

## SEQUENCE LISTING

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 Kizhner, Tali

<120> STABILIZED ALPHA-GALACTOSIDASE AND USES THEREOF

<130> 50863

<150> US 61/309,487  
 <151> 2010-03-02

<150> US 61/434,499  
 <151> 2011-01-20

<150> PCT/IL2010/000956  
 <151> 2010-11-17

<150> US 61/434,503  
 <151> 2011-01-20

<160> 14

<170> PatentIn version 3.5

<210> 1  
 <211> 405  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> Plant recombinant human alpha-GAL (prh-alpha-GAL)

<400> 1

Glu Phe Leu Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu  
 1 5 10 15

His Trp Glu Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp  
 20 25 30

Ser Cys Ile Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val  
 35 40 45

Ser Glu Gly Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp  
 50 55 60

Cys Trp Met Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp  
 65 70 75 80

Pro Gln Arg Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His  
 85 90 95

Ser Lys Gly Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr  
 100 105 110

Cys Ala Gly Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln  
 115 120 125

Thr Phe Ala Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr

130                      135                      140  
 Cys Asp Ser Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu  
 145                      150                      155                      160  
 Ala Leu Asn Arg Thr Gly Arg Ser Ile Val Tyr Ser Cys Glu Trp Pro  
 165                      170                      175  
 Leu Tyr Met Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln  
 180                      185                      190  
 Tyr Cys Asn His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys  
 195                      200                      205  
 Ser Ile Lys Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile  
 210                      215                      220  
 Val Asp Val Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val  
 225                      230                      235                      240  
 Ile Gly Asn Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala  
 245                      250                      255  
 Leu Trp Ala Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg  
 260                      265                      270  
 His Ile Ser Pro Gln Ala Lys Ala Leu Leu Gln Asp Lys Asp Val Ile  
 275                      280                      285  
 Ala Ile Asn Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln  
 290                      295                      300  
 Gly Asp Asn Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp  
 305                      310                      315                      320  
 Ala Val Ala Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr  
 325                      330                      335  
 Thr Ile Ala Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala  
 340                      345                      350  
 Cys Phe Ile Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr  
 355                      360                      365  
 Glu Trp Thr Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val  
 370                      375                      380  
 Leu Leu Gln Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Ser  
 385                      390                      395                      400  
 Glu Lys Asp Glu Leu  
 405

<210> 2  
 <211> 404  
 <212> PRT

<213> Artificial sequence

<220>

<223> Plant recombinant human alpha-GAL (prh-alpha-GAL)

<400> 2

Leu Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu His Trp  
1 5 10 15

Glu Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp Ser Cys  
20 25 30

Ile Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val Ser Glu  
35 40 45

Gly Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp Cys Trp  
50 55 60

Met Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp Pro Gln  
65 70 75 80

Arg Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His Ser Lys  
85 90 95

Gly Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr Cys Ala  
100 105 110

Gly Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln Thr Phe  
115 120 125

Ala Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr Cys Asp  
130 135 140

Ser Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu Ala Leu  
145 150 155 160

Asn Arg Thr Gly Arg Ser Ile Val Tyr Ser Cys Glu Trp Pro Leu Tyr  
165 170 175

Met Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln Tyr Cys  
180 185 190

Asn His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys Ser Ile  
195 200 205

Lys Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile Val Asp  
210 215 220

Val Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val Ile Gly  
225 230 235 240

Asn Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala Leu Trp  
245 250 255

Ala Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg His Ile  
260 265 270

Ser Pro Gln Ala Lys Ala Leu Leu Gln Asp Lys Asp Val Ile Ala Ile  
275 280 285

Asn Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln Gly Asp  
290 295 300

Asn Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp Ala Val  
305 310 315 320

Ala Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr Thr Ile  
325 330 335

Ala Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys Phe  
340 345 350

Ile Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp  
355 360 365

Thr Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val Leu Leu  
370 375 380

Gln Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Leu Ser Glu  
385 390 395 400

Lys Asp Glu Leu

<210> 3  
<211> 405  
<212> PRT  
<213> Artificial sequence

<220>  
<223> Plant recombinant human alpha-GAL (prh-alpha-GAL)

<400> 3

Gly Leu Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu His  
1 5 10 15

Trp Glu Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp Ser  
20 25 30

Cys Ile Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val Ser  
35 40 45

Glu Gly Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp Cys  
50 55 60

Trp Met Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp Pro  
65 70 75 80

Gln Arg Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His Ser  
85 90 95

Lys Gly Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr Cys  
100 105 110

Ala Gly Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln Thr  
 115 120 125  
 Phe Ala Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr Cys  
 130 135 140  
 Asp Ser Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu Ala  
 145 150 155 160  
 Leu Asn Arg Thr Gly Arg Ser Ile Val Tyr Ser Cys Glu Trp Pro Leu  
 165 170 175  
 Tyr Met Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln Tyr  
 180 185 190  
 Cys Asn His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys Ser  
 195 200 205  
 Ile Lys Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile Val  
 210 215 220  
 Asp Val Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val Ile  
 225 230 235 240  
 Gly Asn Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala Leu  
 245 250 255  
 Trp Ala Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg His  
 260 265 270  
 Ile Ser Pro Gln Ala Lys Ala Leu Leu Gln Asp Lys Asp Val Ile Ala  
 275 280 285  
 Ile Asn Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln Gly  
 290 295 300  
 Asp Asn Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp Ala  
 305 310 315 320  
 Val Ala Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr Thr  
 325 330 335  
 Ile Ala Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys  
 340 345 350  
 Phe Ile Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu  
 355 360 365  
 Trp Thr Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val Leu  
 370 375 380  
 Leu Gln Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Leu Ser  
 385 390 395 400  
 Glu Lys Asp Glu Leu

405

<210> 4  
 <211> 753  
 <212> PRT  
 <213> Cucumis melo

<400> 4

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

Leu Gly Asn Arg Val Leu Ser Asp Val His Asn Asn Ile Thr Leu Thr  
 20 25 30

Ala Ala Pro Gly Gly Gly Val Met Asn Gly Ala Phe Ile Gly Val Gln  
 35 40 45

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

Gly Leu Arg Phe Leu Cys Ala Phe Arg Phe Lys Leu Trp Trp Met Thr  
 65 70 75 80

Gln Arg Met Gly Cys Ser Gly Gln Glu Val Pro Phe Glu Thr Gln Phe  
 85 90 95

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

Glu Gly Asp Ala Val Tyr Thr Val Phe Leu Pro Ile Leu Glu Gly Asp  
 115 120 125

Phe Arg Ala Val Leu Gln Gly Asn Asp Asn Asn Glu Ile Glu Ile Cys  
 130 135 140

Leu Glu Ser Gly Asp Pro Ser Val Asp Gly Phe Glu Gly Ser His Leu  
 145 150 155 160

Val Phe Val Gly Ala Gly Ser Asp Pro Phe Glu Thr Ile Thr Tyr Ala  
 165 170 175

Val Lys Ser Val Glu Lys His Leu Gln Thr Phe Ala His Arg Glu Arg  
 180 185 190

Lys Lys Met Pro Asp Ile Leu Asn Trp Phe Gly Trp Cys Thr Trp Asp  
 195 200 205

Ala Phe Tyr Thr Asp Val Thr Ser Asp Gly Val Lys Lys Gly Leu Glu  
 210 215 220

Ser Phe Glu Asn Gly Gly Ile Pro Pro Lys Phe Val Ile Ile Asp Asp  
 225 230 235 240

Gly Trp Gln Ser Val Ala Lys Asp Ala Thr Ser Ala Asp Cys Lys Ala  
 245 250 255

Asp Asn Thr Ala Asn Phe Ala Asn Arg Leu Thr His Ile Lys Glu Asn  
 260 265 270  
 Tyr Lys Phe Gln Lys Asp Gly Lys Glu Gly Glu Arg Ile Glu Asn Pro  
 275 280 285  
 Ala Leu Gly Leu Gln His Ile Val Ser Tyr Met Lys Glu Lys His Ala  
 290 295 300  
 Thr Lys Tyr Val Tyr Val Trp His Ala Ile Thr Gly Tyr Trp Gly Gly  
 305 310 315 320  
 Val Ser Ala Gly Val Lys Glu Met Glu Gln Tyr Glu Ser Lys Ile Ala  
 325 330 335  
 Tyr Pro Val Ala Ser Pro Gly Val Glu Ser Asn Glu Pro Cys Asp Ala  
 340 345 350  
 Leu Asn Ser Ile Thr Lys Thr Gly Leu Gly Leu Val Asn Pro Glu Lys  
 355 360 365  
 Val Phe Asn Phe Tyr Asn Glu Gln His Ser Tyr Leu Ala Ser Ala Gly  
 370 375 380  
 Val Asp Gly Val Lys Val Asp Val Gln Asn Ile Leu Glu Thr Leu Gly  
 385 390 395 400  
 Ala Gly His Gly Gly Arg Val Lys Leu Ala Arg Lys Tyr His Gln Ala  
 405 410 415  
 Leu Glu Ala Ser Ile Ser Arg Asn Phe Gln Asp Asn Gly Ile Ile Ser  
 420 425 430  
 Cys Met Ser His Asn Thr Asp Gly Leu Tyr Ser Ser Lys Arg Asn Ala  
 435 440 445  
 Val Ile Arg Ala Ser Asp Asp Phe Trp Pro Arg Asp Pro Ala Ser His  
 450 455 460  
 Thr Ile His Ile Ala Ser Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu  
 465 470 475 480  
 Phe Met Gln Pro Asp Trp Asp Met Phe His Ser Leu His Pro Met Ala  
 485 490 495  
 Glu Tyr His Gly Ala Ala Arg Ala Val Gly Gly Cys Ala Ile Tyr Val  
 500 505 510  
 Ser Asp Lys Pro Gly Gln His Asp Phe Asn Leu Leu Lys Lys Leu Val  
 515 520 525  
 Leu Pro Asp Gly Ser Ile Leu Arg Ala Lys Leu Pro Gly Arg Pro Thr  
 530 535 540  
 Lys Asp Cys Leu Phe Thr Asp Pro Ala Arg Asp Gly Lys Ser Leu Leu  
 545 550 555 560

