala Pro His Val Ala Gly Ala
            340                 345                 350

Ala Ala Tyr Leu Met Ala Leu Glu Gly Val Ala Ser Asp Lys Ala Cys
        355                 360                 365

Ala Arg Ile Val Glu Leu Ala Ile Ser Ser Ile Ser Ser Ala Pro Phe
    370                 375                 380

Gly Thr Thr Ser Lys Leu Leu Phe Asn Gly Leu Asn Ala Lys
385                 390                 395
```

<210> 550
<211> 421
<212> PRT

<213> Neurospora crassa

<400> 550

```
Met Val Gly Leu Lys Asn Val Ala Leu Phe Ala Ala Ser Ile Ile Leu
1               5                  10                  15

Pro Ala Ser Ile Thr Trp Ala Ala Pro Ile Ile Glu Val Glu Thr Lys
            20                  25                  30

Pro Ile Pro Glu Lys Tyr Ile Val Leu Leu Lys Pro His Ala Asp Leu
        35                  40                  45

Glu Gly His Leu Ser Trp Ala Lys Asp Val His Ala Arg Ser Leu Ser
    50                  55                  60

Arg Arg Asp Thr Ala Gly Val His Lys Ala Trp Ser Val Gly Ser Lys
65                  70                  75                  80

Phe Lys Ala Tyr Ala Gly Glu Phe Asp Glu Glu Thr Leu Lys Ile Ile
                85                  90                  95

Gln Arg Asp Glu Arg Asn Val His Ser Ile Glu Pro Asp Lys Ser Trp
            100                 105                 110

Arg Leu Tyr Lys Ser Asn Lys Lys Asp Asn Asp Asp Ser Asn Ser Asp
        115                 120                 125

Asn Thr Thr Ile Ile Thr Gln Lys Gln Ala Pro Trp Gly Leu Gly Tyr
    130                 135                 140

Leu Ser His Lys Gly Lys Thr Ser Ser Asp Tyr Val Tyr Asn Ser Thr
145                 150                 155                 160

Ala Gly Thr Gly Thr Tyr Ala Tyr Val Val Asp Thr Gly Cys Trp Lys
                165                 170                 175

Asp His Val Glu Phe Glu Gly Arg Val Gln Leu Gly Tyr Asn Ala Tyr
            180                 185                 190

Pro Asp Ser Pro Phe Ile Asp Met Asp Gly His Gly Thr His Val Thr
        195                 200                 205

Gly Thr Leu Ile Ser Lys Thr Tyr Gly Val Ala Lys Asn Ala Thr Val
    210                 215                 220

Ile Cys Val Lys Val Phe His Gly Gly Gly Ser Ala Asn Thr Ile Val
225                 230                 235                 240

Met Asp Gly Phe Glu Trp Ala Val Lys Asp Ile Ile Ala Lys Lys Arg
                245                 250                 255
```

```
Gln Arg Asn Ser Val Ile Asn Met Ser Leu Gly Cys Asp Arg Ser Glu
            260                 265                 270

Ala Phe Asn Ala Ile Val Asp Ala Ala Tyr Asp Gln Gly Ile Leu Thr
        275                 280                 285

Val Val Ala Ala Gly Asn Glu Asn Gln Pro Ala Ala Leu Val Ser Pro
    290                 295                 300

Ala Ser Ser Ala Arg Ala Phe Ser Val Gly Ala Ile Asp Asn Lys Asn
305                 310                 315                 320

Thr Arg Ala Tyr Phe Ser Asn Tyr Gly Ala Ile Val Asp Ile Phe Ala
                325                 330                 335

Pro Gly Val Asn Ile Val Ser Thr Tyr Ile Gly Lys Lys Asp Gly Asp
            340                 345                 350

Asn Asn Arg Thr Met Thr Met Ser Gly Thr Ser Met Ala Ser Pro His
        355                 360                 365

Val Ala Gly Leu Ala Leu Tyr Leu Lys Ser Leu Asp Pro Glu Lys Tyr
    370                 375                 380

Gly Asn Ser Ser Asp Ala His Ser Gly Leu Arg Ala Leu Gly Val Pro
385                 390                 395                 400

Asp Lys Val Trp Asp Ala Gly Glu Met Ser Pro Asn Leu Val Ala Tyr
                405                 410                 415

Asn Gly Val Gln Gly
            420


<210>  551
<211>  658
<212>  PRT
<213>  Aspergillus nidulans

<400>  551

Met Ala Ala Thr Gly Arg Phe Thr Ala Phe Trp Asn Val Ala Ser Val
1               5                   10                  15

Pro Ala Leu Ile Gly Ile Leu Pro Leu Ala Gly Ser His Leu Arg Ala
            20                  25                  30

Val Leu Cys Pro Val Cys Ile Trp Arg His Ser Lys Ala Val Cys Ala
        35                  40                  45

Pro Asp Thr Leu Gln Ala Met Arg Ala Phe Thr Arg Val Thr Ala Ile
    50                  55                  60

Ser Leu Ala Gly Phe Ser Cys Phe Ala Ala Ala Ala Ala Ala Ala Phe
```

```
65                  70                  75                  80

Glu Ser Leu Arg Ala Val Pro Asp Gly Trp Ile Tyr Glu Ser Thr Pro
                85                  90                  95

Asp Pro Asn Gln Pro Leu Arg Leu Arg Ile Ala Leu Lys Gln His Asn
            100                 105                 110

Val Ala Gly Phe Glu Gln Ala Leu Leu Asp Met Ser Thr Pro Gly His
        115                 120                 125

Ser Ser Tyr Gly Gln His Phe Gly Ser Tyr His Glu Met Lys Gln Leu
    130                 135                 140

Leu Leu Pro Thr Glu Glu Ala Ser Ser Ser Val Arg Asp Trp Leu Ser
145                 150                 155                 160

Ala Ala Gly Val Glu Phe Glu Gln Asp Ala Asp Trp Ile Asn Phe Arg
                165                 170                 175

Thr Thr Val Asp Gln Ala Asn Ala Leu Leu Asp Ala Asp Phe Leu Trp
            180                 185                 190

Tyr Thr Thr Thr Gly Ser Thr Gly Asn Pro Thr Arg Ile Leu Arg Thr
        195                 200                 205

Leu Ser Tyr Ser Val Pro Ser Glu Leu Ala Gly Tyr Val Asn Met Ile
    210                 215                 220

Gln Pro Thr Thr Arg Phe Gly Gly Thr His Ala Asn Arg Ala Thr Val
225                 230                 235                 240

Arg Ala Lys Pro Ile Phe Leu Glu Thr Asn Arg Gln Leu Ile Asn Ala
                245                 250                 255

Ile Ser Ser Gly Ser Leu Glu His Cys Glu Lys Ala Ile Thr Pro Ser
            260                 265                 270

Cys Leu Ala Asp Leu Tyr Asn Thr Glu Gly Tyr Lys Ala Ser Asn Arg
        275                 280                 285

Ser Gly Ser Lys Val Ala Phe Ala Ser Phe Leu Glu Glu Tyr Ala Arg
    290                 295                 300

Tyr Asp Asp Leu Ala Glu Phe Glu Glu Thr Tyr Ala Pro Tyr Ala Ile
305                 310                 315                 320

Gly Gln Asn Phe Ser Val Ile Ser Ile Asn Gly Gly Leu Asn Asp Gln
                325                 330                 335

Asp Ser Thr Ala Asp Ser Gly Glu Ala Asn Leu Asp Leu Gln Tyr Ile
```

```
            340                 345                 350

Ile Gly Val Ser Ser Pro Leu Pro Val Thr Glu Phe Thr Thr Gly Gly
        355                 360                 365

Arg Gly Lys Leu Ile Pro Asp Leu Ser Ser Pro Asp Pro Asn Asp Asn
    370                 375                 380

Thr Asn Glu Pro Phe Leu Asp Phe Leu Glu Ala Val Leu Lys Leu Asp
385                 390                 395                 400

Gln Lys Asp Leu Pro Gln Val Ile Ser Thr Ser Tyr Gly Glu Asp Glu
                405                 410                 415

Gln Thr Ile Pro Glu Pro Tyr Ala Arg Ser Val Cys Asn Leu Tyr Ala
            420                 425                 430

Gln Leu Gly Ser Arg Gly Val Ser Val Leu Phe Ser Ser Gly Asp Ser
        435                 440                 445

Gly Val Gly Ala Ala Cys Gln Thr Asn Asp Gly Lys Asn Thr Thr His
    450                 455                 460

Phe Pro Pro Gln Phe Pro Ala Ser Cys Pro Trp Val Thr Ala Val Gly
465                 470                 475                 480

Gly Thr Asn Gly Thr Ala Pro Glu Ser Gly Val Tyr Phe Ser Ser Gly
                485                 490                 495

Gly Phe Ser Asp Tyr Trp Ala Arg Pro Ala Tyr Gln Asn Ala Ala Val
            500                 505                 510

Glu Ser Tyr Leu Arg Lys Leu Gly Ser Thr Gln Ala Gln Tyr Phe Asn
        515                 520                 525

Arg Ser Gly Arg Ala Phe Pro Asp Val Ala Ala Gln Ala Gln Asn Phe
    530                 535                 540

Ala Val Val Asp Lys Gly Arg Val Gly Leu Phe Asp Gly Thr Ser Cys
545                 550                 555                 560

Ser Ser Pro Val Phe Ala Gly Ile Val Ala Leu Leu Asn Asp Val Arg
                565                 570                 575

Leu Lys Ala Gly Leu Pro Val Leu Gly Phe Leu Asn Pro Trp Leu Tyr
            580                 585                 590

Gln Asp Gly Leu Asn Gly Leu Asn Asp Ile Val Asp Gly Gly Ser Thr
        595                 600                 605

Gly Cys Asp Gly Asn Asn Arg Phe Asn Gly Ser Pro Asn Gly Ser Pro
```

610 615 620

Val Ile Pro Tyr Ala Gly Trp Asn Ala Thr Glu Gly Trp Asp Pro Val
625 630 635 640

Thr Gly Leu Gly Thr Pro Asp Phe Ala Lys Leu Lys Ala Leu Val Leu
645 650 655

Asp Ala

<210> 552
<211> 601
<212> PRT
<213> Penicillium chrysogenum

<400> 552

Met Ile Ala Ser Leu Phe Asn Arg Gly Ala Leu Ser Leu Ala Val Leu
1 5 10 15

Ser Leu Leu Ala Ser Ser Ala Ser Ala Asp Val Phe Glu Ser Leu Ser
20 25 30

Ala Val Pro Gln Gly Trp Arg Tyr Ser Arg Arg Pro Arg Ala Asp Gln
35 40 45

Pro Leu Lys Leu Gln Ile Ala Leu Ala Gln Gly Asp Thr Ala Gly Phe
50 55 60

Glu Glu Ala Val Met Asp Met Ser Thr Pro Asp His Pro Ser Tyr Gly
65 70 75 80

Asn His Phe His Thr His Glu Glu Met Lys Arg Met Leu Gln Pro Ser
85 90 95

Ala Glu Ser Ala Asp Ser Ile Arg Asp Trp Leu Glu Ser Ala Gly Ile
100 105 110

Asn Arg Ile Glu Gln Asp Ala Asp Trp Met Thr Phe Tyr Thr Thr Val
115 120 125

Glu Thr Ala Asn Glu Leu Leu Ala Ala Asn Phe Gln Phe Tyr Ala Asn
130 135 140

Ser Ala Lys His Ile Glu Arg Leu Arg Thr Leu Gln Tyr Ser Val Pro
145 150 155 160

Glu Ala Leu Met Pro His Ile Asn Met Ile Gln Pro Thr Thr Arg Phe
165 170 175

Gly Gln Leu Arg Val Gln Gly Ala Ile Leu His Thr Gln Val Lys Glu
180 185 190

```
Thr Asp Glu Ala Phe Arg Ser Asn Ala Val Ser Thr Ser Pro Asp Cys
        195                 200                 205

Asn Ser Ile Ile Thr Pro Gln Cys Leu Lys Asn Met Tyr Asn Val Gly
    210                 215                 220

Asp Tyr Gln Ala Asp Asp Asp Asn Gly Asn Lys Val Gly Phe Ala Ser
225                 230                 235                 240

Tyr Leu Glu Glu Tyr Ala Arg Tyr Ser Asp Leu Glu Leu Phe Glu Lys
                245                 250                 255

Asn Val Ala Pro Phe Ala Lys Gly Gln Asn Phe Ser Val Ile Gln Tyr
            260                 265                 270

Asn Gly Gly Leu Asn Asp Gln His Ser Ser Ala Ser Ser Ser Glu Ala
        275                 280                 285

Asn Leu Asp Leu Gln Tyr Ile Val Gly Val Ser Ser Pro Val Pro Val
    290                 295                 300

Thr Glu Phe Ser Val Gly Gly Arg Gly Glu Leu Val Pro Asp Leu Asp
305                 310                 315                 320

Gln Pro Asp Pro Asn Asp Asn Asn Asn Glu Pro Tyr Leu Glu Phe Leu
                325                 330                 335

Gln Asn Val Leu Lys Met Glu Gln Gln Asp Leu Pro Gln Val Ile Ser
            340                 345                 350

Thr Ser Tyr Gly Glu Asn Glu Gln Ser Val Pro Glu Lys Tyr Ala Arg
        355                 360                 365

Thr Val Cys Asn Leu Phe Ser Gln Leu Gly Ser Arg Gly Val Ser Val
    370                 375                 380

Ile Phe Ala Ser Gly Asp Ser Gly Val Gly Ala Ala Cys Gln Thr Asn
385                 390                 395                 400

Asp Gly Arg Asn Ala Thr Arg Phe Pro Ala Gln Phe Pro Ala Ala Cys
                405                 410                 415

Pro Trp Val Thr Ser Val Gly Ala Thr Thr His Thr Ala Pro Glu Lys
            420                 425                 430

Ala Val Tyr Phe Ser Ser Gly Gly Phe Ser Asp Leu Trp Asp Arg Pro
        435                 440                 445

Lys Trp Gln Glu Asp Ala Val Ser Asp Tyr Leu Asp Thr Leu Gly Asp
    450                 455                 460
```

```
Arg Trp Ser Gly Leu Phe Asn Pro Lys Gly Arg Ala Phe Pro Asp Val
465                 470                 475                 480

Ser Ala Gln Gly Gln Asn Tyr Ala Ile Tyr Asp Lys Gly Ser Leu Thr
                485                 490                 495

Ser Val Asp Gly Thr Ser Cys Ser Ala Pro Ala Phe Ala Gly Val Ile
            500                 505                 510

Ala Leu Leu Asn Asp Ala Arg Leu Lys Ala Asn Lys Pro Pro Met Gly
        515                 520                 525

Phe Leu Asn Pro Trp Leu Tyr Ser Thr Gly Arg Asp Gly Leu Asn Asp
    530                 535                 540

Ile Val His Gly Gly Ser Thr Gly Cys Asp Gly Asn Ala Arg Phe Gly
545                 550                 555                 560

Gly Pro Gly Asn Gly Ser Pro Arg Val Pro Gly Ala Ser Trp Asn Ala
                565                 570                 575

Thr Lys Gly Trp Asp Pro Val Ser Gly Leu Gly Ser Pro Asn Phe Ala
            580                 585                 590

Thr Met Arg Lys Leu Ala Asn Gly Glu
        595                 600


<210>  553
<211>  588
<212>  PRT
<213>  Aspergillus niger

<400>  553

Met Ile Tyr Val Asn Tyr Ile Leu Gly Leu Leu Ser Leu Leu His Thr
1               5                   10                  15

Ala Val Ala Thr Ala Pro Asp Tyr Val Val Val Asp Gln Leu Asn Ser
            20                  25                  30

Ile Pro Asp Gly Trp Thr Lys Gly Ala Ala Pro Pro Pro Phe Thr Pro
        35                  40                  45

Met Lys Phe Trp Leu Ser Met His His Glu Tyr Lys Ala Asp Phe Glu
    50                  55                  60

Gln Lys Val Ile Asp Ile Ser Thr Pro Gly His Arg Asp Tyr Gly Arg
65                  70                  75                  80

His Met Lys Arg Asn Asp Val Met Ala Phe Met Arg Pro Ser Asp Gln
                85                  90                  95
```

```
Val Ser Lys Ile Ile Phe Ser Trp Leu Glu Ser Glu His Val Pro Pro
            100                 105                 110

Asn Ala Ile Glu Asp Arg Gly Asp Trp Val Ala Phe Thr Val Pro Leu
        115                 120                 125

Ala Gln Ala Gln Ser Met Met Lys Thr Asp Phe Tyr Asn Phe His His
    130                 135                 140

Leu Glu Thr Asn Thr Thr Gln Ile Arg Thr Leu Lys Tyr Ser Val Pro
145                 150                 155                 160

Glu Gln Val Asp Ala His Leu Gln Met Ile Gln Pro Thr Thr Arg Phe
                165                 170                 175

Gly Arg Pro Lys Thr Gln Thr Ser Leu Pro Ser Leu Met Pro Val Ser
            180                 185                 190

Val Asn Ile Asp Glu Ile Ser Glu Asp Cys Leu Thr Gly Val Thr Pro
        195                 200                 205

Ile Cys Leu Arg Gln Leu Tyr Gly Leu Pro Ser Thr Lys Ala Ser Pro
    210                 215                 220

Asp Ser Arg Asn Val Leu Gly Ile Ser Gly Tyr Leu Asp Gln Tyr Ala
225                 230                 235                 240

Arg Tyr Ser Asp Leu Asp Glu Phe Leu Ala Val Tyr Ser Pro Asn Ser
                245                 250                 255

Val Asp Ala Asp Phe Ser Val Val Ser Ile Asn Gly Gly Gln Asn Pro
            260                 265                 270

Gln Asn Ser Gln Glu Gly Ser Thr Glu Ala Ser Leu Asp Ile Gln Tyr
        275                 280                 285

Ala Leu Ser Met Ala Phe Asp Ala Asn Ala Thr Phe Tyr Thr Thr Ala
    290                 295                 300

Gly Arg Ala Pro Ser Val Ser Asp Ser Gly Thr Val Ser Thr Asp Gly
305                 310                 315                 320

Ser Thr Asn Glu Pro Tyr Leu Glu Gln Leu Gln Tyr Leu Val Gly Leu
                325                 330                 335

Pro Asp Glu Asp Leu Pro Ala Val Leu Ser Thr Ser Tyr Gly Glu Asp
            340                 345                 350

Glu Gln Ser Leu Pro Glu Glu Tyr Thr Glu Ala Thr Cys Asn Leu Phe
        355                 360                 365
```

```
Ala Gln Leu Gly Ala Arg Gly Val Ser Val Ile Phe Ser Ser Gly Asp
    370                 375                 380

Ser Gly Val Gly Gly Ser Cys Val Ser Asn Asp Gly Ser Gln Arg Thr
385                 390                 395                 400

Arg Phe Gln Pro Ile Phe Pro Ala Ser Cys Pro Phe Val Thr Ser Val
                405                 410                 415

Gly Gly Thr Glu Gly Val Gly Pro Glu Lys Ala Val Asp Phe Ser Ser
            420                 425                 430

Gly Gly Phe Ser Glu Arg Phe Ala Arg Pro Ser Tyr Gln Asn Ala Ser
        435                 440                 445

Val Glu Ala Tyr Leu Ala Arg Leu Gly Asp Lys Trp Asp Gly Leu Tyr
    450                 455                 460

Asn Pro Asp Gly Arg Gly Ile Pro Asp Val Ser Ala Gln Ala Ser Asn
465                 470                 475                 480

Tyr Val Ile Arg Asp His Gly Gln Trp Leu Gln Thr Ala Gly Thr Ser
                485                 490                 495

Ala Ala Ala Pro Val Phe Ala Ala Val Ile Ser Arg Leu Asn Ala Ala
            500                 505                 510

Arg Leu Glu Gln Gly Lys Pro Thr Leu Gly Phe Leu Asn Pro Trp Leu
        515                 520                 525

Tyr Ser Leu Asp Gln Gln Gly Phe Thr Asp Ile Val Asp Gly Gly Ser
    530                 535                 540

Val Gly Cys Asp Gly Ser Asn Gly Gly Ala Leu Val Pro Tyr Ala Ser
545                 550                 555                 560

Trp Asn Ala Thr Lys Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro
                565                 570                 575

Leu Tyr Gln Thr Leu Glu Gln Leu Ala Gln Ser Ala
            580                 585

<210>  554
<211>  600
<212>  PRT
<213>  Aspergillus oryzae

<400>  554

Met Phe Phe Ser Arg Gly Ala Leu Ser Leu Ala Val Leu Ser Leu Leu
1               5                   10                  15
```

```
Ser Ser Ser Ala Ala Gly Glu Ala Phe Glu Lys Leu Ser Ala Val Pro
            20                  25                  30

Lys Gly Trp His Tyr Ser Ser Thr Pro Lys Gly Asn Thr Glu Val Cys
        35                  40                  45

Leu Lys Ile Ala Leu Ala Gln Lys Asp Ala Ala Gly Phe Glu Lys Thr
    50                  55                  60

