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<120> NOVEL PROTEINS

<130> DUC-C-P2019PCT

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<170> PatentIn version 3.5

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Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
35 40 45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
50 55 60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65 70 75 80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
85 90 95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
100 105 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
115 120 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145 150 155 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
165 170 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
180 185 190

Thr Ser Val Thr Ser Ile Leu His Ile Lys Asp Pro Lys Asn Gln Val

195 200 205

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
210 215 220

Phe Lys Gln Thr Val Asn Lys Gly Tyr Trp Phe Ser Val Pro Leu Leu
225 230 235 240

Leu Ser Ile Val Ser Leu Val Ile Leu Leu Val Leu Ile Ser Ile Leu
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Leu Tyr Trp Lys Arg His Arg Asn Gln Asp Arg Gly Glu Leu Ser Gln
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Gly Val Gln Lys Met Thr
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Thr Trp Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe
35 40 45

Ser Glu Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile
50 55 60

Asn Ile Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn
65 70 75 80

Ile Thr Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe
85 90 95

Gly Phe Gly Lys Ile Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln
100 105 110

Pro Ile Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile
115 120 125

Thr Cys Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val
130 135 140

Pro Arg Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn
145 150 155 160

Gly Thr Thr Ser Val Thr Ser Ile Leu His Ile Lys Asp Pro Lys Asn
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180 185 190

Thr Asp Phe Lys Gln Thr Val Asn Lys
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Thr Trp Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe
35 40 45

Ser Glu Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile
50 55 60

Asn Ile Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn
65 70 75 80

Ile Thr Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe
85 90 95

Gly Phe Gly Tyr Ile Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln
100 105 110

Pro Ile Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile
115 120 125

Thr Cys Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val
130 135 140

Pro Arg Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn
145 150 155 160

Gly Thr Thr Ser Val Thr Ser Ile Leu His Ile Lys Asp Pro Lys Asn
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Gln Val Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val
180 185 190

Thr Asp Phe Lys Gln Thr Val Asn Lys
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Thr Trp Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe
35 40 45

Ser Glu Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile
50 55 60

Asn Ile Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn
65 70 75 80

Ile Thr Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe
85 90 95

Gly Phe Gly Lys Tyr Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln
100 105 110

Pro Ile Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile
115 120 125

Thr Cys Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val
130 135 140

Pro Arg Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn
145 150 155 160

Gly Thr Thr Ser Val Thr Ser Ile Leu His Ile Lys Asp Pro Lys Asn
165 170 175

Gln Val Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val
180 185 190

Thr Asp Phe Lys Gln Thr Val Asn Lys
195 200

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Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
20 25 30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
35 40 45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
50 55 60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65 70 75 80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
85 90 95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
100 105 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
115 120 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145 150 155 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
165 170 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
180 185 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
210 215 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225 230 235 240

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Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                405                 410                 415

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

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
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Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
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Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
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Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125

Gly Tyr Ile Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln Pro Ile
    130                 135                 140

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270
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Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350


Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365


Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                405                 410                 415


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


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
        435                 440                 445


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
    450                 455                 460


Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470


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Met Glu Arg Leu Val Ile Arg Met Pro Phe Ser His Leu Ser Thr Tyr
1               5                   10                  15


Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30
```

```
Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300
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Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350


Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365


Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                405                 410                 415


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


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
        435                 440                 445


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
    450                 455                 460


Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470


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Met Glu Arg Leu Val Ile Arg Met Pro Phe Ser His Leu Ser Thr Tyr
1               5                   10                  15


Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30


Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45


Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60
```

```
Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335
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Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                405                 410                 415

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

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
        435                 440                 445

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
    450                 455                 460

Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
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Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95
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```
Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Arg
        115                 120                 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365
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Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                405                 410                 415

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

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
        435                 440                 445

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
    450                 455                 460

Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470
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Met Glu Arg Leu Val Ile Arg Met Pro Phe Ser His Leu Ser Thr Tyr
1               5                   10                  15

Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Lys His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125
```

```
Gly Lys Ile Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln Pro Ile
    130                 135                 140

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
                245                 250                 255

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
            260                 265                 270

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
        275                 280                 285

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
    290                 295                 300

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
305                 310                 315                 320

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
                325                 330                 335

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
            340                 345                 350

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
        355                 360                 365

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
    370                 375                 380

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
385                 390                 395                 400
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Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
405 410 415

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

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
435 440 445

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
450 455 460

Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470

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Met Glu Arg Leu Val Ile Arg Met Pro Phe Ser His Leu Ser Thr Tyr
1 5 10 15

Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
20 25 30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
35 40 45

Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
50 55 60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65 70 75 80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
85 90 95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr

```
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125

Gly Tyr Ile Ser Gly Thr Ala Cys Leu Thr Val Tyr Val Gln Pro Ile
    130                 135                 140

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Tyr Trp Phe Ser Val Pro Leu Leu
225                 230                 235                 240

Leu Ser Ile Val Ser Leu Val Ile Leu Leu Val Leu Ile Ser Ile Leu
                245                 250                 255

Leu Tyr Trp Lys Arg His Arg Asn Gln Asp Arg Gly Glu Leu Ser Gln
            260                 265                 270

Gly Val Gln Lys Met Thr
        275


<210>  13
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<220>
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Met Glu Arg Leu Val Ile Arg Met Pro Phe Ser His Leu Ser Thr Tyr
1               5                   10                  15

Ser Leu Val Trp Val Met Ala Ala Val Val Leu Cys Thr Ala Gln Val
            20                  25                  30

Gln Val Val Thr Gln Asp Glu Arg Glu Gln Leu Tyr Thr Pro Ala Ser
        35                  40                  45
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Leu Lys Cys Ser Leu Gln Asn Ala Gln Glu Ala Leu Ile Val Thr Trp
    50                  55                  60

Gln Lys Lys Lys Ala Val Ser Pro Glu Asn Met Val Thr Phe Ser Glu
65                  70                  75                  80

Asn His Gly Val Val Ile Gln Pro Ala Tyr Lys Asp Lys Ile Asn Ile
                85                  90                  95

Thr Gln Leu Gly Leu Gln Asn Ser Thr Ile Thr Phe Trp Asn Ile Thr
            100                 105                 110

Leu Glu Asp Glu Gly Cys Tyr Met Cys Leu Phe Asn Thr Phe Gly Phe
        115                 120                 125

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

Val Ser Leu His Tyr Lys Phe Ser Glu Asp His Leu Asn Ile Thr Cys
145                 150                 155                 160

Ser Ala Thr Ala Arg Pro Ala Pro Met Val Phe Trp Lys Val Pro Arg
                165                 170                 175

Ser Gly Ile Glu Asn Ser Thr Val Thr Leu Ser His Pro Asn Gly Thr
            180                 185                 190

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

Gly Lys Glu Val Ile Cys Gln Val Leu His Leu Gly Thr Val Thr Asp
    210                 215                 220

Phe Lys Gln Thr Val Asn Lys Gly Tyr Trp Phe Ser Val Pro Leu Leu
225                 230                 235                 240

Leu Ser Ile Val Ser Leu Val Ile Leu Leu Val Leu Ile Ser Ile Leu
                245                 250                 255

Leu Tyr Trp Lys Arg His Arg Asn Gln Asp Arg Gly Glu Leu Ser Gln
            260                 265                 270

Gly Val Gln Lys Met Thr
        275
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