Lys Ile Trp Asn Leu Asn Asp Leu Ser Gly Val Val Gly Val Phe Asn  
565 570 575

Cys Gln Gly Ala Gly Trp Cys Lys Val Gly Lys Lys Asn Leu Ile His  
580 585 590

Asp Glu Asn Pro Asp Thr Ile Thr Gly Val Ile Arg Ala Lys Asp Val  
595 600 605

Ser Tyr Leu Trp Lys Ile Ala Gly Glu Ser Trp Thr Gly Asp Ala Val  
610 615 620

Ile Phe Ser His Leu Ala Gly Glu Val Val Tyr Leu Pro Gln Asp Ala  
625 630 635 640

Ser Met Pro Ile Thr Leu Lys Pro Arg Glu Phe Asp Val Phe Thr Val  
645 650 655

Val Pro Val Lys Glu Leu Val Asn Asp Ile Lys Phe Ala Pro Ile Gly  
660 665 670

Leu Ile Lys Met Phe Asn Ser Gly Gly Ala Val Lys Glu Met Asn His  
675 680 685

Gln Pro Gly Ser Ser Asn Val Ser Leu Lys Val Arg Gly Ser Gly Pro  
690 695 700

Phe Gly Ala Tyr Ser Ser Ser Lys Pro Lys Arg Val Ala Val Asp Ser  
705 710 715 720

Glu Glu Val Glu Phe Met Tyr Asp Glu Gly Gly Leu Ile Thr Ile Asp  
725 730 735

Leu Lys Val Pro Glu Lys Glu Leu Tyr Leu Trp Asp Ile Arg Ile Glu  
740 745 750

Leu

<210> 5  
<211> 772  
<212> PRT  
<213> Cucumis melo

<400> 5

Met Thr Val Thr Pro Lys Ile Ser Val Asn Asp Gly Asn Leu Val Val  
1 5 10 15

His Gly Lys Thr Ile Leu Thr Gly Val Pro Asp Asn Ile Val Leu Thr  
20 25 30

Pro Gly Ser Gly Leu Gly Leu Val Ala Gly Ala Phe Ile Gly Ala Thr  
35 40 45

Ala Ser Asn Ser Lys Ser Leu His Val Phe Pro Val Gly Val Leu Glu

|                                                                 |     |             |
|-----------------------------------------------------------------|-----|-------------|
| 50                                                              | 55  | 60          |
| Gly Thr Arg Phe Leu Cys Cys Phe Arg Phe Lys Leu Trp Trp Met Thr |     |             |
| 65                                                              | 70  | 75 80       |
| Gln Arg Met Gly Thr Ser Gly Arg Asp Ile Pro Phe Glu Thr Gln Phe |     |             |
|                                                                 | 85  | 90 95       |
| Leu Leu Met Glu Ser Lys Gly Asn Asp Gly Glu Asp Pro Asp Asn Ser |     |             |
|                                                                 | 100 | 105 110     |
| Ser Thr Ile Tyr Thr Val Phe Leu Pro Leu Leu Glu Gly Gln Phe Arg |     |             |
|                                                                 | 115 | 120 125     |
| Ala Ala Leu Gln Gly Asn Glu Lys Asn Glu Met Glu Ile Cys Leu Glu |     |             |
|                                                                 | 130 | 135 140     |
| Ser Gly Asp Asn Thr Val Glu Thr Asn Gln Gly Leu Ser Leu Val Tyr |     |             |
|                                                                 | 145 | 150 155 160 |
| Met His Ala Gly Thr Asn Pro Phe Glu Val Ile Thr Gln Ala Val Lys |     |             |
|                                                                 | 165 | 170 175     |
| Ala Val Glu Lys His Thr Gln Thr Phe Leu His Arg Glu Lys Lys Lys |     |             |
|                                                                 | 180 | 185 190     |
| Leu Pro Ser Phe Leu Asp Trp Phe Gly Trp Cys Thr Trp Asp Ala Phe |     |             |
|                                                                 | 195 | 200 205     |
| Tyr Thr Asp Val Thr Ala Glu Gly Val Val Glu Gly Leu Lys Ser Leu |     |             |
|                                                                 | 210 | 215 220     |
| Ser Glu Gly Gly Ala Pro Pro Lys Phe Leu Ile Ile Asp Asp Gly Trp |     |             |
|                                                                 | 225 | 230 235 240 |
| Gln Gln Ile Glu Ala Lys Pro Lys Asp Ala Asp Cys Val Val Gln Glu |     |             |
|                                                                 | 245 | 250 255     |
| Gly Ala Gln Phe Ala Ser Arg Leu Ser Gly Ile Lys Glu Asn His Lys |     |             |
|                                                                 | 260 | 265 270     |
| Phe Gln Lys Asn Gly Asn Asn Tyr Asp Gln Val Pro Gly Leu Lys Val |     |             |
|                                                                 | 275 | 280 285     |
| Val Val Asp Asp Ala Lys Lys Gln His Lys Val Lys Phe Val Tyr Ala |     |             |
|                                                                 | 290 | 295 300     |
| Trp His Ala Leu Ala Gly Tyr Trp Gly Gly Val Lys Pro Ala Ser Pro |     |             |
|                                                                 | 305 | 310 315 320 |
| Gly Met Glu His Tyr Asp Ser Ala Leu Ala Tyr Pro Val Gln Ser Pro |     |             |
|                                                                 | 325 | 330 335     |
| Gly Met Leu Gly Asn Gln Pro Asp Ile Val Val Asp Ser Leu Ala Val |     |             |
|                                                                 | 340 | 345 350     |

His Gly Ile Gly Leu Val His Pro Lys Lys Val Phe Asn Phe Tyr Asn  
 355 360 365  
 Glu Leu His Ser Tyr Leu Ala Ser Cys Gly Ile Asp Gly Val Lys Val  
 370 375 380  
 Asp Val Gln Asn Ile Ile Glu Thr Leu Gly Ala Gly His Gly Gly Arg  
 385 390 395 400  
 Val Thr Leu Thr Arg Ser Tyr His Gln Ala Leu Glu Ala Ser Ile Ala  
 405 410 415  
 Arg Asn Phe Ser Asp Asn Gly Cys Ile Ala Cys Met Cys His Asn Thr  
 420 425 430  
 Asp Ser Leu Tyr Ser Ala Lys Gln Thr Ala Val Val Arg Ala Ser Asp  
 435 440 445  
 Asp Tyr Tyr Pro Arg Asp Pro Ala Ser His Thr Ile His Ile Ser Ser  
 450 455 460  
 Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu Phe Met Gln Pro Asp Trp  
 465 470 475 480  
 Asp Met Phe His Ser Leu His Pro Thr Ala Glu Tyr His Gly Ala Ala  
 485 490 495  
 Arg Ala Ile Gly Gly Cys Ala Ile Tyr Val Ser Asp Lys Pro Gly Asn  
 500 505 510  
 His Asn Phe Asp Leu Leu Lys Lys Leu Val Leu Pro Asp Gly Ser Val  
 515 520 525  
 Leu Arg Ala Gln Leu Pro Gly Arg Pro Thr Arg Asp Ser Leu Phe Asn  
 530 535 540  
 Asp Pro Ala Arg Asp Gly Thr Ser Leu Leu Lys Ile Trp Asn Met Asn  
 545 550 555 560  
 Lys Cys Ser Gly Val Val Gly Val Phe Asn Cys Gln Gly Ala Gly Trp  
 565 570 575  
 Cys Arg Ile Thr Lys Lys Thr Arg Ile His Asp Glu Ser Pro Gly Thr  
 580 585 590  
 Leu Thr Thr Ser Val Arg Ala Ala Asp Val Asp Ala Ile Ser Gln Val  
 595 600 605  
 Ala Gly Ala Asp Trp Lys Gly Asp Thr Ile Val Tyr Ala Tyr Arg Ser  
 610 615 620  
 Gly Asp Leu Ile Arg Leu Pro Lys Gly Ala Ser Val Pro Val Thr Leu  
 625 630 635 640  
 Lys Val Leu Glu Tyr Asp Leu Leu His Ile Ser Pro Leu Lys Asp Ile