Val Leu Glu Met Ser Asp Pro Asp His Pro Ser Tyr Gly Gln His Phe
65                  70                  75                  80

Thr Thr His Asp Glu Met Lys Arg Met Leu Leu Pro Arg Asp Asp Thr
                85                  90                  95

Val Asp Ala Val Arg Gln Trp Leu Glu Asn Gly Gly Val Thr Asp Phe
            100                 105                 110

Thr Gln Asp Ala Asp Trp Ile Asn Phe Cys Thr Thr Val Asp Thr Ala
        115                 120                 125

Asn Lys Leu Leu Asn Ala Gln Phe Lys Trp Tyr Val Ser Asp Val Lys
    130                 135                 140

His Ile Arg Arg Leu Arg Thr Leu Gln Tyr Asp Val Pro Glu Ser Val
145                 150                 155                 160

Thr Pro His Ile Asn Thr Ile Gln Pro Thr Thr Arg Phe Gly Lys Ile
                165                 170                 175

Ser Pro Lys Lys Ala Val Thr His Ser Lys Pro Ser Gln Leu Asp Val
            180                 185                 190

Thr Ala Leu Ala Ala Ala Val Val Ala Lys Asn Ile Ser His Cys Asp
        195                 200                 205

Ser Ile Ile Thr Pro Thr Cys Leu Lys Glu Leu Tyr Asn Ile Gly Asp
    210                 215                 220

Tyr Gln Ala Asp Ala Asn Ser Gly Ser Lys Ile Ala Phe Ala Ser Tyr
225                 230                 235                 240

Leu Glu Glu Tyr Ala Arg Tyr Ala Asp Leu Glu Asn Phe Glu Asn Tyr
                245                 250                 255

Leu Ala Pro Trp Ala Lys Gly Gln Asn Phe Ser Val Thr Thr Phe Asn
            260                 265                 270

Gly Gly Leu Asn Asp Gln Asn Ser Ser Ser Asp Ser Gly Glu Ala Asn
        275                 280                 285
```

```
Leu Asp Leu Gln Tyr Ile Leu Gly Val Ser Ala Pro Leu Pro Val Thr
    290                 295                 300

Glu Phe Ser Thr Gly Gly Arg Gly Pro Leu Val Pro Asp Leu Thr Gln
305                 310                 315                 320

Pro Asp Pro Asn Ser Asn Ser Asn Glu Pro Tyr Leu Glu Phe Phe Gln
                325                 330                 335

Asn Val Leu Lys Leu Asp Gln Lys Asp Leu Pro Gln Val Ile Ser Thr
            340                 345                 350

Ser Tyr Gly Glu Asn Glu Gln Glu Ile Pro Glu Lys Tyr Ala Arg Thr
        355                 360                 365

Val Cys Asn Leu Ile Ala Gln Leu Gly Ser Arg Gly Val Ser Val Leu
    370                 375                 380

Phe Ser Ser Gly Asp Ser Gly Val Gly Glu Gly Cys Met Thr Asn Asp
385                 390                 395                 400

Gly Thr Asn Arg Thr His Phe Pro Pro Gln Phe Pro Ala Ala Cys Pro
                405                 410                 415

Trp Val Thr Ser Val Gly Ala Thr Phe Lys Thr Thr Pro Glu Arg Gly
            420                 425                 430

Thr Tyr Phe Ser Ser Gly Gly Phe Ser Asp Tyr Trp Pro Arg Pro Glu
        435                 440                 445

Trp Gln Asp Glu Ala Val Ser Ser Tyr Leu Glu Thr Ile Gly Asp Thr
    450                 455                 460

Phe Lys Gly Leu Tyr Asn Ser Ser Gly Arg Ala Phe Pro Asp Val Ala
465                 470                 475                 480

Ala Gln Gly Met Asn Phe Ala Val Tyr Asp Lys Gly Thr Leu Gly Glu
                485                 490                 495

Phe Asp Gly Thr Ser Ala Ser Ala Pro Ala Phe Ser Ala Val Ile Ala
            500                 505                 510

Leu Leu Asn Asp Ala Arg Leu Arg Ala Gly Lys Pro Thr Leu Gly Phe
        515                 520                 525

Leu Asn Pro Trp Leu Tyr Lys Thr Gly Arg Gln Gly Leu Gln Asp Ile
    530                 535                 540

Thr Leu Gly Ala Ser Ile Gly Cys Thr Gly Arg Ala Arg Phe Gly Gly
545                 550                 555                 560
```

```
Ala Pro Asp Gly Gly Pro Val Val Pro Tyr Ala Ser Trp Asn Ala Thr
                565                 570                 575


Gln Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro Asp Phe Ala Glu
            580                 585                 590


Leu Lys Lys Leu Ala Leu Gly Asn
        595                 600


<210>  555
<211>  587
<212>  PRT
<213>  Neurospora crassa

<400>  555

Met Leu Trp Ser Val Leu Leu Leu Ala Ala Gly Ala Ser Ala His Val
1               5                   10                  15


Lys Ser Ser Leu Pro Ser Val Pro Ser Gly Trp Lys Lys Val Arg Ala
            20                  25                  30


Ala Ser Ala Asp Glu Ser Val Ser Leu Lys Ile Ala Leu Pro Ala His
        35                  40                  45


Gln Pro Asp Ala Leu Glu Thr Ala Ile Leu Arg Val Ser Asp Pro Asn
    50                  55                  60


His His Glu Tyr Gly Met His Leu Ser Ser Glu Glu Val Arg Ser Leu
65                  70                  75                  80


Val Ala Pro Ala Asp Glu Thr Thr Asp Ala Val Thr Ser Trp Leu Asn
                85                  90                  95


Arg Asn Gly Ile Lys Gly Lys Val Asp Asn Asp Trp Val Ser Phe Thr
            100                 105                 110


Thr Ser Val Ala Lys Ala Asn Asn Leu Leu Asn Thr Thr Phe Asp Trp
        115                 120                 125


Tyr Gln Gln Asp Gly Asp Lys Thr Gly Pro Lys Leu Arg Thr Leu Gln
    130                 135                 140


Tyr Ser Val Pro Asp Glu Leu Asp Ala His Val Asp Met Ile Gln Pro
145                 150                 155                 160


Thr Thr Arg Phe Gly Lys Leu Ala Ala Lys Ala Ser Thr Ile Phe Glu
                165                 170                 175


Ile Phe Asp Glu Pro Glu Pro Lys Asn Ile Ala Asn Val Lys Val Gly
            180                 185                 190


Gly Asp His Pro Thr Cys Thr Gly Cys Ile Tyr Pro Asp Glu Ile Arg
```

195 200 205

Ser Leu Tyr Asn Ile Lys Tyr Lys Pro Ser Ala Ser Asp Lys Asn Thr
210 215 220

Ile Ala Phe Ala Ser Tyr Leu Glu Gln Tyr Ser Asn Tyr Asp Asp Phe
225 230 235 240

Thr Ser Phe Ala Lys Ala Phe Ile Pro Asp Ala Ala Asp Arg Asn Tyr
245 250 255

Thr Val Lys Leu Val Lys Gly Gly Leu His Asp Gln Ser Pro Asp Lys
260 265 270

Ile Gly Val Glu Ala Asn Leu Asp Leu Gln Tyr Ile Leu Ala Ile Ser
275 280 285

Asn Pro Ile Pro Ile Arg Glu Tyr Ser Ile Gly Gly Arg Gly Pro Leu
290 295 300

Val Pro Thr Ala Asn Gln Pro Gly Pro Glu Ile Ser Asn Glu Pro Tyr
305 310 315 320

Leu Asp Phe Phe Gln Tyr Leu Leu Ser Leu Lys Asn Ser Glu Leu Pro
325 330 335

Ala Thr Leu Ser Thr Ser Tyr Gly Glu Glu Glu Gln Ser Val Pro Arg
340 345 350

Glu Tyr Ala Leu Lys Val Cys Ser Met Ile Gly Gln Leu Gly Ala Arg
355 360 365

Gly Val Ser Val Ile Phe Ser Ser Gly Asp Ser Gly Pro Gly Asp Ala
370 375 380

Cys Ile Arg Asn Asp Gly Thr Asn Ser Thr Tyr Phe Glu Pro Thr Phe
385 390 395 400

Pro Gly Ala Cys Pro Trp Val Thr Ser Val Gly Gly Thr Tyr Gln Thr
405 410 415

Gly Pro Glu Lys Ala Val Asp Phe Ser Ser Gly Gly Phe Ser Met Tyr
420 425 430

His Lys Arg Pro Val Tyr Gln Glu Arg Val Val Lys Lys Tyr Leu Asp
435 440 445

Lys Ile Gly Asp Thr Tyr Ser Asp Phe Phe Asp Glu Gln Gly Arg Gly
450 455 460

Phe Pro Asp Val Ser Ala Gln Ala Ser Arg Tyr Ala Val Tyr Val Asp

465 470 475 480

Gly Arg Leu Val Gly Val Ser Gly Thr Ser Ala Ser Ala Pro Met Phe
485 490 495

Ala Gly Leu Val Ala Leu Leu Asn Ala Ala Arg Lys Ser His Gly Leu
500 505 510

Pro Ser Leu Gly Phe Ile Asn Pro Leu Leu Tyr Ala Ser Lys Asp Ala
515 520 525

Phe Thr Asp Ile Val Asn Gly Ala Gly Thr Gly Cys Arg Gly Arg Pro
530 535 540

Glu Phe Ala Gly Asp Val Gly Gly Thr Ala Lys Trp Asn Ala Thr Glu
545 550 555 560

Gly Trp Asp Pro Val Thr Gly Leu Gly Thr Pro Lys Phe Asp Lys Leu
565 570 575

Leu Ala Leu Ala Ala Pro Gly Val Lys Asn Ala
580 585

<210> 556
<211> 644
<212> PRT
<213> Aspergillus fumigatus

<400> 556

Met Arg Leu Ser His Val Leu Leu Gly Thr Ala Ala Ala Ala Gly Val
1 5 10 15

Leu Ala Ser Pro Thr Pro Asn Asp Tyr Val Val His Glu Arg Arg Ala
20 25 30

Val Leu Pro Arg Ser Trp Thr Glu Glu Lys Arg Leu Asp Lys Ala Ser
35 40 45

Ile Leu Pro Met Arg Ile Gly Leu Thr Gln Ser Asn Leu Asp Arg Gly
50 55 60

His Asp Leu Leu Met Glu Ile Ser Asp Pro Arg Ser Ser Arg Tyr Gly
65 70 75 80

Gln His Leu Ser Val Glu Glu Val His Ser Leu Phe Ala Pro Ser Gln
85 90 95

Glu Thr Val Asp Arg Val Arg Ala Trp Leu Glu Ser Glu Gly Ile Ala
100 105 110

Gly Asp Arg Ile Ser Gln Ser Ser Asn Glu Gln Phe Leu Gln Phe Asp
115 120 125

```
Ala Ser Ala Ala Glu Val Glu Arg Leu Leu Gly Thr Glu Tyr Tyr Leu
    130                 135                 140

Tyr Thr His Gln Gly Ser Gly Lys Ser His Ile Ala Cys Arg Glu Tyr
145                 150                 155                 160

His Val Pro His Ser Leu Gln Arg His Ile Asp Tyr Ile Thr Pro Gly
                165                 170                 175

Ile Lys Leu Leu Glu Val Glu Gly Val Lys Lys Ala Arg Ser Ile Glu
            180                 185                 190

Lys Arg Ser Phe Arg Ser Pro Leu Pro Pro Ile Leu Glu Arg Leu Thr
        195                 200                 205

Leu Pro Leu Ser Glu Leu Leu Gly Asn Thr Leu Leu Cys Asp Val Ala
    210                 215                 220

Ile Thr Pro Leu Cys Ile Ser Ala Leu Tyr Asn Ile Thr Arg Gly Ser
225                 230                 235                 240

Lys Ala Thr Lys Gly Asn Glu Leu Gly Ile Phe Glu Asp Leu Gly Asp
                245                 250                 255

Val Tyr Ser Gln Glu Asp Leu Asn Leu Phe Phe Ser Thr Phe Ala Gln
            260                 265                 270

Gln Ile Pro Gln Gly Thr His Pro Ile Leu Lys Ala Val Asp Gly Ala
        275                 280                 285

Gln Ala Pro Thr Ser Val Thr Asn Ala Gly Pro Glu Ser Asp Leu Asp
    290                 295                 300

Phe Gln Ile Ser Tyr Pro Ile Ile Trp Pro Gln Asn Ser Ile Leu Phe
305                 310                 315                 320

Gln Thr Asp Asp Pro Asn Tyr Thr Ala Asn Tyr Asn Phe Ser Gly Phe
                325                 330                 335

Leu Asn Thr Phe Leu Asp Ala Ile Asp Gly Ser Tyr Cys Ser Glu Ile
            340                 345                 350

Ser Pro Leu Asp Pro Pro Tyr Pro Asn Pro Ala Asp Gly Gly Tyr Lys
        355                 360                 365

Gly Gln Leu Gln Cys Gly Val Tyr Gln Pro Pro Lys Val Leu Ser Ile
    370                 375                 380

Ser Tyr Gly Gly Ala Glu Ala Asp Leu Pro Ile Ala Tyr Gln Arg Arg
385                 390                 395                 400
```

```
Gln Cys Ala Glu Trp Met Lys Leu Gly Leu Gln Gly Val Ser Val Val
                405                 410                 415

Val Ala Ser Gly Asp Ser Gly Val Glu Gly Arg Asn Gly Asp Pro Thr
            420                 425                 430

Pro Thr Glu Cys Leu Gly Thr Glu Gly Lys Val Phe Ala Pro Asp Phe
        435                 440                 445

Pro Ala Thr Cys Pro Tyr Leu Thr Thr Val Gly Gly Thr Tyr Leu Pro
    450                 455                 460

Leu Gly Ala Asp Pro Arg Lys Asp Glu Glu Val Ala Val Thr Ser Phe
465                 470                 475                 480

Pro Ser Gly Gly Gly Phe Ser Asn Ile Tyr Glu Arg Ala Asp Tyr Gln
                485                 490                 495

Gln Gln Ala Val Glu Asp Tyr Phe Ser Arg Ala Asp Pro Gly Tyr Pro
            500                 505                 510

Phe Tyr Glu Ser Val Asp Asn Ser Ser Phe Ala Glu Asn Gly Gly Ile
        515                 520                 525

Tyr Asn Arg Ile Gly Arg Ala Tyr Pro Asp Val Ala Ala Ile Ala Asp
    530                 535                 540

Asn Val Val Ile Phe Asn Lys Gly Met Pro Thr Leu Ile Gly Gly Thr
545                 550                 555                 560

Ser Ala Ala Ala Pro Val Phe Ala Ala Ile Leu Thr Arg Ile Asn Glu
                565                 570                 575

Glu Arg Leu Ala Val Gly Lys Ser Thr Val Gly Phe Val Asn Pro Val
            580                 585                 590

Leu Tyr Ala His Pro Glu Val Phe Asn Asp Ile Thr Gln Gly Ser Asn
        595                 600                 605

Pro Gly Cys Gly Met Gln Gly Phe Ser Ala Ala Thr Gly Trp Asp Pro
    610                 615                 620

Val Thr Gly Leu Gly Thr Pro Asn Tyr Pro Ala Leu Leu Asp Leu Phe
625                 630                 635                 640

Met Ser Leu Pro
```

<210> 557
<211> 645

<212> PRT
<213> Aspergillus oryzae

<400> 557

```
Met Lys Thr Ser Phe Leu Leu Leu His Thr Leu Val Ala Gly Val Leu
1               5                  10                  15

Ala Ile Pro Thr Arg Thr Asp Tyr Val Leu His Glu Arg Arg Asp Ala
            20                  25                  30

Val Pro Ala His Trp Thr Gly Glu Lys Arg Leu Asp Gly Gln Thr Val
        35                  40                  45

Leu Pro Met Arg Ile Gly Leu Thr Gln Ser Asn Leu Asp Arg Gly His
    50                  55                  60

Asp Leu Leu Met Glu Val Ser Thr Pro Gly Ser Pro Arg Tyr Gly Asp
65                  70                  75                  80

His Met Thr Leu Asp Glu Val His Asn Leu Phe Ala Pro Ser Gln Asp
                85                  90                  95

Ser Val Asp Ser Val Arg Ser Trp Leu Glu Ser Ala Gly Ile Ser Pro
            100                 105                 110

Asp Arg Ile Ser Gln Ser Thr Asn Lys Gln Trp Leu Gln Phe Asp Ala
        115                 120                 125

Gly Val Asp Glu Val Glu Gln Leu Leu Lys Thr Glu Tyr Tyr Arg Tyr
    130                 135                 140

Ser His Ala Gly Thr Gly Arg Ser His Val Ala Cys Arg Glu Tyr His
145                 150                 155                 160

Val Pro Glu Ser Val Gln Ser His Ile Asp Tyr Ile Thr Pro Gly Ile
                165                 170                 175

Lys His Leu Glu Ile Arg Glu Glu Lys Pro Val Glu Lys Arg Ser Leu
            180                 185                 190

Asp Lys Arg Ser Phe Gly Ile Leu Pro Pro Ile Leu Arg Pro Leu Thr
        195                 200                 205

Leu Pro Leu Glu Glu Leu Leu Gly Gln Leu Leu Leu Leu Cys Asp Val
    210                 215                 220

Ala Val Thr Pro Ala Cys Ile Gln Ala Met Tyr Asn Val Thr Asp Gly
225                 230                 235                 240

Asp Lys Ala Thr Lys Gly Asn Glu Leu Gly Ile Phe Glu Asp Leu Gly
                245                 250                 255
```

```
Asp Val Tyr Ser Gln Asp Asp Leu Asp Leu Phe Phe Ser Thr Val Ala
            260                 265                 270

His Lys Ile Pro Thr Gly Thr His Pro Ile Leu Asn Ala Ile Asp Gly
        275                 280                 285

Ala Gln Ala Pro Ala Asp Thr Thr Asn Ala Gly Thr Glu Ser Asp Leu
    290                 295                 300

Asp Phe Glu Ile Ser Tyr Pro Leu Ile Trp Pro Gln Asn Ser Ile Leu
305                 310                 315                 320

Phe Gln Thr Asp Asp Pro Ile Tyr Gln Asn Asn Tyr Thr Tyr Asn Gly
                325                 330                 335

Phe Leu Asn Asn Phe Leu Asp Ala Ile Asp Gly Ser Tyr Cys Ser Glu
            340                 345                 350

Ala Ser Pro Leu Asp Pro Pro Tyr Pro Asn Pro Ala Asp Gly Gly Tyr
        355                 360                 365

Lys Ser Pro Arg Gln Cys Gly Val Tyr Lys Pro Thr Asn Val Ile Ser
    370                 375                 380

Ile Ser Tyr Gly Gly Ala Glu Ala Asp Leu Pro Ile Ala Tyr Gln Arg
385                 390                 395                 400

Arg Gln Cys Gln Glu Phe Met Lys Leu Gly Leu Gln Gly Val Ser Ile
                405                 410                 415

Val Val Ala Ser Gly Asp Ser Gly Val Gln Gly Arg Gly Gly Ser Pro
            420                 425                 430

Thr Pro Ser Gly Cys Leu Gly Lys Asp Asn Lys Val Phe Ala Pro Asp
        435                 440                 445

Phe Pro Ala Thr Cys Pro Tyr Leu Thr Thr Ala Gly Gly Thr Tyr Leu
    450                 455                 460

Pro Pro Gly Ala Asp Val His Ala His Glu Glu Gln Ala Thr Thr Ser
465                 470                 475                 480

Phe Pro Ser Gly Gly Gly Phe Ser Asn Ile Tyr Gln Arg Pro Asp Tyr
                485                 490                 495

Gln Asn Ala Ala Val Glu Glu Tyr Phe Asn Thr Ala Gln Leu Ser Tyr
            500                 505                 510

Pro Tyr Tyr Glu Ser Val Asp Asn Ser Ser Phe Ala Ala Asn Gly Gly
        515                 520                 525
```

```
Ile Tyr Asn Arg Ile Gly Arg Ala Tyr Pro Asp Val Ala Ala Ile Ala
    530                 535                 540

Asp Asn Val Leu Val Phe Asn Lys Gly Leu Pro Thr Leu Val Gly Gly
545                 550                 555                 560

Thr Ser Ala Ala Ala Pro Val Phe Ala Ala Leu Leu Thr Arg Ile Asn
                565                 570                 575

Glu Glu Arg Leu Ala Ala Gly Lys Lys Thr Val Gly Phe Val Asn Pro
            580                 585                 590

Val Leu Tyr Ala Asn Pro Gly Val Phe Phe Asp Val Thr Lys Gly Ser
        595                 600                 605

Asn Gln Gly Cys Gly Thr Asp Gly Phe Pro Ala Val Lys Gly Trp Asp
    610                 615                 620

Pro Val Thr Gly Leu Gly Thr Pro Asn Tyr Pro Lys Leu Leu Glu Leu
625                 630                 635                 640

Phe Met Gly Leu Asp
                645
```

<210> 558
<211> 642
<212> PRT
<213> Penicillium chrysogenum

<400> 558