645                      650                      655  
 Ala Ser Asn Ile Ser Phe Ala Pro Ile Gly Leu Leu Asp Met Phe Asn  
                     660                      665                      670  
 Thr Gly Gly Ala Val Glu Gln Val Asn Val Gln Val Val Glu Pro Ile  
                     675                      680                      685  
 Pro Glu Phe Asp Gly Glu Val Ala Ser Glu Leu Thr Cys Ser Leu Pro  
                     690                      695                      700  
 Asn Asp Arg Pro Pro Thr Ala Thr Ile Thr Met Lys Ala Arg Gly Cys  
                     705                      710                      715                      720  
 Arg Arg Phe Gly Leu Tyr Ser Ser Gln Arg Pro Leu Lys Cys Ser Val  
                     725                      730                      735  
 Asp Lys Val Asp Val Asp Phe Val Tyr Asp Glu Val Thr Gly Leu Val  
                     740                      745                      750  
 Thr Phe Glu Ile Pro Ile Pro Thr Glu Glu Met Tyr Arg Trp Asn Ile  
                     755                      760                      765  
 Glu Ile Gln Val  
                     770  
 <210> 6  
 <211> 767  
 <212> PRT  
 <213> Tetragonia tetragonioides  
 <400> 6  
 Met Thr Ile Thr Pro Ser Ile Ser Val Ser Asn Gly Asn Leu Val Val  
                     1                      5                      10                      15  
 His Gly Lys Thr Ile Leu Thr Gly Val Pro Asp Asn Ile Ile Leu Thr  
                     20                      25                      30  
 Pro Gly Ser Gly Ala Gly Leu Ala Ala Gly Ala Phe Ile Gly Ala Thr  
                     35                      40                      45  
 Ala Asp Asp Ser Lys Cys Leu His Val Phe Pro Met Gly Thr Leu Glu  
                     50                      55                      60  
 Gly Leu Arg Phe Met Cys Cys Leu Arg Phe Lys Leu Trp Trp Met Thr  
                     65                      70                      75                      80  
 Gln Arg Met Gly Lys Cys Gly Lys Asp Ile Pro Leu Glu Thr Gln Phe  
                     85                      90                      95  
 Met Ile Val Glu Ser Lys Asp Asp Thr Val Glu Gly Glu Pro Asp Asp  
                     100                      105                      110  
 Ser Pro Thr Ile Tyr Thr Val Phe Leu Pro Leu Leu Glu Gly Gln Phe  
                     115                      120                      125

Arg Ala Val Leu Gln Gly Thr Glu Lys Asn Glu Ile Glu Ile Cys Leu  
 130 135 140  
 Glu Ser Gly Asp Thr Thr Val Gln Thr Ser Gln Gly Leu His Leu Val  
 145 150 155 160  
 Tyr Met His Ala Gly Thr Asn Pro Tyr Glu Val Ile Asn Gln Ala Val  
 165 170 175  
 Lys Ala Val Glu Lys His Met Gln Thr Phe Arg His Arg Glu Lys Lys  
 180 185 190  
 Arg Leu Pro Ser Phe Val Asp Trp Phe Gly Trp Cys Thr Trp Asp Ala  
 195 200 205  
 Phe Tyr Thr Asp Val Thr Ala Glu Gly Val Asp Glu Gly Leu Arg Ser  
 210 215 220  
 Leu Ser Glu Gly Gly Thr Pro Pro Arg Phe Leu Ile Ile Asp Asp Gly  
 225 230 235 240  
 Trp Gln Gln Ile Gly Asn Glu Ile Val Lys Asp Glu Asn Cys Met Val  
 245 250 255  
 Gln Glu Gly Ala Gln Phe Ala Asn Arg Leu Thr Gly Ile Lys Glu Asn  
 260 265 270  
 Ala Lys Phe Gln Lys Lys Lys Asn Gly Glu Asp Lys Asp Gln Val Pro  
 275 280 285  
 Gly Leu Lys His Val Val Glu Glu Ala Lys Gln Arg His Asn Val Lys  
 290 295 300  
 Ser Val Tyr Val Trp His Ala Leu Ala Gly Tyr Trp Gly Gly Val Lys  
 305 310 315 320  
 Pro Ala Ala Ala Gly Met Glu His Tyr Asp Thr Ala Leu Ala Tyr Pro  
 325 330 335  
 Val Gln Ser Pro Gly Val Leu Gly Asn Gln Pro Asp Val Val Met Asp  
 340 345 350  
 Ser Leu Ser Val His Gly Leu Gly Leu Val His Pro Lys Lys Val Phe  
 355 360 365  
 Asn Phe Tyr Asn Glu Leu His Ala Tyr Leu Ala Ala Cys Gly Val Asp  
 370 375 380  
 Gly Val Lys Val Asp Val Gln Asn Ile Ile Glu Thr Leu Gly Ala Gly  
 385 390 395 400  
 His Gly Gly Arg Val Ser Leu Thr Arg Ala Tyr His Gln Ala Leu Glu  
 405 410 415  
 Ala Ser Ile Ala Arg Asn Phe Pro Asp Asn Gly Cys Ile Ser Cys Met  
 420 425 430

Cys His Asn Thr Asp Gly Ile Tyr Ser Thr Lys Gln Thr Ala Val Val  
 435 440 445  
 Arg Ala Ser Asp Asp Phe Tyr Pro Arg Asp Pro Ala Ser His Thr Ile  
 450 455 460  
 His Ile Ser Ser Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu Phe Met  
 465 470 475 480  
 Gln Pro Asp Trp Asp Met Phe His Ser Leu His Pro Ala Ala Asp Tyr  
 485 490 495  
 His Ala Ala Ala Arg Ala Val Gly Gly Cys Pro Ile Tyr Val Ser Asp  
 500 505 510  
 Lys Pro Gly Phe His Asn Phe Glu Leu Leu Lys Lys Leu Val Leu Pro  
 515 520 525  
 Asp Gly Ser Val Leu Arg Ala Arg Leu Pro Gly Arg Pro Thr Arg Asp  
 530 535 540  
 Cys Leu Phe Asn Asp Pro Ala Arg Asp Gly Thr Ser Leu Leu Lys Ile  
 545 550 555 560  
 Trp Asn Lys Asn Asn Cys Ser Gly Val Val Gly Val Phe Asn Cys Gln  
 565 570 575  
 Gly Ala Gly Trp Cys Lys Ile Glu Lys Lys Ile Arg Ile His Asp Thr  
 580 585 590  
 Ser Pro Gly Thr Leu Thr Gly Ser Val Arg Ala Thr Asp Val Asp Ser  
 595 600 605  
 Ile Ala Glu Val Ala Gly Gln Gly Trp Asn Gly Asp Val Val Val Tyr  
 610 615 620  
 Leu Tyr Arg Ala Gly Glu Leu Val Cys Leu Pro Lys Gly Ala Ser Leu  
 625 630 635 640  
 Pro Val Thr Leu Lys Val Arg Glu Tyr Glu Leu Phe His Phe Cys Pro  
 645 650 655  
 Ile Lys Glu Ile Thr Ser Asn Ile Ser Phe Ala Pro Ile Gly Leu Leu  
 660 665 670  
 Asp Met Phe Asn Gly Ser Gly Ala Val Asp Gln Phe Asp Val Gln Leu  
 675 680 685  
 Thr Ser Glu Asn Arg Thr Glu Leu Ser Asp Gly Glu Lys Arg Ser Pro  
 690 695 700  
 Ser Ala Ser Ile Gln Leu Lys Val Arg Gly Cys Gly Arg Phe Gly Ala  
 705 710 715 720

Tyr Ser Ser Gln Cys Pro Leu Lys Cys Thr Val Gly Gly Ala Asp Ser  
725 730 735

Gly Phe Asn Tyr Asp Glu Glu Thr Cys Leu Leu Thr Leu Thr Leu Pro  
740 745 750

Val Pro Gln Glu Glu Met Tyr Arg Trp Pro Val Glu Ile Gln Val  
755 760 765

<210> 7  
<211> 772  
<212> PRT  
<213> Cucumis sativus

<400> 7

Met Thr Val Thr Pro Lys Ile Thr Val Asn Asp Gly Asn Leu Val Val  
1 5 10 15

His Gly Lys Thr Ile Leu Thr Gly Val Pro Asp Asn Ile Val Leu Thr  
20 25 30

Pro Gly Ser Gly Leu Gly Leu Val Ala Gly Ala Phe Ile Gly Ala Thr  
35 40 45

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

Gly Thr Arg Phe Leu Cys Cys Phe Arg Phe Lys Leu Trp Trp Met Thr  
65 70 75 80

Gln Arg Met Gly Thr Ser Gly Arg Asp Ile Pro Phe Glu Thr Gln Phe  
85 90 95

Leu Leu Met Glu Ser Gln Gly Asn Asp Gly Glu Asp Pro Asp Asn Ser  
100 105 110

Ser Thr Ile Tyr Thr Val Phe Leu Pro Leu Leu Glu Gly Gln Phe Arg  
115 120 125

Ala Ala Leu Gln Gly Asn Glu Lys Asn Glu Met Glu Ile Cys Leu Glu  
130 135 140

Ser Gly Asp Asn Thr Val Glu Thr Asn Gln Gly Leu Ser Leu Val Tyr  
145 150 155 160

Met His Ala Gly Thr Asn Pro Phe Glu Val Ile Thr Gln Ala Val Lys  
165 170 175

Ala Val Glu Lys His Thr Gln Thr Phe Leu His Arg Glu Lys Lys Lys  
180 185 190

Leu Pro Ser Phe Leu Asp Trp Phe Gly Trp Cys Thr Trp Asp Ala Phe  
195 200 205

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

Ser Asp Gly Gly Ala Pro Pro Lys Phe Leu Ile Ile Asp Asp Gly Trp  
 225 230 235 240

Gln Gln Ile Glu Ala Lys Pro Lys Asp Ala Asp Cys Val Val Gln Glu  
 245 250 255

Gly Ala Gln Phe Ala Ser Arg Leu Ser Gly Ile Lys Glu Asn His Lys  
 260 265 270

Phe Gln Lys Asn Gly Asn Asn Tyr Asp Gln Val Pro Gly Leu Lys Val  
 275 280 285

Val Val Asp Asp Ala Lys Lys Gln His Lys Val Lys Phe Val Tyr Ala  
 290 295 300

Trp His Ala Leu Ala Gly Tyr Trp Gly Gly Val Lys Pro Ala Ser Pro  
 305 310 315 320

Gly Met Glu His Tyr Asp Ser Ala Leu Ala Tyr Pro Val Gln Ser Pro  
 325 330 335

Gly Met Leu Gly Asn Gln Pro Asp Ile Val Val Asp Ser Leu Ala Val  
 340 345 350

His Gly Ile Gly Leu Val His Pro Lys Lys Val Phe Asn Phe Tyr Asn  
 355 360 365

Glu Leu His Ser Tyr Leu Ala Ser Cys Gly Ile Asp Gly Val Lys Val  
 370 375 380

Asp Val Gln Asn Ile Ile Glu Thr Leu Gly Ala Gly His Gly Gly Arg  
 385 390 395 400

Val Thr Leu Thr Arg Ser Tyr His Gln Ala Leu Glu Ala Ser Ile Ala  
 405 410 415

Arg Asn Phe Ser Asp Asn Gly Cys Ile Ala Cys Met Cys His Asn Thr  
 420 425 430

Asp Ser Leu Tyr Ser Ala Lys Gln Thr Ala Val Val Arg Ala Ser Asp  
 435 440 445

Asp Tyr Tyr Pro Arg Asp Pro Ala Ser His Thr Ile His Ile Ser Ser  
 450 455 460

Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu Phe Met Gln Pro Asp Trp  
 465 470 475 480

Asp Met Phe His Ser Leu His Pro Thr Ala Glu Tyr His Gly Ala Ala  
 485 490 495

Arg Ala Ile Gly Gly Cys Ala Ile Tyr Val Ser Asp Lys Pro Gly Asn  
 500 505 510

His Asn Phe Asp Leu Leu Lys Lys Leu Val Leu Pro Asp Gly Ser Val

515                      520                      525  
 Leu Arg Ala Gln Leu Pro Gly Arg Pro Thr Arg Asp Ser Leu Phe Asn  
 530                      535                      540  
 Asp Pro Ala Arg Asp Gly Thr Ser Leu Leu Lys Ile Trp Asn Met Asn  
 545                      550                      555                      560  
 Lys Cys Ser Gly Val Val Gly Val Phe Asn Cys Gln Gly Ala Gly Trp  
 565                      570                      575  
 Cys Arg Ile Thr Lys Lys Thr Arg Ile His Asp Glu Ser Pro Gly Thr  
 580                      585                      590  
 Leu Thr Thr Ser Val Arg Ala Ala Asp Val Asp Ala Ile Ser Gln Val  
 595                      600                      605  
 Ala Gly Ala Asp Trp Lys Gly Asp Thr Ile Val Tyr Ala Tyr Arg Ser  
 610                      615                      620  
 Gly Asp Leu Thr Arg Leu Pro Lys Gly Ala Ser Val Pro Val Thr Leu  
 625                      630                      635                      640  
 Lys Val Leu Glu Tyr Asp Leu Phe His Ile Ser Pro Leu Lys Asp Ile  
 645                      650                      655  
 Thr Ser Asn Ile Ser Phe Ala Pro Ile Gly Leu Val Asp Met Phe Asn  
 660                      665                      670  
 Ile Gly Gly Ala Val Glu Gln Val Asp Ile Gln Val Val Glu Pro Ile  
 675                      680                      685  
 Pro Glu Phe Asp Gly Glu Val Ala Ser Glu Leu Thr Cys Ser Leu Pro  
 690                      695                      700  
 Asp Asp Arg Pro Pro Thr Ala Thr Ile Thr Met Lys Ala Arg Gly Cys  
 705                      710                      715                      720  
 Gly Arg Phe Gly Leu Tyr Ser Ser Gln Arg Pro Leu Lys Cys Ser Val  
 725                      730                      735  
 Asp Lys Val Gly Thr Asp Phe Val Tyr Asp Asp Val Thr Gly Leu Val  
 740                      745                      750  
 Thr Phe Glu Ile Pro Ile Pro Thr Glu Glu Met Tyr Arg Trp Asn Ile  
 755                      760                      765  
 Glu Ile Glu Val  
 770  
 <210> 8  
 <211> 211  
 <212> PRT  
 <213> Zea mays  
 <400> 8

Pro Phe Glu Val Ile Thr Ser Ser Val Lys Ala Val Glu Arg His Leu  
 1 5 10 15  
 Gln Thr Phe Ser His Arg Glu Lys Lys Lys Met Pro Asp Ile Leu Asn  
 20 25 30  
 Trp Phe Gly Trp Cys Thr Trp Asp Ala Phe Tyr Thr Asn Val Thr Ala  
 35 40 45  
 Gln Gly Val Lys Gln Gly Leu Gln Ser Leu Glu Lys Gly Gly Val Ser  
 50 55 60  
 Pro Arg Phe Val Ile Ile Asp Asp Gly Trp Gln Ser Val Ala Met Asp  
 65 70 75 80  
 Pro Val Gly Ile Ala Cys Leu Ser Asp Asn Ser Ala Asn Phe Ala Asn  
 85 90 95  
 Arg Leu Thr His Ile Arg Glu Asn His Lys Phe Gln Lys Asn Gly Arg  
 100 105 110  
 Glu Gly His Arg Glu Asp Asp Pro Ala Lys Gly Leu Ala His Val Val  
 115 120 125  
 Asn Glu Ile Lys Gly Lys His Gln Leu Lys Tyr Val Tyr Val Trp His  
 130 135 140  
 Ala Ile Thr Gly Tyr Trp Gly Gly Val Arg Pro Gly Ala Ala Gly Met  
 145 150 155 160  
 Glu His Tyr Gly Ser Lys Met Gln Arg Pro Val Pro Ser Pro Gly Val  
 165 170 175  
 Pro Lys Asn Glu Arg Cys Glu Ala Leu Asp Ser Met Thr Ala Asn Gly  
 180 185 190  
 Leu Gly Leu Val Asn Leu Asp Arg Ala Phe Ser Phe Tyr Asp Glu Leu  
 195 200 205  
 His Ser Tyr  
 210  
 <210> 9  
 <211> 747  
 <212> PRT  
 <213> Zea mays  
 <400> 9  
 Met Thr Val Ala Ser Ser Val Arg Leu Ala Gly Gly Asn Leu Thr Val  
 1 5 10 15  
 Cys Gly Arg Thr Val Leu Ser Gly Val Pro Asp Ala Val Val Ala Thr  
 20 25 30  
 Ser Ala Ala Thr Glu Gly Ala Val Asp Gly Ile Phe Leu Gly Ala Asp  
 35 40 45