```
Met Leu Cys Val Leu Ala Ala Ser Ala Met Ala Val Pro Thr Ala His
1               5                   10                  15

Asp Tyr Gln Leu His Glu Arg Arg Asp Phe Ile Pro Lys Ser Trp Val
            20                  25                  30

Glu Gly Lys Glu Leu Asp Gly Asn Val Ser Leu Pro Val Arg Ile Gly
        35                  40                  45

Leu Thr Gln Ser Asn Leu Asp Tyr Gly His Glu Leu Leu Met Asp Leu
    50                  55                  60

Ser Asn Pro His Ser Ser Arg Tyr Gly Gln Tyr Leu Ser Val Asn Glu
65                  70                  75                  80

Val His Asp Leu Phe Ala Pro Thr Glu Lys Ser Val Asn Asp Val Arg
                85                  90                  95

Tyr Trp Leu Glu Ser Ala Gly Ile Ala Lys Glu Arg Ile Thr Gln Ser
            100                 105                 110
```

```
Ala Asn Lys Gln Trp Ile Gln Phe Asp Ala Asp Ala Glu Glu Leu Glu
        115                 120                 125

His Leu Leu His Thr Lys Tyr Tyr Leu Tyr Ser His Ala Glu Thr Gly
    130                 135                 140

Arg Ser His Val Ala Cys Arg Glu Tyr Gly Phe His Leu Asp Trp Ile
145                 150                 155                 160

Tyr Ser Leu Ala Asp His Arg Pro Gln Ile Ser Cys Pro Glu Leu Arg
                165                 170                 175

Ile Ser Leu Arg Glu Val Thr Ser Val Arg Arg Ser Thr Lys Gln Lys
            180                 185                 190

Arg Phe Met Asp Gly Val Pro Pro Ile Leu Glu Pro Ile Leu Leu Pro
        195                 200                 205

Ile Glu Glu Leu Leu Ser Gln Ser Pro Ser Leu Cys Ser Gln Ala Ile
    210                 215                 220

Thr Pro Gln Cys Ile Gln Gln Met Tyr Asn Ile Ser Glu Gly His Ser
225                 230                 235                 240

Ala Thr Glu Gly Asn Glu Leu Gly Ile Phe Glu Gly Ile Gly Asp Val
                245                 250                 255

Tyr Ala Gln Glu Asp Leu Asp Leu Phe Phe Ser Lys Leu Tyr Ser Lys
            260                 265                 270

Ile Pro Gln Gly Thr His Pro Ile Leu Lys Ser Val Asp Gly Gly Glu
        275                 280                 285

Ala Pro Thr Asp Thr Ser Arg Ala Gly Pro Glu Ser Asp Leu Asp Phe
    290                 295                 300

Gln Ile Ser Tyr Pro Ile Ile Trp Pro Gln Asn Ser Ile Leu Phe Gln
305                 310                 315                 320

Ser Asp Asp Met His Tyr Glu Asn His Tyr Thr Phe Arg Gly Phe Leu
                325                 330                 335

Asn Thr Phe Leu Asp Ala Ile Asp Gly Ser Tyr Cys Ser Thr Ile Ser
            340                 345                 350

Pro Leu Asp Pro Pro Tyr Pro Asp Pro Ala Asp Gly Gly Tyr Lys Gly
        355                 360                 365

Ser Leu Gln Cys Gly Val Tyr Asp Pro Pro Lys Val Ile Ser Ile Ser
    370                 375                 380
```

```
Tyr Gly Ser Ala Glu Ala Asp Leu Pro Ile Ser Tyr Gln Arg Arg Gln
385                 390                 395                 400

Cys Ala Glu Phe Met Lys Leu Gly Thr Met Gly Val Ser Val Leu Val
                405                 410                 415

Ala Ser Gly Asp Ser Gly Val Ser Gly Arg Gly Gly Asp Pro Thr Pro
            420                 425                 430

Ser Asn Cys Leu Gly Thr Asn Gly Arg Val Phe Ala Pro Asp Phe Pro
        435                 440                 445

Ala Thr Cys Pro Tyr Leu Thr Ala Val Gly Gly Thr Glu Ile Pro Thr
    450                 455                 460

Gly Ser Ser Pro Glu Asp His Gln Glu Gln Ala Val Thr Arg Phe Pro
465                 470                 475                 480

Ser Gly Gly Gly Phe Ser Asn Ile Tyr Lys Ala Pro Glu Tyr Gln Ala
                485                 490                 495

Gln Ala Val Ala Asp Tyr Phe Asp Lys Ala Gln Pro Ser Tyr Pro Tyr
            500                 505                 510

Tyr Glu Ser Val Asp Asn Ser Ser Phe Gly Glu Asn Ser Gly Ile Tyr
        515                 520                 525

Asn Arg Ile Gly Arg Ala Tyr Pro Asp Val Ala Ala Val Gly Asp Lys
    530                 535                 540

Val Val Ile Tyr Asn Arg Gly Met Ala Val Ser Ile Gly Gly Thr Ser
545                 550                 555                 560

Ala Ser Ala Pro Val Phe Ala Ala Ile Leu Thr Arg Ile Asn Glu Glu
                565                 570                 575

Arg Leu Ala Ala Gly Lys Ser Thr Val Gly Phe Val Asn Pro Val Leu
            580                 585                 590

Tyr Ala His Pro Glu Ala Phe Phe Asp Val Val Thr Gly Ser Asn Pro
        595                 600                 605

Gly Cys Asn Thr Asp Gly Phe Ser Ala Ala Lys Gly Trp Asp Pro Val
    610                 615                 620

Thr Gly Leu Gly Thr Pro Asn Tyr Pro Glu Leu Leu Arg Val Phe Met
625                 630                 635                 640

Gly Glu
```

<210> 559
<211> 611
<212> PRT
<213> Aspergillus nidulans

<400> 559

```
Met Trp Leu Ser Leu Leu Tyr Leu Val Ser Ser Ile Thr Ala Val Leu
1               5                  10                  15

Ala Phe Ser Pro Pro Ala Lys His Pro Leu His Glu Arg Arg Asp Ala
            20                  25                  30

Leu Pro Asp Tyr Trp Val Glu Asp Ala Arg Leu Asp Gly Gln Thr Val
        35                  40                  45

Leu Pro Val Arg Ile Gly Met Thr Gln Ser Asn Leu Asp His Gly His
    50                  55                  60

Asp Leu Leu Met Leu Ile Ser Asp Pro Ser Ser Pro Glu Tyr Gly Lys
65                  70                  75                  80

Tyr Leu Ser Ala Lys Glu Val His Asp Leu Phe Ala Pro Ala Glu Glu
                85                  90                  95

Thr Val Glu Arg Val Arg Ala Trp Leu Glu Ser Glu Gly Ile Ser Asp
            100                 105                 110

Thr Arg Ile Ser Gln Ser Ala Asn Lys Gln Trp Leu Arg Phe Asp Ala
        115                 120                 125

Thr Ala Gln Glu Leu Glu Arg Leu Leu Gln Thr Glu Tyr Tyr Leu Tyr
    130                 135                 140

Ser His Ala Glu Thr Arg Arg Ser His Ile Ala Cys Arg Glu Tyr His
145                 150                 155                 160

Val Pro Glu Ala Leu Gln Lys His Ile Asp Tyr Ile Thr Pro Gly Val
                165                 170                 175

Lys Phe Leu Glu Ile Ala Gly Pro Leu Pro Ile Leu Pro Thr Glu Arg
            180                 185                 190

Ser Leu Thr Arg Arg Asp Thr Ala Asp Ala Ser Ser Pro Ile Ile Asp
        195                 200                 205

Gly Thr Asn Leu Thr Leu Ser Gln Val Thr Asn Asp Ala Leu Gly Phe
    210                 215                 220

Cys Asp Gln Ile Ile Thr Pro Ala Cys Ile Arg Gly Met Pro Cys Ile
225                 230                 235                 240

Cys Gln Pro Ile Val His Ser Ile Asn Gly Gly Thr Ala Pro Thr Thr
```

```
                245                 250                 255

Leu Asp Asn Ala Gly Pro Glu Ser Thr Leu Asp Leu Ala Met Ser Tyr
            260                 265                 270

Pro Ile Ile Trp Pro Gln Asn Pro Ile Ile Phe Gln Thr Asp Asp Pro
        275                 280                 285

Ile Trp Ala Asp Ile Asn Asn Pro Lys Phe Pro Gly Ile Phe Asn Asn
    290                 295                 300

Phe Leu Asp Ala Ile Asp Gly Ser Tyr Cys Asp Pro Ser Glu Glu Glu
305                 310                 315                 320

Leu Asp Pro Pro Tyr Pro Asn Pro Ala Pro Gly Gly Tyr Lys Gly Gln
                325                 330                 335

Lys Gln Cys Gly Val Tyr Lys Pro Thr Asn Val Ile Ser Ile Ser Tyr
            340                 345                 350

Gly Phe Ala Glu Phe Glu Leu Pro Ile Arg Tyr Asn Arg Arg Gln Cys
        355                 360                 365

Tyr Glu Trp Met Lys Leu Gly Leu Gln Gly Val Ser Val Val Ala Ala
    370                 375                 380

Ser Gly Asn Asn Gly Val Ala Thr Gly Gly Cys Leu Gly Lys Asp Arg
385                 390                 395                 400

Ser Val Phe Thr Pro Gly Tyr Leu Ile Cys Pro Tyr Ile Thr Thr Val
                405                 410                 415

Gly Gly Thr Tyr Leu Leu Pro Gly Gly Asp Pro Tyr Asn Pro Leu Glu
            420                 425                 430

Val Ala Val Asp Pro Ser Thr Thr Pro Gly Asn Trp Ser Ser Gly Gly
        435                 440                 445

Gly Phe Ser Asn Ile Tyr Glu Arg Pro Met Tyr Gln Ala Ser Ala Val
    450                 455                 460

Glu Glu Tyr Phe Ser Arg Ala Asn Leu Asn Tyr Pro Tyr Tyr Glu Ser
465                 470                 475                 480

Ile Asn Asn Asp Ser Phe Ala Ala Asn Asp Gly Ile Tyr Asn Arg Ile
                485                 490                 495

Gly Arg Ala Tyr Pro Asp Ile Ser Ala Val Ala Val Asn Asn Phe Val
            500                 505                 510

Phe Trp Arg Gly Gly Pro Ile Leu Gly Gly Gly Thr Ser Ala Ser Ala
```

515 520 525

Pro Ile Phe Ala Ala Ile Leu Thr Arg Ile Asn Glu Glu Arg Leu Ala
530 535 540

Ala Gly Met Pro Thr Val Gly Phe Val Asn Pro Met Leu Tyr Ala His
545 550 555 560

Pro Glu Ala Phe Arg Asp Ile Thr Glu Gly Asn Asn Pro Gly Cys Ser
565 570 575

Thr Asp Gly Phe Thr Ala Leu Glu Gly Trp Asp Pro Val Thr Gly Leu
580 585 590

Gly Thr Pro Ile Tyr Pro Lys Leu Leu Glu Val Phe Met Ser Val Lys
595 600 605

Leu Gly Leu
610

<210> 560
<211> 659
<212> PRT
<213> Penicillium chrysogenum

<400> 560

Met Ala Gly Tyr His Tyr Ser Phe Ile Val Ser Arg Asp Ala Ala Pro
1 5 10 15

Val Lys His Val Leu His Glu Lys Arg Ser Glu His Val Asp Trp Val
20 25 30

Lys Gly Glu Arg Ile Lys Arg Asp Ser Val Leu Pro Val Arg Ile Gly
35 40 45

Leu Ala Gln Asn Asn Leu Glu Arg Gly Asp Glu Tyr Leu Met Ala Val
50 55 60

Ser Asp Pro Asp Ser Ala Lys Tyr Gly Gln Tyr Trp Ser Ala Glu Glu
65 70 75 80

Val His Glu Phe Phe Ala Pro Ser Lys Asp Ser Val Asp Ser Val Arg
85 90 95

Arg Trp Leu Gln Ser Ser Gly Ile His Glu Ser Arg Ile Val His Ser
100 105 110

Asp Asn Lys Gly Trp Leu Ala Phe Asp Ala Tyr Ala His Glu Val Glu
115 120 125

Asp Leu Phe Lys Ala Glu Phe Tyr Glu His Glu His Ala Ser Thr Ser
130 135 140

```
Ser Met Lys Ile Gly Cys Glu Glu Tyr His Val Pro Glu Asn Ile Gln
145                 150                 155                 160

Ala His Ile Asp Tyr Ile Thr Pro Gly Val Lys Leu Ser Pro Ile Val
                165                 170                 175

Lys Lys Asn Thr Lys Ala Lys Arg Met Ser His Leu Ala His Ser Lys
            180                 185                 190

Gly Thr Val Glu Ala Asp Asn Ser Ile Lys Thr Thr Val Ile Ser Glu
        195                 200                 205

Lys Ala Gln Ser Leu Pro Ala Asp Leu Gln Arg Cys Gly Thr Asp Met
    210                 215                 220

Thr Pro Ala Cys Ile Met Ala Leu Tyr Asp Ile Pro Asp Ala Thr Lys
225                 230                 235                 240

Ala Ala Lys Gly Asn Ser Leu Gly Leu Tyr Glu Gln Gly Asp Tyr Phe
                245                 250                 255

Ala Lys Ser Asp Leu Asp Leu Tyr Tyr Lys His Phe Ala Pro Trp Ile
            260                 265                 270

Pro Arg Gly Thr Tyr Pro Ile Pro Ala Leu Ile Asp Gly Ala Ser Phe
        275                 280                 285

Ser Val Pro Asp Tyr Ser Pro Leu Asn Ala Gly Glu Ala Asp Ile Asp
    290                 295                 300

Ile Asp Met Ala Tyr Ser Leu Ile Tyr Pro Gln Ser Ile Thr Leu Tyr
305                 310                 315                 320

Gln Val Asp Asp Gln Thr Tyr Glu Pro Glu Glu Glu Lys Thr Thr Asn
                325                 330                 335

Leu Phe Asn Thr Phe Leu Asp Ala Leu Asp Gly Ser Tyr Cys Thr Tyr
            340                 345                 350

Ser Ala Phe Gly Glu Thr Gly Asn Asn Pro Asp Ile Asp Pro Val Tyr
        355                 360                 365

Pro Asn Pro Arg Pro Gly Gly Tyr Lys Gly Glu Leu Gln Cys Gly Val
    370                 375                 380

Tyr Lys Pro Thr Thr Val Ile Ser Ala Ser Tyr Gly Gln Ala Glu Ala
385                 390                 395                 400

Asp Leu Pro Ile Ala Tyr Thr Lys Arg Gln Cys Asn Glu Phe Met Lys
                405                 410                 415
```

```
Leu Gly Leu Gln Gly His Ser Ile Leu Phe Ser Ser Gly Asp Tyr Gly
            420                 425                 430

Val Ala Ser Phe His Asn Asp Gly Ala Val Asn Gly Cys Leu Gly Pro
        435                 440                 445

Glu Gly Lys Ile Phe Asn Pro Gln Tyr Pro Ser Asn Cys Pro Tyr Val
    450                 455                 460

Thr Ser Val Gly Gly Thr Met Leu Tyr Ala Asp Gln Thr Val Lys Asp
465                 470                 475                 480

Ala Glu Ser Val Met Ser Ala Asn Leu Gly Gly Asp Ser Ala Asn Phe
                485                 490                 495

Thr Ser Ser Gly Gly Phe Ser Asn Tyr Phe Pro Gln Pro Ser Tyr Gln
            500                 505                 510

Lys Lys Ala Val Glu Lys Tyr Phe Gln Lys Ala Lys Leu Thr Tyr Pro
        515                 520                 525

Tyr Tyr Ser Glu Met Glu Val Asn Ile Asn Lys Thr Lys Gly Leu Tyr
    530                 535                 540

Asn Arg Ile Gly Arg Gly Tyr Pro Asp Val Ser Ala Asn Gly Ala Val
545                 550                 555                 560

Phe Pro Ala Tyr Asn Gly Gly Lys Leu Thr His Tyr Tyr Gly Ala Ser
                565                 570                 575

Leu Ala Ser Pro Leu Phe Ala Ser Val Leu Asn Leu Ile Asn Glu Glu
            580                 585                 590

Arg Leu Asp Gln Gly Lys Gly Pro Val Gly Phe Val Asn Pro Val Leu
        595                 600                 605

Tyr Ala His Pro Glu Val Leu Asn Asp Ile Thr Asn Gly Thr Asn Leu
    610                 615                 620

Gly Cys Gly Ser Asp Gly Phe Ser Ala Ile Pro Gly Trp Asp Pro Ala
625                 630                 635                 640

Thr Gly Leu Gly Thr Pro Asn Tyr Pro Lys Leu Lys Glu Leu Phe Leu
                645                 650                 655

Ser Leu Pro


<210>  561
<211>  720
```

<212> PRT
<213> Myceliophthora thermophila

<400> 561

```
Met Arg Ile Arg His Ala Leu Val Gly Ile Ala Ser Leu Cys Cys Leu
1               5                  10                  15

Leu Gly Thr Ala Ser Gly Ala Arg Ile Ser Ser Arg Asp Met Leu Ser
            20                  25                  30

Arg Arg Val Val Pro Pro Ser His Thr Leu His Glu Arg His Glu Ala
        35                  40                  45

Gly Asn Val Glu Gly Trp Val Lys Arg Gly Leu Ala Asp Ala Glu Ser
    50                  55                  60

Thr Val Pro Val Arg Ile Gly Leu Lys Gln Ser Asn Val Asp Ala Ala
65                  70                  75                  80

His Asp Leu Leu Met Asp Ile Ser Asp Pro Arg Ser Pro Asn Tyr Gly
                85                  90                  95

Lys His Leu Ser Arg Ser Glu Val Glu Asp Leu Phe Ala Pro Arg Glu
            100                 105                 110

His Ser Val Ala Lys Val Lys Arg Trp Leu Ala Ser Ala Gly Val Asp
        115                 120                 125

Glu Gly Arg Ile Ser Gln Ser Ala Asn Lys Gln Trp Ile Gln Phe Asp
    130                 135                 140

Ala Pro Val Tyr Glu Leu Glu Lys Leu Leu Leu Thr Arg Tyr His Ile
145                 150                 155                 160

Phe Glu Asn Leu Glu Thr Gly Val Gln Asn Ile Ala Cys Ser Glu Tyr
                165                 170                 175

His Val Pro Arg Asp Val Ser His His Ile Asp Tyr Ile Thr Pro Gly
            180                 185                 190

Ile Lys Leu Met Ala Gly Gly Arg Glu Glu Arg Met Val Arg Trp Arg
        195                 200                 205

Lys Ala Asp Arg Arg Ser Leu Val Ala Gly Leu Ala Ser Gln Gly Arg
    210                 215                 220

Lys Gly Ala His Gly Met Gly His Gly Gly Gly Gly Gly Ser Arg Ser
225                 230                 235                 240

Pro Asp Asp Pro Val Val Asp Asp Ser Pro Phe Arg Val Thr Gly Pro
                245                 250                 255
```

```
Cys Ser Ala Glu Ile Thr Pro Asn Cys Ile Arg Ala Gln Tyr Gln Leu
            260                 265                 270

Pro Asn Gly Thr Arg Ala Ala Ser Gly Asn Glu Leu Gly Ile Phe Gln
        275                 280                 285

Gly Leu Gly Gln His Tyr Ser Gln Glu Asp Leu Asp Asn Tyr Trp Lys
    290                 295                 300

Tyr Val Ala Pro Trp Val Pro Arg Gly Thr His Pro Glu Leu Arg Ser
305                 310                 315                 320

Ile Asn Gly Ala Leu Gly Pro Ala Asn Asp Thr Leu Arg Ala Gly Glu
                325                 330                 335

Glu Ala Asp Leu Asp Phe Gln Ile Ala Ile Pro Leu Ile Trp Pro Gln
            340                 345                 350

Arg Thr Val Leu Phe Gln Thr Asp Asp Glu Trp Tyr Gln Gln Asp Gln
        355                 360                 365

Gln Arg Ala Asp Thr Lys Tyr Pro Gly Phe Phe Asn Thr Phe Phe Asp
    370                 375                 380

Ala Ile Asp Gly Ser Tyr Cys His Met Thr Ala Phe Asn Met Thr Gly
385                 390                 395                 400

Asn Cys Val Thr Pro Glu Cys Arg Asp Pro Glu Tyr Pro Asn Pro Asn
                405                 410                 415

Ala Thr Pro Glu Gln Gly Gly Tyr Ala Gly Ala Leu Met Cys Gly Arg
            420                 425                 430

His Arg Pro Thr Ser Val Val Ser Val Ser Tyr Ser Gly Thr Glu Asp
        435                 440                 445

Ser Trp Pro Ala Ser Tyr Met Arg Arg Gln Cys Leu Glu Val Leu Lys
    450                 455                 460

Leu Ala Leu Gln Gly Val Thr Val Val Glu Ser Ser Gly Asp Phe Gly
465                 470                 475                 480