Phe Ala Glu Pro Ala Ala Arg His Val Val Ser Leu Gly Asp Leu Arg  
 50 55 60  
 Asp Val Arg Phe Met Ala Cys Phe Arg Phe Lys Leu Trp Trp Met Ala  
 65 70 75 80  
 Gln Arg Met Gly Glu Lys Gly Ser Asp Val Pro Arg Glu Thr Gln Phe  
 85 90 95  
 Leu Leu Val Glu Ser Arg Gly Val Gly Asp Glu Asp Ala Ala Tyr Val  
 100 105 110  
 Val Phe Leu Pro Leu Val Glu Gly Ala Phe Arg Ala Ser Ile Gln Gly  
 115 120 125  
 Gly Ala Gly Asp Ala Leu Glu Leu Cys Val Glu Ser Gly Asp Asp Asp  
 130 135 140  
 Thr Arg Ala Ala Ser Phe Glu Arg Ser Leu Phe Val Gly Ala Ala Glu  
 145 150 155 160  
 Ser Asp Pro Phe Ala Ala Ile Ser Gly Ala Val Ala Ala Ala Lys Ser  
 165 170 175  
 Ala Leu Arg Thr Phe Arg Val Arg Ala Glu Lys Lys Leu Pro Gly Ile  
 180 185 190  
 Val Asp Tyr Phe Gly Trp Cys Thr Trp Asp Ala Phe Tyr Gln Asp Val  
 195 200 205  
 Thr Gln Glu Gly Val Glu Ala Gly Leu Arg Ser Leu Ile Ala Gly Gly  
 210 215 220  
 Ala Pro Pro Lys Phe Val Ile Ile Asp Asp Gly Trp Gln Ser Val Ala  
 225 230 235 240  
 Thr Asp Thr Asn Glu Ser Ala Gly Glu Asp Lys Pro Pro Leu Leu Ser  
 245 250 255  
 Arg Leu Thr Gly Ile Lys Glu Asn Ser Lys Phe Gln Asn Ala Asp Asp  
 260 265 270  
 Pro Ala Ala Gly Ile Lys Thr Val Val Arg Leu Ala Lys Glu Glu Tyr  
 275 280 285  
 Arg Leu Lys Tyr Val Tyr Val Trp His Ala Ile Thr Gly Tyr Trp Gly  
 290 295 300  
 Gly Val Arg Pro Gly Glu Glu His Tyr Arg Ser Ser Met Gln Phe Pro  
 305 310 315 320  
 Lys Val Ser Pro Gly Val Met Glu Asn Glu Pro Gly Met Lys Thr Asp  
 325 330 335  
 Val Leu Thr Val Gln Gly Leu Gly Leu Val His Pro Arg Ala Val Tyr

|                                                                 |                                     |     |
|-----------------------------------------------------------------|-------------------------------------|-----|
| 340                                                             | 345                                 | 350 |
| Arg Phe Tyr Asp Glu Leu His                                     | Ala Tyr Leu Ala Ala Ala Gly Val Asp |     |
| 355                                                             | 360                                 | 365 |
| Gly Val Lys Val Asp Val Gln Cys Ile Leu Glu Thr Leu Gly Ala Gly |                                     |     |
| 370                                                             | 375                                 | 380 |
| His Gly Gly Arg Val Gln Leu Thr Arg Gln Tyr His Gln Ala Leu Asp |                                     |     |
| 385                                                             | 390                                 | 395 |
| Ala Ser Val Ala Lys Asn Phe Pro Glu Asn Gly Ile Ile Ala Cys Met |                                     |     |
| 405                                                             | 410                                 | 415 |
| Ser His Asn Thr Asp Ala Leu Tyr Cys Ser Lys Gln Thr Ala Val Val |                                     |     |
| 420                                                             | 425                                 | 430 |
| Arg Ala Ser Asp Asp Phe Cys Pro Arg Asp Pro Ala Ser His Thr Ile |                                     |     |
| 435                                                             | 440                                 | 445 |
| His Ile Ala Ser Val Ala Tyr Asn Ser Val Phe Leu Gly Glu Phe Met |                                     |     |
| 450                                                             | 455                                 | 460 |
| Leu Pro Asp Trp Asp Met Phe His Ser Leu His Gln Ala Gly Asp Tyr |                                     |     |
| 465                                                             | 470                                 | 475 |
| His Gly Ser Ala Arg Ala Ile Ser Gly Gly Pro Val Tyr Val Ser Asp |                                     |     |
| 485                                                             | 490                                 | 495 |
| Ala Pro Gly Lys His Asn Phe Glu Leu Leu Lys Lys Ile Val Leu Pro |                                     |     |
| 500                                                             | 505                                 | 510 |
| Asp Gly Ser Ile Leu Arg Ala Arg Leu Pro Gly Arg Pro Thr Lys Asp |                                     |     |
| 515                                                             | 520                                 | 525 |
| Cys Leu Phe Thr Asp Pro Ala Arg Asp Gly Val Ser Leu Leu Lys Ile |                                     |     |
| 530                                                             | 535                                 | 540 |
| Trp Asn Met Asn Lys Phe Thr Gly Val Leu Gly Val Tyr Asn Cys Gln |                                     |     |
| 545                                                             | 550                                 | 555 |
| Gly Ala Ala Trp Asn Ser Val Glu Lys Lys Asn Thr Phe His Gln Thr |                                     |     |
| 565                                                             | 570                                 | 575 |
| Gly Thr Glu Ala Leu Thr Cys Gly Val Lys Gly Gly Asp Val His Leu |                                     |     |
| 580                                                             | 585                                 | 590 |
| Ile Ser Glu Ala Ala Thr Asp Thr Glu Trp Asp Gly Asp Cys Ala Met |                                     |     |
| 595                                                             | 600                                 | 605 |
| Tyr Arg His Ala Asp Gly Asp Leu Val Val Leu Pro His Asp Ala Ala |                                     |     |
| 610                                                             | 615                                 | 620 |
| Leu Pro Val Ser Leu Lys Val Leu Glu His Asp Ile Leu Thr Val Ser |                                     |     |
| 625                                                             | 630                                 | 635 |
|                                                                 |                                     | 640 |

Pro Ile Lys Glu Leu Ala Pro Gly Phe Arg Phe Ala Pro Ile Gly Leu  
645 650 655

Val Asp Met Phe Asn Ser Gly Gly Ala Val Glu Gly Leu Thr Tyr His  
660 665 670

Leu Leu Gly Gly Asp Gly Ser Thr Leu Gly Ser Glu Ala Val Ala Leu  
675 680 685

Ala Cys Met Glu Val Lys Gly Cys Gly Arg Phe Gly Ala Tyr Ser Ser  
690 695 700

Val Arg Pro Arg Lys Ser Thr Leu Gly Ser Ala Gln Ile Glu Leu Lys  
705 710 715 720

Tyr Asp Ser Ser Ser Gly Leu Leu Ile Leu Gln Leu Asp Ala Met Pro  
725 730 735

Lys Glu Arg Val His Lys Ile Val Ile Glu Leu  
740 745

<210> 10  
<211> 753  
<212> PRT  
<213> Oryza sativa

<400> 10

Met Thr Val Gly Ala Gly Val Ala Val Gln Asp Gly Gly Leu Val Ala  
1 5 10 15

Leu Gly Ala Thr Val Leu Thr Glu Val Arg Asp Asn Val Leu Leu Thr  
20 25 30

Pro Ala Ala Gly Ala Gly Met Thr Ser Gly Thr Phe Val Gly Val Arg  
35 40 45

Ser Ala Thr Ala Gly Ser Arg Ser Val Phe Pro Val Gly Lys Leu Arg  
50 55 60

Gly Leu Arg Phe Ile Cys Thr Phe Arg Phe Lys Met Trp Trp Met Thr  
65 70 75 80

Gln Arg Met Gly Thr Ser Gly Arg Asp Ile Pro Phe Glu Thr Gln Phe  
85 90 95

Leu Leu Val Glu Ala Ala Asp Ala Asp Gly Ser His Leu Ala Gly Asp  
100 105 110

Gly Ala Ala Ala Val Tyr Thr Val Phe Leu Pro Ile Leu Glu Gly Pro  
115 120 125

Phe Arg Ala Val Leu Gln Gly Asn Ser Asp Asp Glu Leu Glu Ile Cys  
130 135 140

Leu Glu Ser Gly Asp Pro Ala Val Glu Ser Phe Glu Gly Thr His Leu  
145 150 155 160

Val Phe Val Gly Ala Gly Ser Asp Pro Phe Glu Val Ile Thr Asn Ser  
 165 170 175

Val Lys Ala Val Glu Arg His Leu Gln Thr Phe Thr His Arg Glu Lys  
 180 185 190

Lys Lys Met Pro Asp Met Leu Asn Trp Phe Gly Trp Cys Thr Trp Asp  
 195 200 205

Ala Phe Tyr Thr Asp Val Thr Ser Glu Gly Val Met Glu Gly Leu Gln  
 210 215 220

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

Gly Trp Gln Ser Val Ser Met Asp Pro Ala Gly Ile Ala Ser Leu Ala  
 245 250 255

Asp Asn Ser Ala Asn Phe Ala Asn Arg Leu Thr His Ile Lys Glu Asn  
 260 265 270

His Lys Phe Gln Leu Asn Gly Arg Lys Gly His Arg Glu Glu Asn Pro  
 275 280 285

Ala Asn Gly Leu Ala His Ile Val Asn Glu Ile Lys Gly Lys His Gln  
 290 295 300

Leu Lys Tyr Val Tyr Val Trp His Ala Ile Thr Gly Tyr Trp Gly Gly  
 305 310 315 320

Val Arg Pro Gly Ala Asp Gly Met Glu His Tyr Glu Ser Lys Met Gln  
 325 330 335

Tyr Pro Val Ser Ser Pro Gly Val Gln Lys Asn Glu Pro Cys Asp Ala  
 340 345 350

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

Val Phe Ser Phe Tyr Asn Glu Leu His Ala Tyr Leu Ala Ser Ala Gly  
 370 375 380

Ile Asp Gly Val Lys Val Asp Val Gln Asn Ile Leu Glu Thr Leu Gly  
 385 390 395 400