Val Gly Gly Arg Pro Phe Asp Pro Arg Ala Gly Cys Leu Gly Pro Asp
                485                 490                 495

Arg Ala Val Phe Ser Pro Arg Val Met Ala Asn Cys Pro Tyr Val Leu
            500                 505                 510

Ser Val Gly Ala Thr Ala Leu Val Asp Pro Glu Gln Glu Gln Gln Gln
        515                 520                 525
```

```
Gln His Ala Asp Arg Gly Gly Ser Gly Lys Glu Pro Arg Leu Val Glu
    530                 535                 540

Val Ala Ala Arg Thr Phe Ala Ser Gly Gly Gly Phe Ser Asn Ile Phe
545                 550                 555                 560

Gly Arg Pro Lys Trp Gln Asp Arg His Val Arg Glu Tyr Leu Arg Lys
                565                 570                 575

Thr Asn Leu Ser Glu Leu Gly Tyr Asp Asn Ala Ala Gly Met Ser Phe
            580                 585                 590

Asp Ser Leu Arg Pro Pro Pro Ala Gly Gly Lys Leu Phe Asn Arg Leu
        595                 600                 605

Gly Arg Gly Tyr Pro Asp Val Ala Ala Val Gly Gln Asn Phe Arg Val
    610                 615                 620

Val Leu Arg Gly Tyr Pro Asn Arg Met His Gly Thr Ser Ala Ala Ala
625                 630                 635                 640

Pro Val Trp Ala Ser Ile Leu Thr Leu Ile Asn Glu Glu Arg Arg Ala
                645                 650                 655

Val Gly Lys Gly Pro Val Gly Phe Val His Gln Val Leu Tyr Gln His
            660                 665                 670

Pro Glu Val Phe Thr Asp Ile Thr Val Gly Ser Asn Pro Gly Cys Gly
        675                 680                 685

Thr Asp Gly Phe Pro Val Glu Glu Gly Trp Asp Pro Val Thr Gly Leu
    690                 695                 700

Gly Ser Pro Ile Tyr Pro Lys Leu Leu Lys Leu Phe Met Ser Leu Pro
705                 710                 715                 720


<210>  562
<211>  719
<212>  PRT
<213>  Neurospora crassa

<400>  562

Met Phe Arg Phe His Leu Trp Thr Leu Leu Arg Leu Phe Ala Leu Leu
1               5                   10                  15

Ser Ser Leu Val Thr Ala Ser Arg Ile Val Leu Glu Glu Ala Gly His
            20                  25                  30

Leu Pro Ala Gly Trp Lys Val Glu Arg His Ala Thr Ala Ser Asp Arg
        35                  40                  45
```

```
Ile Gln Leu Ser Ile Ala Leu Lys Glu Pro Gly Ile Glu Glu Leu Lys
    50                  55                  60

Arg Arg Leu Leu Gln Gln Ser Thr Ser Asp Asp His Pro Asn Ser Arg
65                  70                  75                  80

Gln Phe Thr Lys Glu Glu Val Glu Lys His Arg Gln Pro Asp Gln Arg
                85                  90                  95

Ser Val Thr Ala Val Gly Arg Trp Leu Gln Ser His Gly Ile Lys Ser
            100                 105                 110

Tyr Asn Ala Asp Asn Ser Trp Ile Thr Phe Lys Ala Thr Ala Ala Thr
        115                 120                 125

Val Gln Met Leu Phe Glu Ala Asp Leu Ala Tyr Tyr Ser Tyr Asn Gly
    130                 135                 140

Asp Pro Ser Thr Gln Ile Leu Arg Ser Arg Ser Tyr Thr Ile Pro Arg
145                 150                 155                 160

Trp Leu Ser Asp Asp Ile Asp Phe Val His Pro Leu Thr Asn Phe Met
                165                 170                 175

Pro Pro Arg Asn Arg Asn Asp Gly Thr Leu Gly Ile Gly Arg Arg Gln
            180                 185                 190

Pro Ile Gln Pro Lys Leu Ser Ala Arg Glu Asp Phe Phe Ala Pro Pro
        195                 200                 205

Cys Trp Thr Gly Thr Phe Pro Gly Cys Ile Arg Lys Leu Tyr Asn Leu
    210                 215                 220

Thr Tyr Thr Pro Ser Pro Asp Phe Arg Ser Pro Ser Pro Val Arg Phe
225                 230                 235                 240

Gly Ile Ala Ser Phe Leu Glu Gln Tyr Ile Thr His Arg Asp Val Thr
                245                 250                 255

Ser Phe Leu Ala Thr Tyr Ala Arg Glu Leu Leu Pro Leu Arg Pro Thr
            260                 265                 270

Pro Ser Arg Gly Gly Ser Gly Gly Ser Leu Thr Leu Pro Pro Val Thr
        275                 280                 285

Asn Thr Thr Ser Glu Pro Pro Tyr Asn Ile Thr Ile Thr Leu Leu Asn
    290                 295                 300

Asn Ala Thr Arg Trp Asp Pro His Ser Thr Asp Pro Ala Leu Ser Gly
305                 310                 315                 320
```

```
Leu Glu Ala Asn Leu Asp Val Gln Tyr Ala Leu Ser Leu Gly His Pro
                325                 330                 335

Thr Arg Val Ile Tyr Tyr Ala Thr Gly Gly Arg Gly Thr Lys Leu Asp
            340                 345                 350

Ser Ser Gly Arg Pro Leu Pro Thr Asn Asp Pro Arg Ala Asn Asn Glu
        355                 360                 365

Pro Phe Leu Glu Phe Leu Gln Ala Leu Leu Ala Leu Pro Asp Asn Gln
    370                 375                 380

Ile Pro His Val Leu Ser Ile Ser Tyr Ala Asp Asp Glu Gln Ser Val
385                 390                 395                 400

Pro Arg Lys Tyr Ala His Arg Val Cys Asp Leu Phe Ala Ala Val Ala
                405                 410                 415

Ala Arg Gly Thr Ser Val Leu Val Ala Thr Gly Asp Gly Gly Ala Ala
            420                 425                 430

Gly Ile Gly Phe Ser Ala Gly Gly Gly Asp Thr Cys Ile Lys Asn Asp
        435                 440                 445

Gly Ser Gly Arg Arg Ala Phe Val Pro Thr Phe Pro Ala Ser Cys Pro
    450                 455                 460

Trp Val Thr Ser Val Gly Ala Thr Asp Asn Thr Ala Leu Asn Leu Thr
465                 470                 475                 480

Gly Ala Ala Phe Ser Ser Gly Gly Phe Ser Glu Tyr Phe Asp Arg Pro
                485                 490                 495

Leu Trp Gln Arg Ala Ala Val Asp Pro Tyr Val Ser Ser Leu Leu Arg
            500                 505                 510

Ser Arg Ser Ser Lys Pro Gly Gln Pro Ser Gln Pro Arg Asp Leu Lys
        515                 520                 525

Gly Val Tyr Phe Ser His Asn Gly Arg Gly Met Pro Asp Met Ala Ala
    530                 535                 540

Ile Gly Ser Gly Phe Gln Ile Ile His Arg Gly Glu Met Val Glu Val
545                 550                 555                 560

Arg Gly Thr Ser Ala Ser Thr Pro Val Val Ala Ala Met Val Ala Leu
                565                 570                 575

Val Asn Asp Gln Arg Leu Arg Gln Gly Lys Arg Ser Leu Gly Trp Leu
            580                 585                 590
```

```
Asn Gly His Leu Tyr Leu Asp Pro Arg Val Arg Arg Val Leu Thr Asp
        595                 600                 605

Val Lys Trp Gly Arg Ser Glu Gly Cys Val Phe Pro Gly Glu Ala Leu
    610                 615                 620

Glu Glu Gly Arg Gly Lys Gly Lys Glu Lys Tyr Trp Arg His Ser Val
625                 630                 635                 640

Val Glu Lys Arg Gln Gly Asn Ser Glu Glu Asp Gly Gly Thr His Gly
                645                 650                 655

Gly Asp Gly Glu Gly Lys Ala Asp Glu Glu Asp Trp Gly Gly Glu Gly
            660                 665                 670

Glu Val Gly Glu Gly Glu Gly Asp Gln Ser Glu Asn Val Ile Leu Gly
        675                 680                 685

Gly Trp Asp Ala Arg Lys Gly Trp Asp Pro Val Thr Gly Leu Gly Val
    690                 695                 700

Pro Gly Asp Phe Gln Glu Met Leu Lys Val Leu Gly Ser Val Trp
705                 710                 715


<210>  563
<211>  639
<212>  PRT
<213>  Aspergillus niger

<400>  563

Met His Val Ser Leu Phe Leu Leu Ser Val Thr Ala Ala Phe Ala Ser
1               5                   10                  15

Pro Thr Pro His Asn Tyr Val Val His Glu Arg Arg Asp Ala Leu Pro
            20                  25                  30

Ser Val Trp Val Glu Glu Ser Arg Leu Asp Lys Gly Ala Leu Leu Pro
        35                  40                  45

Met Arg Ile Gly Leu Thr Gln Ser Asn Leu Asp Arg Gly His Asp Leu
    50                  55                  60

Leu Met Glu Val Ser His Pro Gln Ser Ser Arg Tyr Gly Lys His Leu
65                  70                  75                  80

Ser Ser Glu Glu Val His Asp Leu Phe Ala Pro Ser Asn Glu Ala Val
                85                  90                  95

Glu Thr Val Arg Thr Trp Ile Glu Ser Ala Gly Ile Ala Pro Ser Arg
            100                 105                 110

Ile Ser Gln Ser Tyr Asn Lys Gln Trp Leu Gln Phe Asp Ala His Ala
```

```
        115                 120                 125

Ser Glu Val Glu Gln Leu Leu Gln Thr Glu Tyr Tyr Ile Tyr Thr His
    130                 135                 140

Ala Asp Thr Gly Ser Ser His Val Thr Cys His Glu Tyr His Val Pro
145                 150                 155                 160

Glu Thr Ile Gln Ser His Ile Asp Tyr Ile Thr Pro Gly Val Lys Met
                165                 170                 175

Leu Glu Val Arg Gly Thr Pro Ser Lys Lys Arg Asp Ala Glu Lys Arg
            180                 185                 190

Ser Leu Gly Ser Leu Pro Pro Ile Leu Ala Pro Leu Pro Ile Asn Ile
        195                 200                 205

Thr Lys Ile Phe Asp Asp Pro Leu Ala His Cys Asp Leu Ala Val Thr
    210                 215                 220

Pro Asp Cys Ile Arg Ala Met Tyr Asn Ile Thr Lys Gly Thr Thr Ala
225                 230                 235                 240

Thr Lys Gly Asn Glu Leu Gly Ile Phe Glu Asp Leu Gly Asp Ile Tyr
                245                 250                 255

Ser Gln Asp Asp Leu Asn Leu Phe Phe Ala Asn Phe Ala Ser Asp Ile
            260                 265                 270

Pro Gln Gly Thr His Pro Thr Leu Asp Ser Ile Asp Gly Ala Thr Ala
        275                 280                 285

Pro Thr Asp Val Thr Asn Ala Gly Pro Glu Ser Asp Leu Asp Phe Gln
    290                 295                 300

Ile Ala Tyr Pro Ile Ile Trp Pro Gln Asn Thr Ile Leu Tyr Gln Thr
305                 310                 315                 320

Asp Asp Pro Asn Tyr Glu Asp Asn Tyr Asn Phe Lys Gly Leu Leu Asn
                325                 330                 335

Asn Phe Leu Tyr Ala Ile Asp Gly Ser Tyr Cys Asn Glu Thr Ser Ser
            340                 345                 350

Leu Asp Pro Gln Tyr Pro Asp Pro Ser Pro Gly Gly Tyr Ser Ser Pro
        355                 360                 365

Lys Gln Cys Gly Val Tyr Thr Pro Thr Asn Val Ile Ser Ile Ser Tyr
    370                 375                 380

Gly Ser Pro Glu Ala Asp Leu Pro Ile Ala Tyr Gln Arg Arg Gln Cys
```

385 390 395 400

His Glu Phe Met Lys Leu Gly Leu Gln Gly Ile Ser Val Val Val Ala
405 410 415

Ser Gly Asp Ser Gly Val Ala Ser Ser Thr Gly Thr Cys Phe Gly Asp
420 425 430

Ala Asp Asn Val Phe Val Pro Asp Phe Pro Ala Thr Cys Pro Tyr Leu
435 440 445

Thr Ala Val Gly Gly Thr Tyr Leu Pro Leu Gly Ala Asp Ala Ala Lys
450 455 460

Asp Gln Glu Ile Ala Val Thr Arg Phe Pro Ser Gly Gly Gly Phe Ser
465 470 475 480

Asn Ile Tyr Ala Arg Pro Ser Tyr Gln Asn His Ser Val Glu Thr Tyr
485 490 495

Phe Ser Thr Thr Ser Asp Asp Leu Thr Tyr Pro Tyr Tyr Ser Gly Val
500 505 510

Asn Tyr Thr Asp Phe Ser Asn Thr Asp Gly Val Tyr Asn Arg Ile Gly
515 520 525

Arg Gly Tyr Pro Asp Val Ser Ala Ile Ala Asp Asn Ile Ile Ile Tyr
530 535 540

Asn Gln Gly Glu Ala Thr Leu Val Gly Gly Thr Ser Ala Ala Ala Pro
545 550 555 560

Ala Phe Ala Ala Met Leu Thr Arg Ile Asn Glu Glu Arg Leu Ala Lys
565 570 575

Gly Lys Ser Thr Val Gly Phe Val Asn Pro Val Leu Tyr Glu His Pro
580 585 590

Glu Ala Phe Arg Asp Val Thr Val Gly Ser Asn Pro Gly Cys Gly Thr
595 600 605

Asp Gly Phe Pro Val Ala Gly Gly Trp Asp Pro Val Thr Gly Leu Gly
610 615 620

Thr Pro Arg Phe Glu Asp Leu Met Asp Ile Phe Val Gly Asp Asp
625 630 635

<210> 564
<211> 602
<212> PRT
<213> Aspergillus fumigatus

<400> 564

```
Met Phe Ser Ser Leu Leu Asn Arg Gly Ala Leu Leu Ala Val Val Ser
1               5                  10                  15

Leu Leu Ser Ser Ser Val Ala Ala Glu Val Phe Glu Lys Leu Ser Ala
            20                  25                  30

Val Pro Gln Gly Trp Lys Tyr Ser His Thr Pro Ser Asp Arg Asp Pro
        35                  40                  45

Ile Arg Leu Gln Ile Ala Leu Lys Gln His Asp Val Glu Gly Phe Glu
    50                  55                  60

Thr Ala Leu Leu Glu Met Ser Asp Pro Tyr His Pro Asn Tyr Gly Lys
65                  70                  75                  80

His Phe Gln Thr His Glu Glu Met Lys Arg Met Leu Leu Pro Thr Gln
                85                  90                  95

Glu Ala Val Glu Ser Val Arg Gly Trp Leu Glu Ser Ala Gly Ile Ser
            100                 105                 110

Asp Ile Glu Glu Asp Ala Asp Trp Ile Lys Phe Arg Thr Thr Val Gly
        115                 120                 125

Val Ala Asn Asp Leu Leu Asp Ala Asp Phe Lys Trp Tyr Val Asn Glu
    130                 135                 140

Val Gly His Val Glu Arg Leu Arg Thr Leu Ala Tyr Ser Leu Pro Gln
145                 150                 155                 160

Ser Val Ala Ser His Val Asn Met Val Gln Pro Thr Thr Arg Phe Gly
                165                 170                 175

Gln Ile Lys Pro Asn Arg Ala Thr Met Arg Gly Arg Pro Val Gln Val
            180                 185                 190

Asp Ala Asp Ile Leu Ser Ala Ala Val Gln Ala Gly Asp Thr Ser Thr
        195                 200                 205

Cys Asp Gln Val Ile Thr Pro Gln Cys Leu Lys Asp Leu Tyr Asn Ile
    210                 215                 220

Gly Asp Tyr Lys Ala Asp Pro Asn Gly Gly Ser Lys Val Ala Phe Ala
225                 230                 235                 240

Ser Phe Leu Glu Glu Tyr Ala Arg Tyr Asp Asp Leu Ala Lys Phe Glu
                245                 250                 255

Glu Lys Leu Ala Pro Tyr Ala Ile Gly Gln Asn Phe Ser Val Ile Gln
            260                 265                 270
```

```
Tyr Asn Gly Gly Leu Asn Asp Gln Asn Ser Ala Ser Asp Ser Gly Glu
        275                 280                 285

Ala Asn Leu Asp Leu Gln Tyr Ile Val Gly Val Ser Ser Pro Ile Pro
    290                 295                 300

Val Thr Glu Phe Ser Thr Gly Gly Arg Gly Leu Leu Ile Pro Asp Leu
305                 310                 315                 320

Ser Gln Pro Asp Pro Asn Asp Asn Ser Asn Glu Pro Tyr Leu Glu Phe
                325                 330                 335

Leu Gln Asn Val Leu Lys Met Asp Gln Asp Lys Leu Pro Gln Val Ile
            340                 345                 350

Ser Thr Ser Tyr Gly Glu Asp Glu Gln Thr Ile Pro Glu Lys Tyr Ala
        355                 360                 365

Arg Ser Val Cys Asn Leu Tyr Ala Gln Leu Gly Ser Arg Gly Val Ser
    370                 375                 380

Val Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Ala Ala Cys Leu Thr
385                 390                 395                 400

Asn Asp Gly Thr Asn Arg Thr His Phe Pro Pro Gln Phe Pro Ala Ala
                405                 410                 415

Cys Pro Trp Val Thr Ser Val Gly Gly Thr Thr Lys Thr Gln Pro Glu
            420                 425                 430

Glu Ala Val Tyr Phe Ser Ser Gly Gly Phe Ser Asp Leu Trp Glu Arg
        435                 440                 445

Pro Ser Trp Gln Asp Ser Ala Val Lys Arg Tyr Leu Lys Lys Leu Gly
    450                 455                 460

Pro Arg Tyr Lys Gly Leu Tyr Asn Pro Lys Gly Arg Ala Phe Pro Asp
465                 470                 475                 480

Val Ala Ala Gln Ala Glu Asn Tyr Ala Val Phe Asp Lys Gly Val Leu
                485                 490                 495

His Gln Phe Asp Gly Thr Ser Cys Ser Ala Pro Ala Phe Ser Ala Ile
            500                 505                 510

Val Ala Leu Leu Asn Asp Ala Arg Leu Arg Ala His Lys Pro Val Met
        515                 520                 525

Gly Phe Leu Asn Pro Trp Leu Tyr Ser Lys Ala Ser Lys Gly Phe Asn
    530                 535                 540
```

```
Asp Ile Val Lys Gly Gly Ser Lys Gly Cys Asp Gly Arg Asn Arg Phe
545                 550                 555                 560


Gly Gly Thr Pro Asn Gly Ser Pro Val Val Pro Tyr Ala Ser Trp Asn
                565                 570                 575


Ala Thr Asp Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr Pro Asp Phe
            580                 585                 590


Gly Lys Leu Leu Ser Leu Ala Met Arg Arg
        595                 600


<210>  565
<211>  611
<212>  PRT
<213>  Aspergillus niger

<400>  565

Met Leu Ser Ser Leu Leu Ser Gln Gly Ala Ala Val Ser Leu Ala Val
1               5                   10                  15


Leu Ser Leu Leu Pro Ser Pro Val Ala Ala Glu Ile Phe Glu Lys Leu
            20                  25                  30


Ser Gly Val Pro Asn Gly Trp Arg Tyr Ala Asn Asn Pro Gln Gly Asn
        35                  40                  45


Glu Val Ile Arg Leu Gln Ile Ala Leu Gln Gln His Asp Val Ala Gly
    50                  55                  60


Phe Glu Gln Ala Val Met Asp Met Ser Thr Pro Gly His Ala Asp Tyr
65                  70                  75                  80


Gly Lys His Phe Arg Thr His Asp Glu Met Lys Arg Met Leu Leu Pro
                85                  90                  95


Ser Glu Thr Ala Val Asp Ser Val Arg Asp Trp Leu Glu Ser Ala Gly
            100                 105                 110


Val His Asn Ile Gln Val Asp Ala Asp Trp Val Lys Phe His Thr Thr
        115                 120                 125


Val Asn Lys Ala Asn Ala Leu Leu Asp Ala Asp Phe Lys Trp Tyr Val
    130                 135                 140


Ser Asp Ala Lys His Ile Arg Arg Leu Arg Thr Leu Gln Tyr Ser Ile
145                 150                 155                 160


Pro Asp Ala Leu Val Ser His Ile Asn Met Ile Gln Pro Thr Thr Arg
                165                 170                 175
```

```
Phe Gly Gln Ile Gln Pro Asn Arg Ala Thr Met Arg Ser Lys Pro Lys
            180                 185                 190

His Ala Asp Glu Thr Phe Leu Thr Ala Ala Thr Leu Ala Gln Asn Thr
        195                 200                 205

Ser His Cys Asp Ser Ile Ile Thr Pro His Cys Leu Lys Gln Leu Tyr
    210                 215                 220

Asn Ile Gly Asp Tyr Gln Ala Asp Pro Lys Ser Gly Ser Lys Ile Gly
225                 230                 235                 240

Phe Ala Ser Tyr Leu Glu Glu Tyr Ala Arg Tyr Ala Asp Leu Glu Arg
                245                 250                 255

Phe Glu Gln His Leu Ala Pro Asn Ala Ile Gly Gln Asn Phe Ser Val
            260                 265                 270

Val Gln Phe Asn Gly Gly Leu Asn Asp Gln Leu Ser Ser Ser Asp Ser
        275                 280                 285

Gly Glu Ala Asn Leu Asp Leu Gln Tyr Ile Leu Gly Val Ser Ala Pro
    290                 295                 300

Val Pro Ile Thr Glu Tyr Ser Thr Gly Gly Arg Gly Glu Leu Val Pro
305                 310                 315                 320

Asp Leu Ser Ser Pro Asp Pro Asn Asp Asn Ser Asn Glu Pro Tyr Leu
                325                 330                 335

Asp Phe Leu Gln Gly Ile Leu Lys Leu Asn Asn Ser Asp Leu Pro Gln
            340                 345                 350

Val Ile Ser Thr Ser Tyr Gly Glu Asp Glu Gln Thr Ile Pro Val Pro
        355                 360                 365

Tyr Ala Arg Thr Val Cys Asn Leu Tyr Ala Gln Leu Gly Ser Arg Gly
    370                 375                 380

Val Ser Val Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Ala Ala Cys
385                 390                 395                 400

Leu Thr Asn Asp Gly Thr Asn Arg Thr His Phe Pro Pro Gln Phe Pro
                405                 410                 415

Ala Ser Cys Pro Trp Val Thr Ser Val Gly Ala Thr Ser Lys Thr Ser
            420                 425                 430

Pro Glu Gln Ala Val Ser Phe Ser Ser Gly Gly Phe Ser Asp Leu Trp
        435                 440                 445
```

```
Pro Arg Pro Ser Tyr Gln His Ala Ala Val Gln Thr Tyr Leu Thr Lys
    450                 455                 460

His Leu Gly Asn Lys Phe Ser Gly Leu Phe Asn Ala Ser Gly Arg Ala
465                 470                 475                 480

Phe Pro Asp Val Ser Ala Gln Gly Val Asn Tyr Ala Val Tyr Asp Lys
                485                 490                 495

Gly Met Leu Gly Gln Phe Asp Gly Thr Ser Cys Ser Ala Pro Thr Phe
            500                 505                 510

Ser Gly Val Ile Ala Leu Leu Asn Asp Ala Arg Leu Arg Ala Gly Leu
        515                 520                 525

Pro Val Met Gly Phe Leu Asn Pro Phe Leu Tyr Gly Val Gly Ser Glu
    530                 535                 540

Lys Gly Ala Leu Asn Asp Ile Val Asn Gly Gly Ser Val Gly Cys Asp
545                 550                 555                 560

Gly Arg Asn Arg Phe Gly Gly Thr Pro Asn Gly Ser Pro Val Val Pro
                565                 570                 575

Phe Ala Ser Trp Asn Ala Thr Thr Gly Trp Asp Pro Val Ser Gly Leu
            580                 585                 590

Gly Thr Pro Asp Phe Ala Lys Leu Lys Gly Val Ala Leu Gly Glu Glu
        595                 600                 605

Gly Gly Asn
    610


<210>  566
<211>  596
<212>  PRT
<213>  Aspergillus fumigatus

<400>  566

Met Ala Pro Phe Thr Phe Leu Val Gly Ile Leu Ser Leu Cys Ile Cys
1               5                   10                  15

Cys Ile Val Leu Gly Ala Ala Ala Glu Pro Ser Tyr Ala Val Val Glu
            20                  25                  30

Gln Leu Arg Asn Val Pro Asp Gly Trp Ile Lys His Asp Ala Ala Pro
        35                  40                  45

Ala Ser Glu Leu Ile Arg Phe Arg Leu Ala Met Asn Gln Glu Arg Ala
    50                  55                  60
```

```
Ala Glu Phe Glu Arg Arg Val Ile Asp Met Ser Thr Pro Gly His Ser
65                  70                  75                  80

Ser Tyr Gly Gln His Met Lys Arg Asp Asp Val Arg Glu Phe Leu Arg
                85                  90                  95

Pro Pro Glu Glu Val Ser Asp Lys Val Leu Ser Trp Leu Arg Ser Glu
            100                 105                 110

Asn Val Pro Ala Gly Ser Ile Glu Ser His Gly Asn Trp Val Thr Phe
        115                 120                 125

Thr Val Pro Val Ser Gln Ala Glu Arg Met Leu Arg Thr Arg Phe Tyr
    130                 135                 140

Ala Phe Gln His Val Glu Thr Ser Thr Thr Gln Val Arg Thr Leu Ala
145                 150                 155                 160

Tyr Ser Val Pro His Asp Val His Arg Tyr Ile Gln Met Ile Gln Pro
                165                 170                 175

Thr Thr Arg Phe Gly Gln Pro Ala Arg His Glu Arg Gln Pro Leu Phe
            180                 185                 190

His Gly Thr Val Ala Thr Lys Glu Glu Leu Ala Ala Asn Cys Ser Thr
        195                 200                 205

Thr Ile Thr Pro Asn Cys Leu Arg Glu Leu Tyr Gly Ile Tyr Asp Thr
    210                 215                 220

Arg Ala Glu Pro Asp Pro Arg Asn Arg Leu Gly Val Ser Gly Phe Leu
225                 230                 235                 240

Asp Gln Tyr Ala Arg Tyr Asp Asp Phe Glu Asn Phe Met Arg Leu Tyr
                245                 250                 255

Ala Thr Ser Arg Thr Asp Val Asn Phe Thr Val Val Ser Ile Asn Asp
            260                 265                 270

Gly Leu Asn Leu Gln Asp Ser Ser Leu Ser Ser Thr Glu Ala Ser Leu
        275                 280                 285

Asp Val Gln Tyr Ala Tyr Ser Leu Ala Tyr Lys Ala Leu Gly Thr Tyr
    290                 295                 300

Tyr Thr Thr Gly Gly Arg Gly Pro Val Val Pro Glu Glu Gly Gln Asp
305                 310                 315                 320

Thr Asn Val Ser Thr Asn Glu Pro Tyr Leu Asp Gln Leu His Tyr Leu
                325                 330                 335
```

```
Leu Asp Leu Pro Asp Glu Glu Leu Pro Ala Val Leu Ser Thr Ser Tyr
            340                 345                 350

Gly Glu Asp Glu Gln Ser Val Pro Glu Ser Tyr Ser Asn Ala Thr Cys
        355                 360                 365

Asn Leu Phe Ala Gln Leu Gly Ala Arg Gly Val Ser Ile Ile Phe Ser
    370                 375                 380

Ser Gly Asp Ser Gly Val Gly Ser Thr Cys Ile Thr Asn Asp Gly Thr
385                 390                 395                 400

Lys Thr Thr Arg Phe Leu Pro Val Phe Pro Ala Ser Cys Pro Phe Val
                405                 410                 415

Thr Ala Val Gly Gly Thr His Asp Ile Gln Pro Glu Lys Ala Ile Ser
            420                 425                 430

Phe Ser Ser Gly Gly Phe Ser Asp His Phe Pro Arg Pro Ser Tyr Gln
        435                 440                 445

Asp Ser Ser Val Gln Gly Tyr Leu Glu Gln Leu Gly Ser Arg Trp Asn
    450                 455                 460

Gly Leu Tyr Asn Pro Ser Gly Arg Gly Phe Pro Asp Val Ala Ala Gln
465                 470                 475                 480

Ala Thr Asn Phe Val Val Ile Asp His Gly Gln Thr Leu Arg Val Gly
                485                 490                 495

Gly Thr Ser Ala Ser Ala Pro Val Phe Ala Ala Ile Val Ser Arg Leu
            500                 505                 510

Asn Ala Ala Arg Leu Glu Asp Gly Leu Leu Lys Leu Gly Phe Leu Asn
        515                 520                 525

Pro Trp Leu Tyr Ser Leu Asn Gln Thr Gly Phe Thr Asp Ile Ile Asp
    530                 535                 540

Gly Gly Ser Ser Gly Cys Tyr Val Gly Thr Ser Asn Glu Gln Leu Val
545                 550                 555                 560

Pro Asn Ala Ser Trp Asn Ala Thr Pro Gly Trp Asp Pro Val Thr Gly
                565                 570                 575

Leu Gly Thr Pro Ile Tyr Asn Thr Leu Val Lys Leu Ala Thr Ser Val
            580                 585                 590

Ser Ser Thr Pro
        595
```

<210> 567
<211> 595
<212> PRT
<213> Aspergillus flavus

<400> 567

```
Met Pro Ser Gln Gln Met Val Leu Phe Ala Tyr Thr Ile Gly Ala Phe
1               5                  10                  15

Ser Leu Val Leu His Leu Leu Val Ala Ala Leu Ala Thr Gly Pro Arg
            20                  25                  30

Tyr Ser Val Val Glu Arg Leu Glu Lys Ile Pro Asp Gly Trp Val Asp
        35                  40                  45

Val Gly Thr Pro Ser Pro Ser Lys Pro Ile Glu Leu Gln Leu Ala Val
    50                  55                  60

His Pro Glu Lys Ile Thr Glu Phe Glu Gln Arg Val Ile Glu Ile Ser
65                  70                  75                  80

Thr Pro Gly Asn Gln Asn Tyr Gly Arg His Met Ser Arg Asp Glu Val
                85                  90                  95

Arg Asn Phe Leu Tyr Ser Ser Asp Val Ala Pro Arg Lys Val Leu Ser
            100                 105                 110

Trp Leu Lys Ala Ala His Ile Pro Ala Thr Ser Ile Asn Lys His Thr
        115                 120                 125

Gly Trp Ile Thr Phe Thr Val Pro Val Ser Gln Ala Glu Gln Leu Leu
    130                 135                 140

Arg Thr Arg Phe Tyr Thr Phe Glu His Lys Lys Ser Arg Ala Thr Val
145                 150                 155                 160

Val Arg Thr Leu Lys Tyr Ser Val Pro Lys Glu Leu Arg Ser Phe Val
                165                 170                 175

Gln Met Ile Gln Pro Thr Thr Arg Phe Gly Gln Leu Met Pro Gln Thr
            180                 185                 190

Glu Pro Pro Leu Leu Gln Ala Leu Pro Val Thr Leu Lys Asp Leu Val
        195                 200                 205

Ala Gly Cys Ser Ser Ile Val Thr Pro Ser Cys Leu Arg Lys Leu Tyr
    210                 215                 220

Gly Ile Ser Asp Ser Lys Pro Lys Pro Asp Arg Arg Asn Arg Leu Gly
225                 230                 235                 240

Val Ser Gly Phe Leu Asp Gln Tyr Ala Arg Tyr Ser Asp Phe His Gln
```

```
                245                 250                 255

Phe Leu Arg Leu Tyr Ala Pro Asn Ile Thr Asp Asn Asn Tyr Thr Val
            260                 265                 270

Glu Leu Ile Asn Gly Gly Leu Asn Leu Gln Asp Ser Leu Glu Asp Ser
        275                 280                 285

Ser Glu Ala Ser Leu Asp Ile Gln Tyr Ala Ala Ala Leu Ala Asp Thr
    290                 295                 300

Pro Phe Thr Thr Phe Tyr Ser Thr Ala Gly Arg Gly Pro Val Ile Arg
305                 310                 315                 320

Asp Leu Gly His Asn Asp Pro Ser Asp Pro His Glu Pro Tyr Leu Glu
                325                 330                 335

Gln Leu Arg Tyr Leu Leu Asp Leu Pro Asp Asp Glu Leu Pro Ala Val
            340                 345                 350

Leu Thr Thr Ser Tyr Gly Glu Leu Glu Gln Ser Val Pro Glu Ile Tyr
        355                 360                 365

Ala Arg Thr Thr Cys Asn Met Phe Ala Gln Leu Gly Ala Arg Gly Val
    370                 375                 380

Ser Val Ile Phe Ser Ser Gly Asp Ser Gly Val Gly Asp Ser Cys Ile
385                 390                 395                 400

Thr Asn Asp Gly Thr Asn Arg Thr Arg Phe Gln Pro Leu Tyr Pro Ala
                405                 410                 415

Ser Cys Pro Phe Val Thr Ser Val Gly Gly Thr Tyr Gly Lys Glu Pro
            420                 425                 430

Glu Met Ala Ile Gly Tyr Ser Thr Gly Gly Phe Ser Glu Tyr Phe Pro
        435                 440                 445

Arg Pro Ser Tyr Gln Asp Gly Ser Val Asn Gln Tyr Leu Ser Gln Leu
    450                 455                 460

Gly Ser Lys Trp Glu Gly Leu Tyr Asn Pro Asn Gly Arg Ala Ile Pro
465                 470                 475                 480

Asp Val Ala Ala Gln Ala Asp His Phe Ile Ile Met Asp His Gly Gln
                485                 490                 495

Leu Leu Lys Thr Gly Gly Thr Ser Ala Ala Ala Pro Val Phe Ala Gly
            500                 505                 510

Ile Val Ser Arg Leu Asn Ala Ala Arg Leu Glu Ser Asn Lys Pro Arg
```

515 520 525

Leu Gly Phe Leu Asn Pro Trp Leu Tyr Ser Leu Asn Gln Thr Gly Phe
530 535 540

Thr Asp Ile Val Asp Gly Gly Ser Val Gly Cys Phe Gly Asp Val Gly
545 550 555 560

Arg Glu Val Pro Tyr Ala Ser Trp Asn Ala Thr Pro Gly Trp Asp Pro
565 570 575

Val Thr Gly Leu Gly Thr Pro Tyr Tyr Lys Ala Leu Val Glu Gln Ala
580 585 590

Met Ser Ile
595

<210> 568
<211> 1068
<212> PRT
<213> Aspergillus nidulans

<400> 568

Met Val Ser Leu Ser Phe Leu Ala Gly Thr Leu Ser Leu Val Ile Ala
1 5 10 15

Cys Phe Val Asn Val Val Ala Ala Asp Phe Gly Tyr Val Thr Val Glu
20 25 30

Arg Leu Gln Arg Ala Pro Asp Gly Trp Ile Arg Gly Pro Val Ala Pro
35 40 45

Pro Phe Lys Met Ile Lys Phe His Ile Ala Leu Arg Gln Glu Lys Ala
50 55 60

Ala Glu Leu Glu Gln Val Thr Leu Asp Met Ser Thr Pro Gly His His
65 70 75 80

Asn Tyr Gly Arg His Leu Lys Arg Asp Asp Val Arg Ala Phe Val Arg
85 90 95

Pro Ser Gly Glu Thr Met Asn Arg Val Leu Ala Trp Leu Glu Ser Ala
100 105 110

Glu Ile Pro Ala Glu Ser Val Arg Thr His Gly Asn Trp Met Glu Val
115 120 125

Ile Leu Pro Val Ser Arg Ala Glu Ser Leu Met Lys Thr Lys Phe His
130 135 140

Ile Tyr Thr His Arg Asp Thr His Arg Arg Ala Ile Arg Thr Leu Ser
145 150 155 160

```
Tyr Ser Val Pro Arg Ala Leu Phe Pro Asp Ile Gln Leu Ile Gln Pro
                165                 170                 175

Thr Thr His Phe Gly Gln Ala Val Ala Gln Gly Lys Arg Pro Asn Phe
            180                 185                 190

Gln Pro Val Ala Ala Thr Phe Asp Arg Leu Thr Ala Asp Cys Ser Thr
        195                 200                 205

Thr Ile Thr Pro Asp Cys Leu Arg Glu Leu Tyr Gly Leu Tyr Asp Thr
    210                 215                 220

Asn Ala Lys Pro Asp Val Arg Asn Arg Leu Gly Ile Ser Gly Tyr Leu
225                 230                 235                 240

Glu Glu Tyr Ala Arg Tyr Ser Asp Phe His Gln Phe Met His Gln Phe
                245                 250                 255

Ser Pro Asn Arg Thr Glu Ala Asn Phe Ser Val Val Ser Ile Asn Gly
            260                 265                 270

Gly Leu Asn Leu Gln Asn Ser Ser Leu Pro Ser Ser Glu Ala Ser Leu
        275                 280                 285

Asp Val Gln Tyr Ala Ile Ser Leu Ala Tyr Asn Thr Phe Ala Thr Tyr
    290                 295                 300

Tyr Thr Thr Ala Gly Arg Ala Pro Phe Leu Pro Gly Ala Thr Gly Thr
305                 310                 315                 320

Asp Glu Asp Ile Ser Ile Asn Glu Pro Tyr Leu Glu Gln Leu His Tyr
                325                 330                 335

Leu Leu Asp Leu Pro Asp Glu Glu Leu Pro Ala Val Leu Thr Thr Ser
            340                 345                 350

Tyr Gly Glu Asp Glu Gln Ser Val Pro Glu Ser Tyr Ala Glu Ala Thr
        355                 360                 365

Cys Asn Leu Phe Ala Gln Leu Gly Ala Arg Gly Val Ser Val Ile Phe
    370                 375                 380

Ser Ser Gly Asp Gly Gly Val Gly Gly Ser Cys Leu Ala Asn Asp Gly
385                 390                 395                 400

Thr Asn Arg Thr Arg Phe Gln Pro Ile Phe Pro Ala Ser Cys Pro Phe
                405                 410                 415

Val Thr Ser Val Gly Gly Thr Glu Gly Met Asn Pro Glu Arg Ala Val
            420                 425                 430
```

```
Glu Phe Ser Gly Gly Gly Phe Ser Asp Arg Phe Ala Arg Pro Ser Tyr
        435                 440                 445

Gln Asp Ser Ser Val Leu Gly Phe Leu Lys Thr Leu Gly Gly Lys Trp
    450                 455                 460

Asp Gly Leu Tyr Asn Pro Gln Gly Arg Gly Ile Pro Asp Val Ala Ala
465                 470                 475                 480

Gln Ala Asn Asn Tyr Ile Ile Ile Asp His Gly Lys Thr Tyr His Ile
                485                 490                 495

Gly Gly Thr Ser Ala Ser Ala Pro Val Phe Ala Ala Ile Val Ser Arg
            500                 505                 510

Leu Asn Ala Ala Arg Leu Glu Asp Gly Lys Pro Arg Leu Gly Phe Leu
        515                 520                 525

Asn Pro Trp Leu Tyr Ser Leu Asn Gln Thr Gly Phe Thr Asp Ile Val
    530                 535                 540

Asp Gly Arg Ser Pro Arg Pro Ala Cys Val Ser Met Lys Thr Arg Pro
545                 550                 555                 560

Gly Ser Ser Ala Trp Ala Lys Ala Ile Ser Ala Asp Pro Lys Thr Lys
                565                 570                 575

Arg Gly Leu Thr His Arg Ala Pro Met Met Tyr Gly Cys His Pro Pro
            580                 585                 590

Trp Pro Leu Cys Ser Arg Pro Arg Ile Val Arg Ser Thr Tyr Pro Cys
        595                 600                 605

His Thr Ala Tyr Ile Leu His Thr Arg Val Pro Gln Phe Gly Trp Glu
    610                 615                 620

Lys Thr Ile Gln Ser Ser Leu Asn Gly Arg Pro Pro Lys Val Pro Arg
625                 630                 635                 640

Pro Gly Pro Thr Ser Lys Trp Ala Thr Ala Glu Ser Pro Pro Glu Cys
                645                 650                 655

Gln Lys Phe Pro Ala Ala Glu Phe Ala Glu Asp Gly Ile Gln Val Thr
            660                 665                 670

Leu Lys Thr Gly Gly Ala Glu Ser Arg Asp Leu Leu His Ser His Val
        675                 680                 685

Glu Gly Val Thr Ser Cys Ile Pro Asn Leu Leu Val Val Ser Asp Met
    690                 695                 700
```

```
Gly Gln Gln Leu Gly Pro Phe Tyr Thr His Asp Val Leu Ala Asp Val
705                 710                 715                 720

Ile His Val Leu Ser Glu Glu Asp Arg Leu Val Tyr Gln Arg Gln Arg
                725                 730                 735

Glu Asp His Phe Tyr Trp Asn Lys Lys Leu Gln Pro Thr Lys Ala Gly
            740                 745                 750

Trp Arg Leu Asp Arg Tyr Lys Phe Leu Ala Met Ile Glu Tyr Ala Tyr
        755                 760                 765

Ala Arg Asn Pro Ser Ala Lys Trp Tyr Val Phe Met Glu Ala Asp Thr
    770                 775                 780

Thr Val Ile Trp Gln Asn Leu Val Gln Leu Leu Ser Arg Tyr Lys Trp
785                 790                 795                 800

Ile Asp Pro Ile Tyr Ile Gly Ser Pro Thr Pro Gly Arg Pro Ile Gly
                805                 810                 815

Thr Trp Trp Asp Pro Glu Pro Thr Phe Phe Val Tyr Gly Gly Ser Gly
            820                 825                 830