Ala Gly His Gly Gly Arg Val Leu Leu Ala Arg Lys Tyr His Gln Ala  
 405 410 415

Leu Glu Ala Ser Ile Ala Arg Asn Phe Arg Asp Asn Gly Ile Ile Cys  
 420 425 430

Cys Met Ser His Asn Thr Asp Asn Leu Tyr Ser Ser Lys Arg Ser Ala  
 435 440 445

Val Val Arg Ala Ser Asp Asp Phe Trp Pro Arg Asp Pro Ala Ser His  
450 455 460

Thr Ile His Ile Ala Ser Val Ala Tyr Asn Thr Val Phe Leu Gly Glu  
465 470 475 480

Phe Met Gln Pro Asp Trp Asp Met Phe His Ser Val His Pro Met Ala  
485 490 495

Glu Tyr His Ala Ala Ala Arg Ala Val Gly Gly Cys Ala Ile Tyr Val  
500 505 510

Ser Asp Lys Pro Gly Asn His Asp Phe Asn Leu Leu Lys Lys Leu Val  
515 520 525

Leu Pro Asp Gly Ser Ile Leu Arg Ala Lys Leu Pro Gly Arg Pro Thr  
530 535 540

Arg Asp Cys Leu Phe Ser Asp Pro Ala Arg Asp Gly Lys Ser Ile Leu  
545 550 555 560

Lys Ile Trp Asn Leu Asn Glu His Ser Gly Val Ile Gly Ala Phe Asn  
565 570 575

Cys Gln Gly Ala Gly Trp Cys Arg Val Gly Lys Lys Asn Leu Val His  
580 585 590

Asp Glu Gln Pro Ala Thr Val Thr Gly Val Ile Arg Ala Gln Asp Val  
595 600 605

His His Leu Ala Thr Val Ala Ala Asp Gly Trp Asn Gly Asp Val Ile  
610 615 620

Val Tyr Ser His Ile Gly Gly Glu Val Thr Cys Leu Pro Lys Asn Ala  
625 630 635 640

Ser Leu Pro Val Thr Leu Lys Thr Arg Glu Tyr Glu Val Phe Thr Val  
645 650 655

Val Pro Leu Lys Lys Leu Asp Asn Gly Val Ser Phe Ala Ala Val Gly  
660 665 670

Leu Ile Gly Met Phe Asn Ser Gly Gly Ala Val Thr Ala Val Arg Tyr  
675 680 685

Val Glu Asp Ala Gly Val Glu Val Arg Val Arg Gly Ser Gly Thr Val  
690 695 700

Gly Ala Tyr Ser Ser Ala Lys Pro Ala Arg Val Val Val Asp Ser Glu  
705 710 715 720

Ala Ala Glu Phe Ser Tyr Asp Asp Gly Cys Gly Leu Val Thr Phe Glu  
725 730 735

Leu Ala Val Pro Glu Gln Glu Leu Tyr Ser Trp Thr Ile Ser Ile Glu  
740 745 750

Tyr

<210> 11  
 <211> 777  
 <212> PRT  
 <213> Pisum sativum

<400> 11

Met Thr Val Thr Pro Lys Ile Ser Val Asn Asp Gly Asn Leu Val Val  
 1 5 10 15

His Gly Lys Thr Ile Leu Lys Gly Val Pro Glu Asn Val Val Leu Thr  
 20 25 30

Pro Gly Ser Gly Asn Gly Leu Leu Thr Gly Gly Ala Phe Ile Gly Ala  
 35 40 45

Thr Ala Ser Asn Ser Lys Ser Leu His Val Phe Pro Ile Gly Ile Leu  
 50 55 60

Glu Gly Leu Arg Phe Val Cys Cys Phe Arg Phe Lys Leu Trp Trp Met  
 65 70 75 80

Thr Gln Arg Met Gly Thr Cys Gly Arg Asp Ile Pro Leu Glu Thr Gln  
 85 90 95

Phe Met Leu Ile Glu Ser Lys Asp Ser Glu Gly Glu Glu Gly Asn Ser  
 100 105 110

Pro Val Ile Tyr Thr Val Leu Leu Pro Leu Leu Glu Gly Pro Phe Arg  
 115 120 125

Ser Val Leu Gln Gly Asn Glu Lys Ser Glu Ile Glu Ile Cys Phe Glu  
 130 135 140

Ser Gly Asp His Ala Val Glu Thr Asn Gln Gly Leu His Met Val Tyr  
 145 150 155 160

Met His Ala Gly Thr Asn Pro Phe Glu Val Ile Asn Gln Ala Val Lys  
 165 170 175

Ala Val Glu Lys His Met Gln Thr Phe His His Arg Glu Lys Lys Arg  
 180 185 190

Leu Pro Ser Phe Leu Asp Met Phe Gly Trp Cys Thr Trp Asp Ala Phe  
 195 200 205

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

Ser Glu Gly Gly Thr Pro Pro Arg Phe Leu Ile Ile Asp Asp Gly Trp  
 225 230 235 240

Gln Gln Ile Glu Ser Lys Ala Lys Asp Pro Gly Cys Val Val Gln Glu

|                                                                        |     |     |
|------------------------------------------------------------------------|-----|-----|
| 245                                                                    | 250 | 255 |
| Gly Ala Gln Phe Ala Thr Met Leu Thr Gly Ile Lys Glu Asn Ala Lys<br>260 | 265 | 270 |
| Phe Gln Lys Asn Lys Asn Glu Glu His Ser Glu Pro Thr Ser Gly Leu<br>275 | 280 | 285 |
| Lys His Leu Val Asp Gly Val Lys Lys His His Asn Val Lys Asn Val<br>290 | 295 | 300 |
| Tyr Val Trp His Ala Leu Ala Gly Tyr Trp Gly Gly Val Lys Pro Ala<br>305 | 310 | 315 |
| Ala Thr Gly Met Glu His Tyr Asp Thr Ala Leu Ala Tyr Pro Val Gln<br>325 | 330 | 335 |
| Ser Pro Gly Val Leu Gly Asn Gln Pro Asp Ile Val Met Asp Ser Leu<br>340 | 345 | 350 |
| Ser Val His Gly Leu Gly Leu Val His Pro Lys Lys Val Phe Asn Phe<br>355 | 360 | 365 |
| Tyr Asn Glu Leu His Ala Tyr Leu Ala Ser Cys Gly Val Asp Gly Val<br>370 | 375 | 380 |
| Lys Val Asp Val Gln Asn Ile Ile Glu Thr Leu Gly Ala Gly His Gly<br>385 | 390 | 395 |
| Gly Arg Val Ser Leu Thr Arg Ser Tyr His His Ala Leu Glu Ala Ser<br>405 | 410 | 415 |
| Ile Ala Arg Asn Phe Ser Asp Asn Gly Cys Ile Ala Cys Met Cys His<br>420 | 425 | 430 |
| Asn Thr Asp Gly Leu Tyr Ser Ala Lys Gln Thr Ala Val Val Arg Ala<br>435 | 440 | 445 |
| Ser Asp Asp Phe Tyr Pro Arg Asp Pro Ala Ser His Thr Ile His Ile<br>450 | 455 | 460 |
| Ser Ser Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu Phe Met Gln Pro<br>465 | 470 | 475 |
| Asp Trp Asp Met Phe His Ser Leu His Pro Ala Ala Glu Tyr His Ala<br>485 | 490 | 495 |
| Ala Ala Arg Ala Ile Gly Gly Cys Pro Ile Tyr Val Ser Asp Lys Pro<br>500 | 505 | 510 |
| Gly Asn His Asn Phe Asp Leu Leu Lys Lys Leu Val Leu Ser Asp Gly<br>515 | 520 | 525 |
| Ser Val Leu Arg Ala Gln Leu Pro Gly Arg Pro Thr Arg Asp Ser Leu<br>530 | 535 | 540 |

Phe Val Asp Pro Ala Arg Asp Arg Thr Ser Leu Leu Lys Ile Trp Asn  
 545 550 555 560  
 Met Asn Lys Cys Thr Gly Val Val Gly Val Phe Asn Cys Gln Gly Ala  
 565 570 575  
 Gly Trp Cys Lys Val Glu Lys Lys Thr Arg Ile His Asp Ile Ser Pro  
 580 585 590  
 Gly Thr Leu Thr Ser Ser Val Cys Ala Ser Asp Val Asp Leu Ile Thr  
 595 600 605  
 Gln Val Ala Gly Ala Glu Trp His Gly Glu Thr Ile Val Tyr Ala Tyr  
 610 615 620  
 Arg Ser Gly Glu Val Ile Arg Leu Pro Lys Gly Val Ser Ile Pro Val  
 625 630 635 640  
 Thr Leu Lys Val Leu Glu Phe Glu Leu Phe His Phe Cys Pro Ile Gln  
 645 650 655  
 Glu Ile Ser Ser Ser Ile Ser Phe Ala Thr Ile Gly Leu Met Asp Met  
 660 665 670  
 Phe Asn Thr Gly Gly Ala Val Glu Glu Val Glu Ile His Arg Glu Thr  
 675 680 685  
 Asp Asn Lys Gln Glu Leu Phe Glu Gly Glu Ala Val Ser Ser Glu Leu  
 690 695 700  
 Ile Thr Ser Leu Gly Pro Asn Arg Thr Thr Thr Ala Thr Ile Thr Leu  
 705 710 715 720  
 Lys Val Arg Gly Ser Gly Lys Phe Gly Val Tyr Ser Ser Gln Arg Pro  
 725 730 735  
 Ile Lys Cys Met Val Asp Gly Thr Glu Thr Asp Phe Asn Tyr Asp Ser  
 740 745 750  
 Glu Thr Gly Leu Thr Thr Phe Ile Ile Pro Val Pro Gln Glu Glu Leu  
 755 760 765  
 Tyr Lys Trp Leu Ile Glu Ile Gln Val  
 770 775  
 <210> 12  
 <211> 753  
 <212> PRT  
 <213> Cucumis sativus  
 <400> 12  
 Met Thr Val Gly Ala Gly Ile Thr Ile Ser Asp Ala Asn Leu Thr Val  
 1 5 10 15  
 Leu Gly Asn Arg Val Leu Ser Asp Val His Asn Asn Ile Thr Leu Thr  
 20 25 30