Ile Val Leu Ser Val Thr Ala Ile Glu His Leu Leu Arg Glu Asp Leu
        835                 840                 845

Glu Gly Ser Ala Lys Ala Glu Ser Gly Gln Thr Ser Gln Leu Leu Ile
    850                 855                 860

Thr Lys Tyr Gln Asp Met Val Arg Glu Asp Cys Cys Gly Asp Ser Val
865                 870                 875                 880

Leu Gly Trp Val Ala Ala Gln Arg Asp Val Lys Ile Lys Gly Leu Trp
                885                 890                 895

Pro Met Phe Asn Pro His Pro Leu His Gly Thr Pro Leu Gly Lys Ser
            900                 905                 910

Tyr Trp Cys Gln Pro Val Ile Thr Phe His Lys Ser Asp Pro Val Gln
        915                 920                 925

Val Val Glu Leu Trp Lys Trp Gln Thr Glu Arg Gln Lys Lys Gly Asn
    930                 935                 940

Asp Pro Arg Pro Ile Leu Tyr Ser Asp Ile Val Asp Phe Phe Asp Phe
945                 950                 955                 960

Glu Ala Thr Pro Val Arg Glu Asn Trp Asn Asn Ala Asp Met Asp Ser
                965                 970                 975
```

```
Phe Asp Ala Ser Thr His Glu Ala His Asp Ser Phe Asp Ser Cys Lys
            980                 985                 990


Glu Ala Cys His Lys His Asp His  Cys Phe Gln Phe Thr  Tyr His Arg
        995                 1000                1005


Lys Lys  Cys Arg Met Ala Arg  Val Ile Arg Leu Gly  Asn Ser Val
    1010                1015                1020


Ser Met  Asp Gly Asp Gly Asp  Ala Lys Ala Gly Arg  Ser Leu Ala
    1025                1030                1035


Gly Trp  Asp Val Lys Lys Ile  Lys Glu Phe Lys Lys  Ala His Asn
    1040                1045                1050


Cys Glu  Lys Val Asp Trp Pro  Glu Pro Ser Thr Glu  Arg Ile Phe
    1055                1060                1065


<210>  569
<211>  593
<212>  PRT
<213>  Penicillium chrysogenum

<400>  569

Met Arg Leu Gln Phe Leu Leu Leu Arg Ala Leu Gly Leu Phe Leu Cys
1               5                   10                  15


Tyr Thr Gln Leu Val Phe Ala Val Asp Ala Ser Tyr Glu Leu Val Glu
            20                  25                  30


Gln Leu Asp Lys Ala Pro Asp Gly Trp Ser Arg Gly Asp Lys Pro Pro
        35                  40                  45


Ala Ser Lys Phe Ile Lys Phe Arg Leu Ala Ile Ala Gln His Asn Ala
    50                  55                  60


Arg Glu Phe Glu Gln Lys Val Ile Glu Leu Ser Thr Pro Glu His Pro
65                  70                  75                  80


Ser Tyr Gly Gln His Met Ser Arg Asp Glu Val Lys Gln Phe Leu Thr
                85                  90                  95


Pro His Pro Ala Ile Ser Asp Arg Ile Ile Ala Trp Leu Arg Ser Glu
            100                 105                 110


Asn Val Pro Ala Asn Ser Ile Asn Leu Tyr Gly His Trp Val Ser Phe
        115                 120                 125


Ile Val Pro Ile Phe Gln Ala Glu Arg Met Leu Lys Thr Gln Phe Phe
    130                 135                 140
```

```
Tyr Phe His Gln Gln Gly Gln Glu Asn Pro Ala Ile Arg Thr Leu Gly
145                 150                 155                 160

Tyr Ser Val Pro Arg Ala Leu Arg Ser His Ile Gln Leu Ile Gln Pro
                165                 170                 175

Thr Thr Leu Phe Gly Asn Leu Val Pro Gln Lys Ser Pro Val Phe Lys
            180                 185                 190

Gln Lys Ile Ala Thr Pro Glu Lys Leu Ala Ala Gly Cys Asp Val Thr
        195                 200                 205

Ile Thr Pro Asp Cys Leu Arg Asp Leu Tyr Lys Ile Asp Asn Thr Thr
    210                 215                 220

Thr Arg Pro Asp Trp Arg Asn Arg Leu Gly Ile Ser Gly Phe Leu Glu
225                 230                 235                 240

Gln Tyr Ala Arg His Asp Asp Phe Asn Glu Phe Leu Arg Arg Tyr Ala
                245                 250                 255

Gln Ser His Thr Asp Ala Asn Phe Ser Val Val Ser Ile Asn Gly Gly
            260                 265                 270

Gln Asp Gly Gln His Ser Met Ser Asp Ser Val Glu Ala Asn Leu Asp
        275                 280                 285

Val Gln Tyr Ser Ile Pro Leu Ala Asp Glu Val Leu Ala Thr Phe Tyr
    290                 295                 300

Ser Thr Gly Gly Arg Gly Pro Val Val Pro Glu Ile Thr His Pro Asp
305                 310                 315                 320

Pro Thr Glu Ser Ser Asn Glu Pro Tyr Leu Glu Gln Leu His Tyr Leu
                325                 330                 335

Leu Asp Leu Pro Asp Glu Glu Leu Pro Ala Val Leu Ser Asn Ser Tyr
            340                 345                 350

Gly Glu Asn Glu Gln Ser Leu Pro Pro Ser Tyr Leu Asn Ala Thr Cys
        355                 360                 365

Ser Leu Phe Ala Gln Leu Gly Ala Arg Gly Val Ser Ile Leu Phe Gly
    370                 375                 380

Ser Gly Asp Ser Gly Pro Gly Ser Ser Cys Val Lys Asn Asp Gly Thr
385                 390                 395                 400

Asn Gln Thr Arg Phe Leu Pro Gly Tyr Pro Ala Ser Cys Pro Phe Val
                405                 410                 415
```

```
Thr Ala Val Gly Gly Thr Tyr Gly Thr Asn Pro Glu Lys Ala Val Pro
            420                 425                 430

Phe Ser Gly Gly Gly Phe Ser Glu Val Phe Ser Arg Pro Gln Tyr Gln
        435                 440                 445

Asp Gln Ala Val Lys Gly Tyr Leu Gly His Leu Gly Asn Gln Trp Asn
    450                 455                 460

Gly Leu Tyr Asn Ala Thr Gly Arg Gly Tyr Pro Asp Ile Ser Ala Gln
465                 470                 475                 480

Ala Ala Asn Phe Ile Val Arg Asp Gln Gly Asp Trp Ile Ser Val Gly
                485                 490                 495

Gly Thr Ser Ala Ser Thr Pro Val Leu Ala Gly Val Ile Ser Arg Leu
            500                 505                 510

Asn Ala Ala Arg Ile Ala Gln Gly Lys Pro Arg Met Gly Phe Leu Asn
        515                 520                 525

Pro Trp Leu Tyr Ser His Gly Gln Thr Gly Phe Thr Asp Ile Val Leu
    530                 535                 540

Gly Ser Ser Ser Gly Cys Lys Trp Thr Ser Asp Ala Arg Val Arg Asn
545                 550                 555                 560

Ala Ser Trp Asp Ala Thr Glu Gly Trp Asp Pro Ala Thr Gly Leu Gly
                565                 570                 575

Thr Pro Leu Phe Pro Ala Leu Val Lys Leu Val Leu Ser Asp Gly Gln
            580                 585                 590

Ala
```

<210> 570
<211> 568
<212> PRT
<213> Aspergillus fumigatus

<400> 570

```
Met Leu Ser Ser Thr Leu Tyr Ala Gly Trp Leu Leu Ser Leu Ala Ala
1               5                   10                  15

Pro Ala Leu Cys Val Val Gln Glu Lys Leu Ser Ala Val Pro Ser Gly
            20                  25                  30

Trp Thr Leu Ile Glu Asp Ala Ser Glu Ser Asp Thr Ile Thr Leu Ser
        35                  40                  45
```

```
Ile Ala Leu Ala Arg Gln Asn Leu Asp Gln Leu Glu Ser Lys Leu Thr
    50                  55                  60

Thr Leu Ala Thr Pro Gly Asn Pro Glu Tyr Gly Lys Trp Leu Asp Gln
65                  70                  75                  80

Ser Asp Ile Glu Ser Leu Phe Pro Thr Ala Ser Asp Asp Ala Val Leu
                85                  90                  95

Gln Trp Leu Lys Ala Ala Gly Ile Thr Gln Val Ser Arg Gln Gly Ser
            100                 105                 110

Leu Val Asn Phe Ala Thr Thr Val Gly Thr Ala Asn Lys Leu Phe Asp
        115                 120                 125

Thr Lys Phe Ser Tyr Tyr Arg Asn Gly Ala Ser Gln Lys Leu Arg Thr
    130                 135                 140

Thr Gln Tyr Ser Ile Pro Asp His Leu Thr Glu Ser Ile Asp Leu Ile
145                 150                 155                 160

Ala Pro Thr Val Phe Phe Gly Lys Glu Gln Asn Ser Ala Leu Ser Ser
                165                 170                 175

His Ala Val Lys Leu Pro Ala Leu Pro Arg Arg Ala Ala Thr Asn Ser
            180                 185                 190

Ser Cys Ala Asn Leu Ile Thr Pro Asp Cys Leu Val Glu Met Tyr Asn
        195                 200                 205

Leu Gly Asp Tyr Lys Pro Asp Ala Ser Ser Gly Ser Arg Val Gly Phe
    210                 215                 220

Gly Ser Phe Leu Asn Glu Ser Ala Asn Tyr Ala Asp Leu Ala Ala Tyr
225                 230                 235                 240

Glu Gln Leu Phe Asn Ile Pro Pro Gln Asn Phe Ser Val Glu Leu Ile
                245                 250                 255

Asn Arg Gly Val Asn Asp Gln Asn Trp Ala Thr Ala Ser Leu Gly Glu
            260                 265                 270

Ala Asn Leu Asp Val Glu Leu Ile Val Ala Val Ser His Pro Leu Pro
        275                 280                 285

Val Val Glu Phe Ile Thr Gly Ala Leu Pro Pro Val Leu Arg Val Leu
    290                 295                 300

Ala Leu Gln Thr Gln Leu Pro Ser Ser Ser Gly Asp Phe Gln Leu Thr
305                 310                 315                 320
```

```
Val Pro Glu Tyr Tyr Ala Arg Arg Val Cys Asn Leu Ile Gly Leu Met
                325                 330                 335

Gly Leu Arg Gly Ile Thr Val Leu Glu Ser Ser Gly Asp Thr Gly Ile
            340                 345                 350

Gly Ser Ala Cys Met Ser Asn Asp Gly Thr Asn Lys Pro Gln Phe Thr
        355                 360                 365

Pro Thr Phe Pro Gly Thr Cys Pro Phe Ile Thr Ala Val Gly Gly Thr
    370                 375                 380

Gln Ser Tyr Ala Pro Glu Val Ala Trp Asp Gly Ser Ser Gly Gly Phe
385                 390                 395                 400

Ser Asn Tyr Phe Ser Arg Pro Trp Tyr Gln Ser Phe Ala Val Asp Asn
                405                 410                 415

Tyr Leu Asn Asn His Ile Thr Lys Asp Thr Lys Lys Tyr Tyr Ser Gln
            420                 425                 430

Tyr Thr Asn Phe Lys Gly Arg Gly Phe Pro Asp Val Ser Ala His Ser
        435                 440                 445

Leu Thr Pro Tyr Tyr Glu Val Val Leu Thr Gly Lys His Tyr Lys Ser
    450                 455                 460

Gly Gly Thr Ser Ala Ala Ser Pro Val Phe Ala Gly Ile Val Gly Leu
465                 470                 475                 480

Leu Asn Asp Ala Arg Leu Arg Ala Gly Lys Ser Thr Leu Gly Phe Leu
                485                 490                 495

Asn Pro Leu Leu Tyr Ser Ile Leu Ala Glu Gly Phe Thr Asp Ile Thr
            500                 505                 510

Ala Gly Ser Ser Ile Gly Cys Asn Gly Ile Asn Pro Gln Thr Gly Lys
        515                 520                 525

Pro Val Pro Gly Gly Gly Ile Ile Pro Tyr Ala His Trp Asn Ala Thr
    530                 535                 540

Ala Gly Trp Asp Pro Val Thr Gly Leu Gly Val Pro Asp Phe Met Lys
545                 550                 555                 560

Leu Lys Glu Leu Val Leu Ser Leu
                565

<210>  571
<211>  580
<212>  PRT
<213>  Aspergillus fumigatus
```

<400> 571

```
Met Tyr Pro Leu Asp Gly Ser Ala Arg Pro His Pro Pro Gly Thr Thr
1               5                  10                  15

Arg Leu Asn Ser Val Glu Pro Asp Lys Gln Ile Gly Phe Thr Val Leu
            20                  25                  30

Val Arg Pro Gln Thr Gly Ala Pro Arg Leu Pro Asp Leu Ala Gln Trp
        35                  40                  45

Gln Ala Ile Pro Ile Ala Glu Arg Gln Phe Leu Ser Thr Ala Gly Phe
    50                  55                  60

Glu Arg Thr Tyr Gly Ser Ser Glu Asp Asp Ile Val Ser Val Ala Ser
65                  70                  75                  80

Phe Leu Glu Lys Ala Gly Met Thr Ile Arg Ser Arg His Ala Gly Ala
                85                  90                  95

Gly Thr Val Glu Val Gln Ala Lys Thr Cys Gln Ile His Ser Val Phe
            100                 105                 110

Ala Val Gln Leu Leu Tyr Tyr Arg Gly Gln Leu Arg Pro Ala Ala Arg
        115                 120                 125

Lys Arg Arg Asp Asp Lys Gln Pro Ala Glu Glu Thr Tyr Ile Gly Phe
    130                 135                 140

Glu Gly Cys Ile Ser Leu Pro Ala Ala Leu His Asp Lys Val Ile His
145                 150                 155                 160

Ile Phe Gly Leu Asp Thr Arg Thr Phe Gly Ala Ser Gly Gly Tyr Ser
                165                 170                 175

Gly Asp Pro Pro Arg Ala Gln Arg Leu Ile Val Ala Glu Leu Ala Ala
            180                 185                 190

Leu Tyr Gly Phe Pro Ala Gly Val Asp Ala Ser Gln Gln Thr Ile Gly
        195                 200                 205

Ile Phe Ser Gly Glu Gly Asn Asp Asp Lys Gly Gln Ser Leu Ser Asn
    210                 215                 220

Tyr Arg Pro Ala Asp Val Ala Ala Tyr Phe Asn Asn Gln Thr Val Gly
225                 230                 235                 240

Tyr Asn Arg Ala Pro Thr Val Val Pro Val Ser Leu Thr Val Ala Asp
                245                 250                 255

Gln Thr Tyr Arg Asn Asp Pro Asp His Pro Thr Gln Glu Leu Ser Gln
```

```
            260                 265                 270

Asp Ile Met Thr Ala Ala Thr Ile Ala Gln Gly Cys Thr Val Asn Val
        275                 280                 285

Tyr Phe Ser Asp Leu Thr Glu Gln Gly Trp Leu Ala Phe Leu Thr Arg
    290                 295                 300

Val Leu Phe Pro Gln Gly Glu Glu Lys Arg Pro Thr Ile Val Ser Ile
305                 310                 315                 320

Ser Trp Thr Met Tyr Asp Glu Gln Thr Tyr Arg Asp Arg Leu Ser Phe
                325                 330                 335

Leu Phe Gln Arg Leu Ala Val Val Gly Thr Ser Val Phe Ala Ile Ala
            340                 345                 350

Gly Asp Trp Gly Ala Asn Asn Asn Ile Ile Asp Gly Gln Pro His Val
        355                 360                 365

Gly Trp Pro Gly Ser Asp Pro Trp Val Thr Cys Val Gly Gly Thr Val
    370                 375                 380

Val Gly Asn Val Arg Ser Ser Gly Ala Phe Thr Glu His Ala Trp Ser
385                 390                 395                 400

Asp Arg Asp Asn Pro Asp Ser Gln Phe Thr Ile Asp Gly His Leu Gly
                405                 410                 415

Val Thr Gly Gly Gly Met Ser Arg Val Phe Ala Thr Pro Pro Tyr Gln
            420                 425                 430

Leu Ser Ser Gly Ile Ser Ala Val Thr Asp Cys Asn Gly Glu Arg Trp
        435                 440                 445

Thr Gly Gly Arg Phe Ile Pro Asp Ile Thr Gly Met Val Gly Phe Arg
    450                 455                 460

Gly Phe Ile Val Asn Gly Lys Arg Asn Tyr Phe Ile Gly Thr Ser Cys
465                 470                 475                 480

Ser Thr Pro Leu Tyr Ala Gly Leu Phe Ala Ala Leu Ala Ser Ala Leu
                485                 490                 495

Gly Gly Gly Gly Glu Gly Gly Val Leu Phe Gly Pro Leu Asn Thr Val
            500                 505                 510

Leu Tyr Gln Ile Asp Arg Gly Val Tyr Arg Asp Ile Thr Phe Gly His
        515                 520                 525

Asn Asp Ser Gly Asp Met Pro Ala Cys Ala Tyr Phe Ala Ala Gly Glu
```

530 535 540

Gly Tyr Asp Thr Val Ser Gly Leu Gly Ser Val Asp Gly Arg Arg Thr
545 550 555 560

Leu Glu Glu Leu Arg Arg Ile Tyr Trp Pro Lys Thr Lys Gly Phe Gly
565 570 575

Cys Phe Arg Asn
580

<210> 572
<211> 454
<212> PRT
<213> Neurospora crassa

<400> 572

Met Arg Ala Thr Leu Val Val Val Leu Cys His Leu Ser Leu Ala Phe
1 5 10 15

Ala Leu Ala Ile Ser Pro Ala Ala Ser His Trp Lys Arg Ser Ala Arg
20 25 30

Leu Ala Ser Asp Gln Thr Ala Ser Glu Arg Tyr Ser Leu Pro Ser Arg
35 40 45

Val Ala Arg Tyr Ile Asp Tyr Val Leu Pro Ala Pro Asp Pro Asp Pro
50 55 60

Val Ser Ser Ala Pro Lys Ser Val Ala Val Gln Asp Pro Pro Thr Leu
65 70 75 80

Lys Gly Val Ile Gly Ala Arg Gln Thr Arg Asp Val Asp Cys Leu Gln
85 90 95

Tyr Ile Ala Pro Gln Cys Leu Arg Gln Leu Ala Trp Leu Ala Glu Asp
100 105 110

Leu Asp Met Phe Phe Gly Asp Phe Ala Pro Asp Leu Leu Thr Asn Phe
115 120 125

Asn Leu Glu Pro Asn Leu Asp Tyr Lys Tyr Thr Met Ala Met Ala Lys
130 135 140

Pro Ile Pro Val Thr Asn Ile Gln Val Gly Asp Phe Val Val Gln Gly
145 150 155 160

Asn Met Asn Ile Met Leu Ala Ala Phe Asn Ala His Tyr Cys Arg Thr
165 170 175

Gly Leu Asp Pro Gln Phe Asp Pro Val Tyr Pro Asn Pro Ala Pro Gly
180 185 190

```
Gly Tyr Asn Ala Ser Asp Cys Gly Thr His Val Pro Pro Arg Val Ile
        195                 200                 205

Ala Ile Met Tyr Ala Trp Asn Lys Ala Trp Tyr Ser Asp Ala Asp Phe
    210                 215                 220

Ala Ser Ile Phe Pro Ala Ser Asp Pro Trp Val Thr Ser Val Gly Gly
225                 230                 235                 240

Thr Gln Phe Leu Pro Val Val Ser Asn Gly Ser Ser Ser Thr Thr Ala
                245                 250                 255

Ser Ser Gly Met Pro Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
            260                 265                 270

Ser Ser Ser Ser Ser Ser Ser Ser Ser Leu Phe Pro Gly Glu Thr Ala
        275                 280                 285

Leu Asp Asp Asn Asn Thr Gly Ser Ser Gly Gly Ser Phe Ser Arg Leu
    290                 295                 300

Phe Pro Gly Pro Trp Tyr Gln Gly Asn Leu Thr Arg Glu Tyr Leu Ala
305                 310                 315                 320

Ser Ala Pro Gly Ala Ala Glu Leu Ala Arg Gln Gly Tyr Phe Asn Gly
                325                 330                 335

Ser Gly Arg Gly Tyr Pro Asp Ile Ser Ala Met Ala Arg Ser Phe Leu
            340                 345                 350

Val Ala Leu His Gly Gly Tyr His Ala Val Ser Gly Thr Ser Ala Ser
        355                 360                 365

Thr Pro Val Val Ala Ala Met Val Ala Lys Ile Asn Asp Ala Arg Leu
    370                 375                 380

His Ala Gly Lys Ser Thr Val Gly Phe Leu Asn Pro Val Leu Tyr Ser
385                 390                 395                 400

Ala Ala Ala Gly Lys Ala Gly Val Leu Arg Asp Val Pro Leu Gly Lys
                405                 410                 415