Ala Ala Pro Gly Gly Gly Val Met Asn Gly Ala Phe Ile Gly Val Gln  
 35 40 45  
 Ser Asp Gln Ile Gly Ser Arg Arg Val Phe Pro Ile Gly Lys Leu Ile  
 50 55 60  
 Gly Leu Arg Phe Leu Cys Ala Phe Arg Phe Lys Leu Trp Trp Met Thr  
 65 70 75 80  
 Gln Arg Met Gly Cys Ser Gly Gln Glu Ile Pro Phe Glu Thr Gln Phe  
 85 90 95  
 Leu Val Val Glu Thr Arg Asp Gly Ser Asn Ile Ala Gly Asn Gly Glu  
 100 105 110  
 Glu Gly Asp Ala Val Tyr Thr Val Phe Leu Pro Ile Leu Glu Gly Asp  
 115 120 125  
 Phe Arg Ala Val Leu Gln Gly Asn Asp Asn Asn Glu Leu Glu Ile Cys  
 130 135 140  
 Leu Glu Ser Gly Asp Pro Ser Val Asp Gly Phe Glu Gly Ser His Leu  
 145 150 155 160  
 Val Phe Val Gly Ala Gly Ser Asp Pro Phe Glu Thr Ile Thr Tyr Ala  
 165 170 175  
 Val Lys Ser Val Glu Lys His Leu Gln Thr Phe Ala His Arg Glu Arg  
 180 185 190  
 Lys Lys Met Pro Asp Ile Leu Asn Trp Phe Gly Trp Cys Thr Trp Asp  
 195 200 205  
 Ala Phe Tyr Thr Asp Val Thr Ser Asp Gly Val Lys Lys Gly Leu Glu  
 210 215 220  
 Ser Phe Glu Asn Gly Gly Ile Pro Pro Lys Phe Val Ile Ile Asp Asp  
 225 230 235 240  
 Gly Trp Gln Ser Val Ala Lys Asp Ala Ala Ser Thr Asp Cys Lys Ala  
 245 250 255  
 Asp Asn Thr Ala Asn Phe Ala Asn Arg Leu Thr His Ile Lys Glu Asn  
 260 265 270  
 Tyr Lys Phe Gln Lys Asp Gly Lys Glu Gly Glu Arg Ile Glu Asn Pro  
 275 280 285  
 Ala Leu Gly Leu Gln His Ile Val Ser Tyr Met Lys Glu Lys His Ala  
 290 295 300  
 Thr Lys Tyr Val Tyr Val Trp His Ala Ile Thr Gly Tyr Trp Gly Gly  
 305 310 315 320

Val Ser Ser Gly Val Lys Glu Met Glu Gln Tyr Glu Ser Lys Ile Ala  
 325 330 335

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

Leu Asn Ser Ile Ser Lys Thr Gly Leu Gly Leu Val Asn Pro Glu Lys  
 355 360 365

Val Phe Asn Phe Tyr Asn Glu Gln His Ser Tyr Leu Ala Ser Ala Gly  
 370 375 380

Val Asp Gly Val Lys Val Asp Val Gln Asn Ile Leu Glu Thr Leu Gly  
 385 390 395 400

Ala Gly His Gly Gly Arg Val Lys Leu Ala Arg Lys Tyr His Gln Ala  
 405 410 415

Leu Glu Ala Ser Ile Ser Arg Asn Phe Gln Asp Asn Gly Ile Ile Ser  
 420 425 430

Cys Met Ser His Asn Thr Asp Gly Leu Tyr Ser Ser Lys Arg Asn Ala  
 435 440 445

Val Ile Arg Ala Ser Asp Asp Phe Trp Pro Arg Asp Pro Ala Ser His  
 450 455 460

Thr Ile His Ile Ala Ser Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu  
 465 470 475 480

Phe Met Gln Pro Asp Trp Asp Met Phe His Ser Leu His Pro Met Ala  
 485 490 495

Glu Tyr His Gly Ala Ala Arg Ala Val Gly Gly Cys Ala Ile Tyr Val  
 500 505 510

Ser Asp Lys Pro Gly Gln His Asp Phe Asn Leu Leu Lys Lys Leu Val  
 515 520 525

Leu His Asp Gly Ser Ile Leu Arg Ala Lys Leu Pro Gly Arg Pro Thr  
 530 535 540

Lys Asp Cys Leu Phe Ala Asp Pro Ala Arg Asp Gly Lys Ser Leu Leu  
 545 550 555 560

Lys Ile Trp Asn Met Asn Asp Leu Ser Gly Val Val Gly Val Phe Asn  
 565 570 575

Cys Gln Gly Ala Gly Trp Cys Lys Val Gly Lys Lys Asn Leu Ile His  
 580 585 590

Asp Glu Asn Pro Asp Thr Ile Thr Gly Val Ile Arg Ala Lys Asp Val  
 595 600 605

Ser Tyr Leu Trp Lys Ile Ala Gly Glu Ser Trp Thr Gly Asp Ala Val  
 610 615 620

Ile Phe Ser His Leu Ala Gly Glu Val Val Tyr Leu Pro Gln Asp Ala  
625 630 635 640

Ser Met Pro Ile Thr Leu Lys Ser Arg Glu Phe Asp Val Phe Thr Val  
645 650 655

Val Pro Val Lys Glu Leu Ala Asn Asp Ile Lys Phe Ala Pro Ile Gly  
660 665 670

Leu Met Lys Met Phe Asn Ser Gly Gly Ala Val Lys Glu Met Asn His  
675 680 685

Gln Pro Gly Ser Ser Asn Val Ser Leu Lys Val Arg Gly Ser Gly Pro  
690 695 700

Phe Gly Ala Tyr Ser Ser Ser Lys Pro Lys Arg Val Ala Val Asp Ser  
705 710 715 720