Asn His Asp Cys Gly Val Gly Glu Ala Phe Pro Ala Arg Arg Ala Trp
            420                 425                 430

Asp Ala Val Thr Gly Leu Gly Thr Pro Asp Phe Glu Lys Leu Lys Glu
        435                 440                 445

Leu Tyr Leu Gly Leu Pro
    450
```

<210> 573
<211> 652
<212> PRT
<213> Aspergillus oryzae

<400> 573

```
Met Arg Pro Leu Ser His Leu Ser Phe Phe Asn Gly Leu Leu Leu Gly
1               5                   10                  15

Leu Ser Ala Leu Ser Ala Ala Thr Ser Val Val His Glu Arg Arg Glu
            20                  25                  30

Ala Thr Ser Ser Asn Trp Val Lys Arg Ala Arg Val Asn Pro Ser Asp
        35                  40                  45

Lys His Val Val Arg Ile Gly Leu Thr Gln Ser Ser Leu Glu Glu Ala
    50                  55                  60

His Asp Leu Leu Met Asp Val Ser Asn Pro Ser Ser Pro Asn Tyr Ala
65                  70                  75                  80

Arg Phe Tyr Ser Ala Asp Glu Val Ala Ala Lys Phe Ala Pro Ser Thr
                85                  90                  95

Glu Thr Val Asn Glu Val Gln Asn Trp Leu Thr Glu Lys Gly Ile Asn
            100                 105                 110

Ala Ser Arg Val Ala Arg Thr Gln Asn His Gly Trp Leu Val Phe His
        115                 120                 125

Ala Thr Ser Lys Glu Ile Glu Asn Leu Phe Asp Thr Thr Tyr Tyr Glu
    130                 135                 140

Tyr His Asn Arg Lys Thr Gly Lys Lys Ala Ile Ala Cys Glu Gln Tyr
145                 150                 155                 160

His Val Pro Ala Ser Val Gln Lys His Ile Asp Tyr Val His Pro Gly
                165                 170                 175

Val Asn Leu Asn Pro Ser Ser Gly Lys Pro Ser Ser Ile Arg Arg Arg
            180                 185                 190

Ala Ala Ala Ser Lys Lys Thr Lys Leu Pro Ala Arg Gly Pro Arg Pro
        195                 200                 205

Ile Gln Gln His Asp Val Lys Gly Leu Asn Val Thr Asn Cys Asp Gln
    210                 215                 220

Leu Ile Thr Pro Glu Cys Ile Arg Ala Leu Tyr Lys Ile Pro Ser Ala
225                 230                 235                 240
```

```
Arg Ala Ala Pro His Pro Asn Asn Ser Leu Gly Ile Phe Glu Glu Gly
                245                 250                 255

Asp Tyr Tyr Ala Gln Glu Asp Leu Asp Leu Phe Phe Lys Thr Phe Ala
            260                 265                 270

Lys Asp Ile Pro Gln Gly Thr His Pro Ile Pro Ala Phe Ile Asp Gly
        275                 280                 285

Ala Glu Ala Pro Val Pro Val Thr Lys Ala Gly Gly Glu Ser Asp Leu
    290                 295                 300

Asp Phe Glu Leu Ala Tyr Pro Ile Val His Pro Gln Ser Ile Thr Leu
305                 310                 315                 320

Tyr Gln Thr Asp Asp Ala Asn Trp Ala Ser Asn Thr Thr Gly Phe Leu
                325                 330                 335

Asn Thr Phe Leu Asp Ala Leu Asp Gly Ser Tyr Cys Thr Tyr Cys Ala
            340                 345                 350

Tyr Gly Glu Cys Gly Asn Asp Pro Ser Leu Asp Pro Val Tyr Pro Asp
        355                 360                 365

Asp Ala Gly Tyr Asp Gly Gln Leu Met Cys Gly Val Phe Lys Pro Thr
    370                 375                 380

Asn Val Ile Ser Val Ser Tyr Gly Glu Gln Glu Asn Asp Leu Pro Ala
385                 390                 395                 400

Asn Tyr Gln Gln Arg Gln Cys Met Glu Phe Leu Lys Leu Gly Leu Gln
                405                 410                 415

Gly Val Ser Val Leu Phe Ala Ser Gly Asp Asn Gly Val Ala Gly Pro
            420                 425                 430

Pro Gly Asp Gly Asn Ser Val Asn Gly Cys Leu Asn Asn Gly Thr Val
        435                 440                 445

Phe Ser Pro Ala Phe Pro Asn Ser Cys Pro Tyr Ile Thr Asn Val Gly
    450                 455                 460

Ala Thr Lys Val Tyr Pro Gly Tyr Thr Val Ser Gln Pro Glu Ser Ala
465                 470                 475                 480

Val Tyr Asp Pro Asp Gly Leu Tyr Ser Tyr Ala Ser Gly Gly Gly Phe
                485                 490                 495

Ser Asn Ile Tyr Pro Ile Pro Asp Tyr Gln Ala Glu Ala Val Ala Thr
            500                 505                 510
```

```
Tyr Phe Lys Asp His Asn Pro Pro Tyr Pro Tyr Tyr Glu Gly Ala Glu
        515                 520                 525

Asn Leu Gly Lys Asn Gly Gly Leu Tyr Asn Arg Leu Gly Arg Gly Tyr
    530                 535                 540

Pro Asp Val Ala Ala Asn Gly Asp Asn Ile Ala Val Phe Asn Gly Gly
545                 550                 555                 560

Glu Phe Gly Ser Ser Gly Gly Thr Ser Ala Ser Thr Pro Ile Phe Ala
                565                 570                 575

Ser Ile Ile Asn Arg Ile Ile Asp Glu Arg Leu Ala Val Gly Lys Gly
            580                 585                 590

Pro Val Gly Phe Ile Asn Pro Val Leu Tyr Lys Asn Pro Ser Val Leu
        595                 600                 605

Asn Asp Ile Thr Asn Gly Thr Asn Pro Gly Cys Gly Thr Asp Gly Phe
    610                 615                 620

Ser Thr Ala Pro Gly Trp Asp Pro Ala Thr Gly Leu Gly Thr Pro Asn
625                 630                 635                 640

Tyr Pro Lys Met Leu Lys Leu Trp Leu Asp Leu Pro
                645                 650
```

<210> 574
<211> 243
<212> PRT
<213> Myceliophthora thermophila

<400> 574

```
Met Lys Leu Ala Val Leu Ile Ala Thr Thr Ala Gly Leu Ala Ala Ala
1               5                   10                  15

Leu Pro Gln Gly Val Ala Arg Arg Gly Val Gly Arg Pro Leu His His
            20                  25                  30

Ser Gly Pro Asn Ile Arg Asn Thr Thr Tyr Pro Gln Tyr Ser Ser Asn
        35                  40                  45

Trp Ala Gly Ala Val Gln Ile Gly Thr Gly Phe Thr Ser Val Tyr Gly
    50                  55                  60

Thr Ile Thr Val Pro Ser Val His Asp Arg Asn Pro Asn Ala Ala Ala
65                  70                  75                  80

Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Gln Gln Ala Ile Leu
                85                  90                  95
```

```
Gln Thr Gly Val Ser Phe Tyr Gly Asp Gly Ser Phe Asp Ala Trp Tyr
            100                 105                 110

Glu Trp Ile Pro Asp Tyr Ala Tyr Ser Phe Ser Asn Phe Arg Leu Ser
        115                 120                 125

Ala Gly Asp Gln Ile Arg Met Ser Val Glu Ala Ser Ser Lys Arg Ala
    130                 135                 140

Gly Val Ala Thr Leu Glu Asn Leu Ser Thr Gly Gln Lys Val Ser His
145                 150                 155                 160

Thr Phe Thr Ser Thr Pro Ser Thr Leu Cys Glu Thr Asn Ala Glu Trp
                165                 170                 175

Ile Val Glu Asp Phe Gln Glu Gly Ser Ser Leu Val Pro Phe Ala Asp
            180                 185                 190

Phe Gly Thr Val Thr Phe Thr Asp Ala Tyr Ala Thr Gly Ser Ser Gly
        195                 200                 205

Thr Val Thr Pro Ser Gly Ala Thr Ile Ile Asp Ile Lys Gln Gly Asn
    210                 215                 220

Glu Val Leu Thr Asn Cys Ala Thr Ser Gly Ser Asp Leu Thr Cys Ser
225                 230                 235                 240

Tyr Thr Gly
```

<210> 575
<211> 256
<212> PRT
<213> Aspergillus oryzae

<400> 575

```
Met Lys Leu Phe Ala Ile Leu Ser Ser Thr Val Leu Ala Ser Val Ala
1               5                   10                  15

Leu Ala Ser Pro Leu Thr Leu Glu Arg Arg Ala Arg Asn Ala Ala Arg
            20                  25                  30

Leu Gln Ala Arg Val Ala Gln Arg His Ser Asn Leu Pro Phe Lys Ala
        35                  40                  45

Gly Thr Asn Glu Ile Leu His Leu Asn Glu Thr Thr His Glu Glu Tyr
    50                  55                  60

Ser Ser Asn Trp Ala Gly Ala Val Leu Ile Gly Ser Gly Leu His Val
65                  70                  75                  80

Arg Asp Arg Asp Glu Gln Tyr Cys Ala Thr Ala Trp Val Gly Ile Asp
```

85 90 95

Gly Asp Thr Cys Gln Ser Ala Ile Leu Gln Thr Gly Val Asp Phe Cys
100 105 110

Ile Asp Ser Ser Gly Thr Thr Ser Asp Ala Trp Tyr Glu Trp Phe Pro
115 120 125

Asp Tyr Ser His Asp Phe Ser Gly Ile Ser Ile Ser Ala Gly Asp Lys
130 135 140

Val Lys Val Thr Val Asp Ala Ser Ser Lys Thr Ala Gly Thr Ala Ile
145 150 155 160

Val Glu Asn Leu Thr Thr Gly Lys Thr Val Ser His Thr Phe Ala Gly
165 170 175

Gln Asp Asp Asn Ala Leu Cys Glu Thr Asn Ala Glu Trp Ile Met Glu
180 185 190

Asp Phe Ser Ser Phe Leu Ser Leu Val Pro Phe Ala Asn Phe Gly Thr
195 200 205

Val Thr Phe Thr Asp Ile Ser Ala Thr Ser Gly Asp Ser Ser Val Gly
210 215 220

Ala Ser Asn Ala Thr Ile Ile Asp Ile Gln Gln Asn Asn Lys Thr Leu
225 230 235 240

Thr Ser Ser Ser Ala Ser Asp Thr Glu Val Thr Ile Lys Tyr Ile Gly
245 250 255

<210> 576
<211> 288
<212> PRT
<213> Neurospora crassa

<400> 576

Met Lys Leu Leu Ser Pro Ala Ile Ser Leu Leu Gly Val Ile Ser Gln
1 5 10 15

Pro Ile Leu Ala Gln Phe Thr Phe Thr Ser Thr Val Glu His Asn Gly
20 25 30

Val Pro Val Pro Gln Ala Glu Thr Asp Leu Lys Pro Phe Lys Pro Gly
35 40 45

Thr Leu Gly Arg Ile Arg Ser Arg Thr Asp Asp Asp Ser Gly Pro Glu
50 55 60

Ile Gly Thr Thr Thr Leu Arg Arg Val Lys Arg Thr Asn Pro Thr Ala
65 70 75 80

```
Asn Ser Asn Asn Trp Cys Gly Ser Val Gln Ser Thr Thr Ser Ser Asn
                85                  90                  95

Gln Ile Lys Leu Val His Gly Thr Phe Gln His Pro Thr Cys Thr Gln
            100                 105                 110

Arg Pro Gly Val Thr Gln Tyr Pro Gln Ala Ala Ala Ala Trp Ile Gly
        115                 120                 125

Ile Asp Gly Asp Ser Trp Thr Ser Ala Leu Leu Gln Ala Gly Thr Val
    130                 135                 140

Cys Lys Ile Asn Asn Ser Thr Gly Ile Val Glu Asn Glu Val Trp Trp
145                 150                 155                 160

Gln Trp Val Pro Asn Gly Ala Tyr Thr Ile Thr Asn Ile Pro Val Phe
                165                 170                 175

Ala Gly Asp Trp Phe Asp Ile Thr Ile Asn Thr Thr Ser Ser Thr Ala
            180                 185                 190

Ala Thr Ile Lys Ile Met Ser Asn Arg Gly Tyr Thr Tyr Ser Val Asn
        195                 200                 205

Ala Trp Gln Gly Ala Thr Leu Ala Arg Val Asp Ala Asp Trp Val Val
    210                 215                 220

Glu Arg Pro Tyr Tyr Gly Ser Thr Leu Ala Gly Phe Ala Gln Phe Thr
225                 230                 235                 240

Gln Val Trp Phe Gln Asn Ala Tyr Ala Thr Leu Thr Ser Gly Thr Ser
                245                 250                 255

Ser Leu Gly Ile Thr Gly Ala Lys Gln Tyr Gln Ile Pro Gly Gly Cys
            260                 265                 270

Ala Ser Ala Glu Tyr Asp Asn Ser Lys Leu Tyr Ala Ala Val Ala Ala
        275                 280                 285


<210>  577
<211>  282
<212>  PRT
<213>  Aspergillus niger

<400>  577

Met Lys Phe Ser Thr Ile Leu Thr Gly Ser Leu Phe Ala Thr Ala Ala
1               5                   10                  15

Leu Ala Ala Pro Leu Thr Glu Lys Arg Arg Ala Arg Lys Glu Ala Arg
            20                  25                  30
```

```
Ala Ala Gly Lys Arg His Ser Asn Pro Pro Tyr Ile Pro Gly Ser Asp
        35                  40                  45

Lys Glu Ile Leu Lys Leu Asn Gly Thr Thr Asn Glu Glu Tyr Ser Ser
    50                  55                  60

Asn Trp Ala Gly Ala Val Leu Ile Gly Asp Gly Tyr Thr Lys Val Thr
65                  70                  75                  80

Gly Glu Phe Thr Val Pro Ser Val Ser Ala Gly Ser Ser Gly Ser Ser
                85                  90                  95

Gly Tyr Gly Gly Gly Tyr Gly Tyr Trp Lys Asn Lys Arg Gln Ser Glu
            100                 105                 110

Glu Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Cys Glu
        115                 120                 125

Thr Ala Ile Leu Gln Thr Gly Val Asp Phe Cys Tyr Glu Asp Gly Gln
    130                 135                 140

Thr Ser Tyr Asp Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp
145                 150                 155                 160

Phe Ser Asp Ile Thr Ile Ser Glu Gly Asp Ser Ile Lys Val Thr Val
                165                 170                 175

Glu Ala Thr Ser Lys Ser Ser Gly Ser Ala Thr Val Glu Asn Leu Thr
            180                 185                 190

Thr Gly Gln Ser Val Thr His Thr Phe Ser Gly Asn Val Glu Gly Asp
        195                 200                 205

Leu Cys Glu Thr Asn Ala Glu Trp Ile Val Glu Asp Phe Glu Ser Gly
    210                 215                 220

Asp Ser Leu Val Ala Phe Ala Asp Phe Gly Ser Val Thr Phe Thr Asn
225                 230                 235                 240

Ala Glu Ala Thr Ser Gly Gly Ser Thr Val Gly Pro Ser Asp Ala Thr
                245                 250                 255

Val Met Asp Ile Glu Gln Asp Gly Ser Val Leu Thr Glu Thr Ser Val
            260                 265                 270

Ser Gly Asp Ser Val Thr Val Thr Tyr Val
        275                 280

<210>  578
<211>  269
<212>  PRT
```

<213> Penicillium chrysogenum

<400> 578

```
Met Lys Phe Ala Val Ala Ile Phe Ser Thr Thr Leu Leu Ala Thr Ser
1               5                   10                  15

Val Ile Ala Ser Pro Leu Ala Ser Gln Arg Glu Ala His Ser Glu Ile
            20                  25                  30

Gln Arg Ser Val Gln Gly Pro Arg Arg Thr Thr Arg Pro Arg Asn Pro
        35                  40                  45

Gly Thr Ser Glu Val Leu Tyr Leu Asn Gln Thr Ser Gln Glu Thr Tyr
    50                  55                  60

Ser Ser Lys Trp Ala Gly Ala Val Leu Ile Gly Thr Gly Tyr Thr Ser
65                  70                  75                  80

Val Ser Gly Glu Ile Thr Val Pro Ile Pro His Leu Pro Asn Gly Ala
                85                  90                  95

Asn Ser Tyr Thr Asn Tyr Cys Ala Ser Ala Trp Val Gly Ile Asp Gly
            100                 105                 110

Asp Thr Cys Ser Thr Ala Ile Leu Gln Ala Gly Ile Asp Phe Cys Ile
        115                 120                 125

Gln Gly Gly Phe Ile Ser Tyr Asn Ala Trp Tyr Glu Trp Tyr Pro Asp
    130                 135                 140

Tyr Ala His Asn Phe Ser Asn Ile Gln Ile Leu Pro Gly Asp Val Ile
145                 150                 155                 160

Lys Met Thr Val Asp Ala Thr Ser Lys Ser Ser Gly Phe Val Thr Ile
                165                 170                 175

Glu Asn Leu Ser Thr Gly Val Ser Val Met His Ile Phe Pro Tyr Ser
            180                 185                 190

Leu Arg Gly Asp Leu Cys Glu Phe Asn Ala Glu Trp Ile Val Glu Asp
        195                 200                 205

Phe Ser Val Asn Asn Ala Leu Ala Pro Phe Ala Asp Phe Gly Thr Val
    210                 215                 220

Val Phe Ser Asn Ala Val Ala Ser Arg Gly Gly Asp Thr Tyr Gly Pro
225                 230                 235                 240

Leu Gly Ala Thr Ile Met Asp Ile Tyr Gln Asp Arg Ile Leu Thr Ser
                245                 250                 255
```

Ser Ser Val Thr Arg Asp Thr Val Thr Ile Ser Tyr Ile
260 265

<210> 579
<211> 310
<212> PRT
<213> Aspergillus niger

<400> 579

Met Gly Gly Arg Asp Val Ala Ile Leu Ser Arg His Phe Ala Val Thr
1 5 10 15

Ser Ser Gln Ser Val Asn Gly Val Val Ser Gly Met Phe Gln His Thr
20 25 30

Val Thr Ser Ser Pro Ser Phe Thr Thr Asn Gln Phe Phe Lys Lys Lys
35 40 45

Phe Thr Ala Ala Ile Ala Thr Ala Ile Phe Ala Ser Val Ala Val Ala
50 55 60

Ala Pro Gln Arg Gly Leu Glu Ala Arg Leu Lys Ala Arg Gly Ser Ser
65 70 75 80

Lys Gly Ser Arg Pro Leu Gln Ala Val Ala Arg Pro Ala Ser Thr Lys
85 90 95

Asn Gln Thr Asn Val Glu Tyr Ser Ser Asn Trp Ser Gly Ala Val Leu
100 105 110

Val Glu Pro Pro Ser Ala Ala Ala Thr Tyr Thr Ala Val Thr Gly Thr
115 120 125

Phe Thr Val Pro Glu Pro Thr Gly Asn Ser Gly Gly Ser Gln Ala Ala
130 135 140

Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Tyr Gly Asn Ala Ile Leu
145 150 155 160

Gln Thr Gly Val Asp Phe Thr Val Thr Asp Gly Glu Ala Ser Phe Asp
165 170 175

Ala Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp Phe Ser Gly Ile
180 185 190

Asp Ile Ser Ala Gly Asp Glu Ile Val Ala Ile Val Glu Ser Tyr Thr
195 200 205

Ser Thr Thr Gly Ile Ala Ile Ile Glu Asn Lys Ser Thr Gly Gln Lys
210 215 220

Val Ser Lys Glu Leu Ser Ser Ser Ser Ser Leu Gly Gly Gln Asn Ala

225 230 235 240

Glu Trp Ile Val Glu Asp Phe Glu Glu Asn Gly Ser Leu Val Asn Leu
245 250 255

Val Asp Phe Gly Thr Val Thr Phe Thr Gly Ala Val Ala Lys Ala Ala
260 265 270

Gly Gly Glu Ser Val Gly Leu Thr Asp Ala Thr Ile Ile Glu Ile Glu
275 280 285

Glu Asn Gly Gln Val Val Thr Asp Val Thr Ile Asp Ser Asp Ser Glu
290 295 300

Val Thr Ile Thr Tyr Glu
305 310

<210> 580
<211> 264
<212> PRT
<213> Aspergillus oryzae

<400> 580

Met Lys Phe Thr Thr Ala Ile Ala Thr Ala Ile Leu Ala Gly Ser Ala
1 5 10 15

Leu Ala Ala Pro Glu Arg Gly Leu Ala Ala Arg Val Lys Ala Arg Ala
20 25 30

Ala Gly Ala Arg Gly Ser Arg Pro Leu Gln Thr Val Gln Lys Pro Ala
35 40 45

Gly Val Thr Asn Lys Thr Asn Val Glu Tyr Ser Ser Asn Trp Ser Gly
50 55 60

Ala Val Leu Glu Asn Pro Pro Ser Ala Ser Ala Thr Tyr Thr Ala Val
65 70 75 80

Thr Gly Thr Phe Thr Val Pro Glu Pro Thr Gly Gly Ser Gly Ser Ser
85 90 95

Ser Ala Ser Ala Trp Val Gly Ile Asp Gly Asp Thr Tyr Ser Glu Ala
100 105 110

Ile Leu Gln Thr Gly Val Asp Phe Thr Val Thr Asn Gly Gln Ala Ser
115 120 125

Phe Asp Ala Trp Tyr Glu Trp Leu Pro Asp Tyr Ala Tyr Asp Phe Thr
130 135 140

Gly Ile Asp Ile Ser Ala Gly Asp Val Ile Val Ala Ile Val Glu Ser
145 150 155 160