Glu Glu Val Glu Phe Ile Tyr Asp Glu Gly Gly Leu Ile Thr Ile Asp  
725 730 735

Leu Lys Val Pro Glu Lys Glu Leu Tyr Leu Trp Asp Ile Arg Ile Glu  
740 745 750

Leu

<210> 13  
<211> 772  
<212> PRT  
<213> Cucumis melo

<400> 13

Met Thr Val Thr Pro Lys Ile Ser Val Asn Asp Gly Asn Leu Val Val  
1 5 10 15

His Gly Lys Thr Ile Leu Thr Gly Val Pro Asp Asn Ile Val Leu Thr  
20 25 30

Pro Gly Ser Gly Leu Gly Leu Val Ala Gly Ala Phe Ile Gly Ala Thr  
35 40 45

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

Gly Thr Arg Phe Leu Cys Cys Phe Arg Phe Lys Leu Trp Trp Met Thr  
65 70 75 80

Gln Arg Met Gly Thr Ser Gly Arg Asp Ile Pro Phe Glu Thr Gln Phe  
85 90 95

Leu Leu Met Glu Ser Lys Gly Asn Asp Gly Glu Asp Pro Asp Asn Ser  
100 105 110

Ser Thr Ile Tyr Thr Val Phe Leu Pro Leu Leu Glu Gly Gln Phe Arg

|                                                                 |     |     |
|-----------------------------------------------------------------|-----|-----|
| 115                                                             | 120 | 125 |
| Ala Ala Leu Gln Gly Asn Glu Lys Asn Glu Met Glu Ile Cys Leu Glu |     |     |
| 130                                                             | 135 | 140 |
| Ser Gly Asp Asn Thr Val Glu Thr Asn Gln Gly Leu Ser Leu Val Tyr |     |     |
| 145                                                             | 150 | 155 |
| Met His Ala Gly Thr Asn Pro Phe Glu Val Ile Thr Gln Ala Val Lys |     |     |
|                                                                 | 165 | 170 |
| Ala Val Glu Lys His Thr Gln Thr Phe Leu His Arg Glu Lys Lys Lys |     |     |
|                                                                 | 180 | 185 |
| Leu Pro Ser Phe Leu Asp Trp Phe Gly Trp Cys Thr Trp Asp Ala Phe |     |     |
|                                                                 | 195 | 200 |
| Tyr Thr Asp Ala Thr Ala Glu Gly Val Val Glu Gly Leu Lys Ser Leu |     |     |
|                                                                 | 210 | 215 |
| Ser Glu Gly Gly Ala Pro Pro Lys Phe Leu Ile Ile Asp Asp Gly Trp |     |     |
| 225                                                             | 230 | 235 |
| Gln Gln Ile Glu Ala Lys Pro Lys Asp Ala Asp Cys Val Val Gln Glu |     |     |
|                                                                 | 245 | 250 |
| Gly Ala Gln Phe Ala Ser Arg Leu Ser Gly Ile Lys Glu Asn His Lys |     |     |
|                                                                 | 260 | 265 |
| Phe Gln Lys Asn Gly Asn Asn Tyr Asp Gln Val Pro Gly Leu Lys Val |     |     |
|                                                                 | 275 | 280 |
| Val Val Asp Asp Ala Lys Lys Gln His Lys Val Lys Phe Val Tyr Ala |     |     |
|                                                                 | 290 | 295 |
| Trp His Ala Leu Ala Gly Tyr Trp Gly Gly Val Lys Pro Ala Ser Pro |     |     |
| 305                                                             | 310 | 315 |
| Gly Met Glu His Tyr Asp Ser Ala Leu Ala Tyr Pro Val Gln Ser Pro |     |     |
|                                                                 | 325 | 330 |
| Gly Met Leu Gly Asn Gln Pro Asp Ile Val Val Asp Ser Leu Ala Val |     |     |
|                                                                 | 340 | 345 |
| His Gly Ile Gly Leu Val His Pro Lys Lys Val Phe Asn Phe Tyr Asn |     |     |
|                                                                 | 355 | 360 |
| Glu Leu His Ser Tyr Leu Ala Ser Cys Gly Ile Asp Gly Val Lys Val |     |     |
|                                                                 | 370 | 375 |
| Asp Val Gln Asn Ile Ile Glu Thr Leu Gly Ala Gly His Gly Gly Arg |     |     |
| 385                                                             | 390 | 395 |
| Val Thr Leu Thr Arg Ser Tyr His Gln Ala Leu Glu Ala Ser Ile Ala |     |     |
|                                                                 | 405 | 410 |
|                                                                 |     | 415 |

Arg Asn Phe Ser Asp Asn Gly Cys Ile Ala Cys Met Cys His Asn Thr  
 420 425 430  
 Asp Ser Leu Tyr Ser Ala Lys Gln Thr Ala Val Val Arg Ala Ser Asp  
 435 440 445  
 Asp Tyr Tyr Pro Arg Asp Pro Thr Ser His Thr Ile His Ile Ser Ser  
 450 455 460  
 Val Ala Tyr Asn Ser Leu Phe Leu Gly Glu Phe Met Gln Pro Asp Trp  
 465 470 475 480  
 Asp Met Phe His Ser Leu His Pro Thr Ala Glu Tyr His Gly Ala Ala  
 485 490 495  
 Arg Ala Ile Gly Gly Cys Ala Ile Tyr Val Ser Asp Lys Pro Gly Asn  
 500 505 510  
 His Asn Phe Asp Leu Leu Lys Lys Leu Val Leu Pro Asp Gly Ser Val  
 515 520 525  
 Leu Arg Ala Gln Leu Pro Gly Arg Pro Thr Arg Asp Ser Leu Phe Asn  
 530 535 540  
 Asp Pro Ala Arg Asp Gly Ile Ser Leu Leu Lys Ile Trp Asn Met Asn  
 545 550 555 560  
 Lys Cys Ser Gly Val Val Gly Val Phe Asn Cys Gln Gly Ala Gly Trp  
 565 570 575  
 Cys Arg Ile Thr Lys Lys Thr Arg Ile His Asp Glu Ser Pro Gly Thr  
 580 585 590  
 Leu Thr Thr Ser Val Arg Ala Ala Asp Val Asp Ala Ile Ser Gln Val  
 595 600 605  
 Ala Gly Ala Asp Trp Lys Gly Asp Thr Ile Val Tyr Ala Tyr Arg Ser  
 610 615 620  
 Gly Asp Leu Ile Arg Leu Pro Lys Gly Ala Ser Val Pro Val Thr Leu  
 625 630 635 640  
 Lys Val Leu Glu Tyr Asp Leu Leu His Ile Ser Pro Leu Lys Asp Ile  
 645 650 655  
 Ala Ser Asn Ile Ser Phe Ala Pro Ile Gly Leu Leu Asp Met Phe Asn  
 660 665 670  
 Thr Gly Gly Ala Val Glu Gln Val Asn Val Gln Val Val Glu Pro Ile  
 675 680 685  
 Pro Glu Phe Asp Gly Glu Val Ala Ser Glu Leu Thr Cys Ser Leu Pro  
 690 695 700  
 Asn Asp Arg Pro Pro Thr Ala Thr Ile Thr Met Lys Ala Arg Gly Cys

705                      710                      715                      720  
 Arg Arg Phe Gly Leu Tyr Ser Ser Gln Arg Pro Leu Lys Cys Ser Val  
                                  725                      730                      735  
 Asp Lys Val Asp Val Asp Phe Val Tyr Asp Glu Val Thr Gly Leu Val  
                                  740                      745                      750  
 Thr Phe Glu Ile Pro Ile Pro Thr Glu Glu Met Tyr Arg Trp Asp Ile  
                                  755                      760                      765  
 Glu Ile Gln Val  
                                  770  
 <210> 14  
 <211> 378  
 <212> PRT  
 <213> Coffea arabica  
 <400> 14  
 Met Val Lys Ser Pro Gly Thr Glu Asp Tyr Thr Arg Arg Ser Leu Leu  
 1                                      5                                      10                                      15  
 Ala Asn Gly Leu Gly Leu Thr Pro Pro Met Gly Trp Asn Ser Trp Asn  
                                  20                                      25                                      30  
 His Phe Arg Cys Asn Leu Asp Glu Lys Leu Ile Arg Glu Thr Ala Asp  
                                  35                                      40                                      45  
 Ala Met Val Ser Lys Gly Leu Ala Ala Leu Gly Tyr Lys Tyr Ile Asn  
                                  50                                      55                                      60  
 Leu Asp Asp Cys Trp Ala Glu Leu Asn Arg Asp Ser Gln Gly Asn Leu  
 65                                      70                                      75                                      80  
 Val Pro Lys Gly Ser Thr Phe Pro Ser Gly Ile Lys Ala Leu Ala Asp  
                                  85                                      90                                      95  
 Tyr Val His Ser Lys Gly Leu Lys Leu Gly Ile Tyr Ser Asp Ala Gly  
                                  100                                      105                                      110  
 Thr Gln Thr Cys Ser Lys Thr Met Pro Gly Ser Leu Gly His Glu Glu  
                                  115                                      120                                      125  
 Gln Asp Ala Lys Thr Phe Ala Ser Trp Gly Val Asp Tyr Leu Lys Tyr  
                                  130                                      135                                      140  
 Asp Asn Cys Asn Asn Asn Asn Ile Ser Pro Lys Glu Arg Tyr Pro Ile  
 145                                      150                                      155                                      160  
 Met Ser Lys Ala Leu Leu Asn Ser Gly Arg Ser Ile Phe Phe Ser Leu  
                                  165                                      170                                      175  
 Cys Glu Trp Gly Glu Glu Asp Pro Ala Thr Trp Ala Lys Glu Val Gly  
                                  180                                      185                                      190

Asn Ser Trp Arg Thr Thr Gly Asp Ile Asp Asp Ser Trp Ser Ser Met  
 195 200 205  
 Thr Ser Arg Ala Asp Met Asn Asp Lys Trp Ala Ser Tyr Ala Gly Pro  
 210 215 220  
 Gly Gly Trp Asn Asp Pro Asp Met Leu Glu Val Gly Asn Gly Gly Met  
 225 230 235 240  
 Thr Thr Thr Glu Tyr Arg Ser His Phe Ser Ile Trp Ala Leu Ala Lys  
 245 250 255  
 Ala Pro Leu Leu Ile Gly Cys Asp Ile Arg Ser Met Asp Gly Ala Thr  
 260 265 270  
 Phe Gln Leu Leu Ser Asn Ala Glu Val Ile Ala Val Asn Gln Asp Lys  
 275 280 285  
 Leu Gly Val Gln Gly Asn Lys Val Lys Thr Tyr Gly Asp Leu Glu Val  
 290 295 300  
 Trp Ala Gly Pro Leu Ser Gly Lys Arg Val Ala Val Ala Leu Trp Asn  
 305 310 315 320  
 Arg Gly Ser Ser Thr Ala Thr Ile Thr Ala Tyr Trp Ser Asp Val Gly  
 325 330 335  
 Leu Pro Ser Thr Ala Val Val Asn Ala Arg Asp Leu Trp Ala His Ser  
 340 345 350  
 Thr Glu Lys Ser Val Lys Gly Gln Ile Ser Ala Ala Val Asp Ala His  
 355 360 365  
 Asp Ser Lys Met Tyr Val Leu Thr Pro Gln  
 370 375