```
Tyr Ser Ser Thr Ser Gly Ile Ala Ile Ile Glu Asn Gln Ser Thr Gly
                165                 170                 175

Gln Lys Val Thr Lys Glu Leu Ser Ser Ser Ser Pro Leu Gly Gly Ile
            180                 185                 190

Asn Ala Glu Trp Ile Val Glu Asp Tyr Glu Glu Asn Gly Ser Leu Val
        195                 200                 205

Asp Leu Val Asp Phe Gly Thr Val Thr Phe Thr Gly Ala Glu Ala Lys
    210                 215                 220

Ala Ala Gly Gly Gln Thr Val Gly Leu Thr Asp Ala Thr Ile Ile Glu
225                 230                 235                 240

Ile Thr Gln Asn Asn Lys Val Val Thr Asp Val Thr Ile Asp Ser Asp
                245                 250                 255

Ser Glu Val Thr Ile Thr Tyr Val
            260


<210>  581
<211>  279
<212>  PRT
<213>  Aspergillus niger

<400>  581

Met Lys Phe Thr Asn Tyr Leu Leu Thr Thr Ala Thr Leu Ala Ser Ser
1               5                   10                  15

Val Leu Ala Ala Pro Ala Pro Arg Thr Gly Leu Glu Asp Arg Leu Arg
            20                  25                  30

Ala Arg Ser Leu Gln Arg Gln Ser His Pro Leu Ala Pro Ile Pro Leu
        35                  40                  45

Asp Thr Ser Thr Lys Glu Asn Ser Arg Leu Leu Glu Ala Asp Glu Asn
    50                  55                  60

Thr Thr His Val Thr Tyr Ser Ser Asn Trp Ala Gly Ala Val Arg Glu
65                  70                  75                  80

Gln Pro Pro Pro Gln Gly Thr Tyr Ser Ala Val Ser Ala Thr Phe Arg
                85                  90                  95

Val Pro Glu Pro Thr Ala Gln Gly Gly Ser Gly Thr Gln Ala Gly Ser
            100                 105                 110

Ala Trp Val Gly Ile Asp Gly Asp Thr Tyr Ser Asn Ala Ile Leu Gln
        115                 120                 125
```

```
Thr Gly Val Asp Phe Tyr Val Glu Asn Gly Gln Thr Tyr Asn Asp Ala
    130                 135                 140

Trp Tyr Glu Trp Tyr Pro Asp Tyr Ala Tyr Asp Phe Asp Leu Asp Val
145                 150                 155                 160

Ser Thr Gly Asp Thr Ile Val Ala Lys Val Glu Ala Ile Ser Pro Ser
                165                 170                 175

Gln Gly Val Ala Thr Ile Glu Asn Ile Ser Thr Gly Lys Lys Ala Thr
            180                 185                 190

Gln Thr Ile Arg Ala Pro Ala Ala Thr Ala Thr Leu Ala Gly Gln Asn
        195                 200                 205

Ala Asp Trp Ile Val Glu Asp Phe Gln Ser Gly Asp Ser Met Val Asp
    210                 215                 220

Leu Ala Gly Phe Gly Glu Ile Ser Phe Trp Gly Val Gln Ala Gln Gly
225                 230                 235                 240

Gly Gly Ser Thr Trp Gly Val Asp Asp Ala Thr Ile Val Glu Leu Lys
                245                 250                 255

Gln Gly Asn Glu Val Leu Thr Asp Val Glu Val Gln Ser Asp Ser Ala
            260                 265                 270

Phe Thr Val Lys Tyr Thr Ser
        275


<210>  582
<211>  279
<212>  PRT
<213>  Aspergillus nidulans

<400>  582

Met Lys Leu Ser Leu Thr Ser Ser Leu Leu Thr Thr Thr Thr Leu Leu
1               5                   10                  15

Gly Ser Ala Leu Ser Leu Pro Gln Thr Ser Asn Leu Val Ser Arg Ile
            20                  25                  30

Gln Ala Arg Ser Leu Asn Arg Gln Ser His Pro Leu Thr Arg Gln Asp
        35                  40                  45

Gly Gly His Ser Gly Ser Gln Thr Gly Phe Arg Met Ala Ser Thr Ala
    50                  55                  60

Ala Val Ala Tyr Ser Asn Asn Trp Ala Gly Val Val Arg Glu Glu Ala
65                  70                  75                  80
```

```
Pro Pro Gly Gly Pro Tyr Thr Ala Val Ser Ala Thr Phe Thr Val Pro
                85                  90                  95

Lys Pro Thr Ala Ala Pro Asn Thr Ala Gly Leu Gln Ala Gly Ser Ala
            100                 105                 110

Trp Val Gly Ile Asp Gly Asp Thr Tyr Ser Gly Ala Ile Leu Gln Thr
        115                 120                 125

Gly Val Asp Phe Tyr Ile Asp Asn Gly Arg Val Tyr Asn Asp Ala Trp
    130                 135                 140

Phe Glu Trp Phe Pro Asp Tyr Ala Tyr Asp Phe Asn Leu Ala Ile Asn
145                 150                 155                 160

Thr Gly Asp Val Ile Val Ala Lys Val Glu Ala Leu Ser Pro Ser Asn
                165                 170                 175

Gly Val Ala Ile Ile Glu Asn Lys Asn Thr Gly Gln Thr Ala Thr Gln
            180                 185                 190

Thr Ile Ser Ala Pro Lys Ala Asp Ala Thr Leu Lys Gly Val Asn Ala
        195                 200                 205

Asp Trp Ile Val Glu Asp Phe Gln Ser Gly Asp Lys Val Val Ala Leu
    210                 215                 220

Ala Asp Phe Glu Gln Val Thr Phe Thr Gly Cys Glu Ala Lys Ala Gln
225                 230                 235                 240

Asn Gly Asp Ser Leu Gly Leu Asp Gly Ser Thr Ile Ile Glu Leu Lys
                245                 250                 255

Gln Asn Asn Lys Val Leu Thr Glu Val Thr Val Lys Gly Asn Asn Glu
            260                 265                 270

Leu Thr Val Ala Ser Lys Met
        275


<210>  583
<211>  271
<212>  PRT
<213>  Aspergillus oryzae

<400>  583

Met Lys Pro Thr His Ala Tyr Leu Thr Ala Ala Leu Ile Ser Gly Ala
1               5                   10                  15

Leu Ala Ala Pro Gly Ser Thr Leu Ala Gln Arg Met Arg His Arg Ser
            20                  25                  30

Leu Asp His Leu Thr Leu Pro Leu Gln Gly Glu Gly Ser Ala Thr Asp
```

35 40 45

Ser Glu Ala Arg Val Ala Gly Ala Ala Val Gln Tyr Ser Asn Asn Trp
50 55 60

Ala Gly Val Val Arg Glu Gln Ala Pro Pro Glu Gly Pro Tyr Thr Ala
65 70 75 80

Val Ser Ala Thr Phe Thr Val Pro Ser Ala Thr Ala Val Ala Asn Gln
85 90 95

Asn Gly Val Gln Ala Gly Ser Val Trp Val Gly Ile Asp Gly Asp Thr
100 105 110

Tyr Ala Gly Ala Ile Leu Gln Ala Gly Val Asp Phe Tyr Ser Asp Pro
115 120 125

Thr Gln Gln Asn His Ala Trp Phe Glu Trp Tyr Pro Ala Tyr Ala Thr
130 135 140

Asn Phe Pro Asn Ile Glu Val Asn Ala Gly Asp Thr Ile Val Ser Thr
145 150 155 160

Val Arg Ser Asn Ser Pro Ser Glu Gly Ile Ala Ile Ile Glu Asn Lys
165 170 175

Ser Thr Gly Gln Thr Val Ser Gln Thr Val Thr Ala Pro Glu Pro Thr
180 185 190

Ala Thr Leu Ala Gly Gln Asn Ala Glu Trp Ile Val Glu Asp Phe Gln
195 200 205

Ser Gly Asp Thr Met Val Val Leu Ala Asn Phe Gly Glu Val Glu Phe
210 215 220

Ser Gly Ala Gln Ala Glu Ala Gly Asn Ala Lys Phe Gly Leu Lys Gly
225 230 235 240

Gly Glu Val Ile Glu Leu Lys Gln Asn Asn Lys Val Leu Thr Gln Thr
245 250 255

Glu Val Thr Gly Asp Gln Asp Met Thr Val Lys Phe Ile Gly Ala
260 265 270

<210> 584
<211> 270
<212> PRT
<213> Penicillium chrysogenum

<400> 584

Met Lys Phe Thr Ser Thr Thr Ile Leu Ala Thr Ala Ile Leu Ala Gly
1 5 10 15

```
Thr Ser Phe Ala Ala Pro Arg Ser Gly Leu Ile Asp Arg Leu Gln Ser
            20                  25                  30

Arg Gly Thr Leu Pro Arg Gln Ser Leu Pro Asp Glu Glu Lys Gly Val
        35                  40                  45

Leu Leu Lys Glu Ala Ala Ala Gly Ala Asn Ala Gln Tyr Ser Lys Asn
    50                  55                  60

Trp Ala Gly Val Val Arg Glu Gln Pro Pro Pro Ser Gly Thr Tyr Ser
65                  70                  75                  80

Ala Val Ser Ala Thr Phe Thr Val Pro Glu Pro Thr Ala Thr Asn Asp
                85                  90                  95

Ser Gly Glu Met Gln Ala Val Ser Ala Trp Val Gly Ile Asp Gly Asp
            100                 105                 110

Thr Tyr Thr Lys Ala Ile Leu Gln Thr Gly Ile Asp Thr Tyr Ile Gln
        115                 120                 125

Asp Gly Lys Lys Thr Phe Asp Ala Trp Tyr Glu Trp Tyr Pro Leu Ser
    130                 135                 140

Ala Glu Asn Phe Asp Leu Ala Leu Ser Ala Gly Asp Val Ile Val Ala
145                 150                 155                 160

Lys Val Glu Thr Tyr Ser Pro Ser Lys Gly Ala Ala Ile Ile Glu Asn
                165                 170                 175

Lys Ser Ser Gly Gln Ser Val Thr Lys Thr Leu Ser Ala Pro Ser Ala
            180                 185                 190

Asp Ala Thr Leu Ala Gly Gln Asn Ala Glu Trp Ile Val Glu Asp Phe
        195                 200                 205

Asn Thr Gly Asn Ser Met Val Pro Leu Val Asn Phe Asn Arg Val Asp
    210                 215                 220

Phe Thr Gly Ala Gln Ala Glu Ala Gly Gly Ala Lys Tyr Gly Val Asn
225                 230                 235                 240

Asn Ala Ala Val Leu Asp Ile Gln Gln Asn Gly Asp Val Lys Ala His
                245                 250                 255

Val Glu Ile Gln Ser Asp Thr Glu Phe Phe Val Thr Tyr Gln
            260                 265                 270

<210>  585
<211>  285
```

<212> PRT
<213> Myceliophthora thermophila

<400> 585

Met Trp Ser Ile Val Arg Ser Leu Ser Leu Ala Ser Leu Ile Ser Ser
1 5 10 15

Ala Cys Thr Val Thr Ala Gln Leu Ser Phe Val Ala Ser Val Lys Gln
20 25 30

His Gly Lys Asp Val Asp Ala Ser Gly Leu Ser Phe Val Arg Ile Pro
35 40 45

Pro Leu Glu His Arg Trp His Ala Ser Arg Pro Arg Arg Gly Gln Asn
50 55 60

Asn Arg Thr Val Glu Arg Asp Ala Val Ser Tyr Ser Ala Asn Trp Cys
65 70 75 80

Gly Ala Ser Gln His Ala Ser Asp Ser Asp Gly Ile Lys Ser Val Leu
85 90 95

Gly Tyr Phe Thr Ala Pro Asp Leu Thr Leu Arg Pro Gly Thr Pro Ala
100 105 110

Pro Gln Phe Ala Ala Ala Trp Val Gly Ile Asp Gly Ala Ala Cys Asn
115 120 125

Thr Thr Leu Leu Gln Ala Gly Val Thr Thr Ile Val Asn Ser Asp Gly
130 135 140

Gly Gln Ser Ala Ser Ala Trp Trp Glu Trp Tyr Pro Glu Ala Ser Tyr
145 150 155 160

Thr Ile Ser Gly Leu Lys Val Lys Ala Gly Glu Trp Met Ser Val Asn
165 170 175

Ile Thr Thr Lys Asp Ala Ser Ser Ala Ile Leu Val Ile Glu Asn Ala
180 185 190

Asp Thr Gly Thr Ser Val Thr Leu Glu Leu Asn Asn Gly Pro Gln Leu
195 200 205

Cys Arg Arg Asp Ala Glu Trp Ile Leu Glu Asp Phe Tyr Glu Ser Gly
210 215 220

Lys Gln Val Ala Leu Ala Asn Phe Ala Asp Leu Trp Phe Val Asp Ser
225 230 235 240

Gly Ala Thr Thr Val Gly Gly Lys Asn Val Gly Phe Asp Gly Ala Thr
245 250 255

```
Met Val His Leu Arg Asp Glu Asn Gly Asn Val Leu Cys Ser Pro Glu
            260                 265                 270

Pro Tyr Asp Asn Ser Asn Phe Val Val Val Ser Lys Pro
        275                 280                 285
```

<210> 586
<211> 293
<212> PRT
<213> Aspergillus oryzae

<400> 586

```
Met Lys Phe Pro Ser Ser Leu Ala Leu Thr Ala Leu Leu Thr Gly Thr
1               5                   10                  15

Ala Leu Ala Gly Pro His Gly Gln Gly Leu Arg Ala Arg Arg Phe Gln
            20                  25                  30

Gly Pro Gly Trp Leu Gly Glu Ile Asp Leu Asp Ser Pro Ser Glu Ala
        35                  40                  45

Gln Ala Glu Gln Pro Asn Ala Gln Val Thr Pro Ala Pro Gln Ala Lys
    50                  55                  60

Ser Lys Ala Ile Ala His Ser Gln Ala Gln Ser Glu Asp Asp Tyr Leu
65                  70                  75                  80

Ile Asn Glu Asn Trp Ala Gly Ala Val Gln Thr Thr Ala Pro Ala Ala
                85                  90                  95

Ser Ala Thr Tyr Ser Tyr Val Ala Ala Thr Phe Thr Leu Pro Ser Val
            100                 105                 110

Thr Pro Thr Ala Ala Ser Ser Ser Gln Thr Gln Ala Ala Ser Phe Trp
        115                 120                 125

Val Gly Ile Asp Gly Ala Thr Ser Gly Asp Ala Ile Trp Gln Ala Gly
    130                 135                 140

Val Asp Ile Tyr Val Gln Asn Gly Lys Pro Ser Phe Ala Gly Trp Tyr
145                 150                 155                 160

Glu Trp Tyr Pro Ala Asn Ser Val Asn Ile Asp Leu Glu Phe Asn Phe
                165                 170                 175

Gly Asp Val Val Phe Thr Ser Val Glu Ser Thr Ser Asn Ser Glu Gly
            180                 185                 190

Val Ala Val Ile Glu Asn Leu Thr Thr Gly Lys Asn Val Thr Val Thr
        195                 200                 205
```

```
Ala Ser Ala Pro Ala Thr Ala Thr Leu Thr Gly Gln Asn Ala Glu Trp
    210                 215                 220

Ile Leu Glu Asp Leu Ala Val Asp Gly Asp Gly Leu Thr Phe Val Asp
225                 230                 235                 240

Phe Gly Glu Ala Thr Phe Thr Gly Cys Val Ala Lys Ala Gly Gly Lys
                245                 250                 255

Glu Tyr Gly Leu Gly Gly Ser Ala Leu Tyr Ala Val Gln Asp Arg Ser
            260                 265                 270

Ser Asn Thr Val Gln Ala Val Pro Thr Ile Val Ser Asp Ser Glu Leu
        275                 280                 285

Lys Val Thr Tyr Gln
    290
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<210> 587
<211> 307
<212> PRT
<213> Myceliophthora thermophila

<400> 587

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Met Lys Pro Thr Val Leu Phe Thr Leu Leu Ala Ser Gly Ala Tyr Ala
1               5                   10                  15

Ala Ala Thr Pro Ala Ile Pro Gly Tyr Ser Pro Arg Thr Arg Gly Met
            20                  25                  30

Asn Pro His His His Ala Pro Leu Arg Leu Leu His Thr Phe Thr Pro
        35                  40                  45

Ile Ser Thr Ser Gly Lys Ser Phe Arg Leu Leu Ala Ser Ser Thr Glu
    50                  55                  60

Ser Thr Lys Gly Gly Ala Ile Leu Gly Leu Pro Asp Asn Asp Leu Ser
65                  70                  75                  80

Thr Val Arg Thr Thr Ile Arg Ile Pro Ala Ala Lys Met Pro Thr Ala
                85                  90                  95

Gly Pro Thr Ala Asn Asn Thr Val Gly Glu Tyr Ala Ala Ser Phe Trp
            100                 105                 110

Val Gly Ile Asp Ser Ala Thr Asp Ala Cys Gly Ala Gly Gly Ser Leu
        115                 120                 125

Arg Ala Gly Val Asp Ile Phe Trp Asp Gly Thr Leu Gly Gly Gln Gln
    130                 135                 140

Thr Pro Phe Ala Trp Tyr Gln Gly Pro Gly Gln Ala Asp Val Val Gly
```

145 150 155 160

Phe Gly Gly Gly Phe Pro Val Gly Glu Gly Asp Leu Val Arg Leu Thr
165 170 175

Leu Glu Ala Gly Pro Ala Gly Gly Glu Glu Ile Ala Val Val Ala Glu
180 185 190

Asn Phe Gly Arg Asn Val Thr Arg Ala Asp Glu Gly Ala Val Pro Val
195 200 205

Arg Lys Val Arg Lys Val Leu Pro Ala Glu Ala Gly Gly Gln Lys Leu
210 215 220

Cys Arg Gly Glu Ala Ala Trp Met Val Glu Asp Phe Pro Leu Gln Gly
225 230 235 240

Arg Pro Glu Phe Pro Thr Ala Leu Ala Asn Phe Thr Ser Val Thr Phe
245 250 255

Asn Thr Gly Ile Thr Leu Asp Asp Gly Thr Glu Lys Asp Leu Thr Gly
260 265 270

Ala Glu Val Leu Asp Ile Gln Leu Glu Ala Gln Gly Gly Arg Leu Thr
275 280 285

Ser Cys Glu Val Val Asp Asp Arg Asn Val Lys Cys Ala Arg Val Val
290 295 300

Gly Asp Asn
305

<210> 588
<211> 197
<212> PRT
<213> Myceliophthora thermophila

<400> 588

Met Arg Trp Pro Leu Ala Ala Leu Leu Gly Ser Ala Leu Val Ala Arg
1 5 10 15

Gln Ala Leu Ala Glu Leu Thr Phe Thr Val Glu Ala Thr Arg Asn Gly
20 25 30

Val Pro Ile Pro Ala Ser Glu Ile Arg Leu Glu Pro Phe Glu Pro Gly
35 40 45

Arg Thr Arg Met Gly Ala Val Ala Glu Ala Pro Arg Ala Gln Arg Lys
50 55 60

Thr Arg Arg Ser Asn Ala Gln Ala Asp Ser Ala Asn Trp Cys Gly Ser
65 70 75 80

```
Val Asn Met Ala Pro Thr Gly Thr Asn Ile Gln Leu Ala His Gly Ser
                85                  90                  95

Phe Gln His Pro Ser Cys Ser Ile Arg Pro Gly Tyr Thr Phe Pro Gln
            100                 105                 110

Ala Ala Ala Ser Trp Val Gly Ile Asp Gly Asp Ser Tyr Arg Asp Ala
        115                 120                 125

Leu Leu Gln Ala Gly Thr Val Cys Lys Ile Asp Asn Ser Thr Gly Val
    130                 135                 140

Val Arg His Glu Ala Trp Trp Gln Trp Val Pro Ser Ala Ala Phe Thr
145                 150                 155                 160

Ile Thr Ser Met Pro Gly Gln Ser Asn Thr Thr Gly Phe Cys Ile Pro
                165                 170                 175

Tyr Ser Ala Pro Phe Val Ser Leu Cys Phe Phe Gly Arg Thr Arg Thr
            180                 185                 190

Cys Leu Phe Leu His
        195
```