SEQUENCE LISTING

<110> A1M Pharma AB, Medicon Village, 223 81 Lund, Sweden

<120> Novel alpha-1-microglobulin derived proteins and their use

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<160> 95

<170> BiSSAP 1.3

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<213> Homo sapiens

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Thr	Cys	Pro	Trp	Leu	Lys	Lys	Ile	Met	Asp	Arg	Met	Thr	Val	Ser	Thr
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Leu	Val	Leu	Gly	Glu	Gly	Ala	Thr	Glu	Ala	Glu	Ile	Ser	Met	Thr	Ser
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Thr	Arg	Trp	Arg	Lys	Gly	Val	Cys	Glu	Glu	Thr	Ser	Gly	Ala	Tyr	Glu
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Lys	Thr	Asp	Thr	Asp	Gly	Lys	Phe	Leu	Tyr	His	Lys	Ser	Lys	Trp	Asn
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Ile	Thr	Met	Glu	Ser	Tyr	Val	Val	His	Thr	Asn	Tyr	Asp	Glu	Tyr	Ala
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Ile	Phe	Leu	Thr	Lys	Lys	Phe	Ser	Arg	His	His	Gly	Pro	Thr	Ile	Thr
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Ala	Lys	Leu	Tyr	Gly	Arg	Ala	Pro	Gln	Leu	Arg	Glu	Thr	Leu	Leu	Gln
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Asp	Phe	Arg	Val	Val	Ala	Gln	Gly	Val	Gly	Ile	Pro	Glu	Asp	Ser	Ile
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Phe	Thr	Met	Ala	Asp	Arg	Gly	Glu	Cys	Val	Pro	Gly	Glu	Gln	Glu	Pro
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Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly
            20                  25                  30
Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser
        35                  40                  45
Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr
    50                  55                  60
Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr
65                  70                  75                  80
Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp
                85                  90                  95
Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr
            100                 105                 110
Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile
        115                 120                 125
Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu
    130                 135                 140
Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser
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Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu
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Pro Glu Pro Ile Leu Ile Pro Arg
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Phe Asp Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly
            20                  25                  30
Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser
        35                  40                  45
Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr
    50                  55                  60
Ser Thr His Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr
65                  70                  75                  80
Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp
                85                  90                  95
Asp Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr
            100                 105                 110
Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile
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        115                 120                 125
Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu
    130                 135                 140
Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser
145                 150                 155                 160
Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu
                165                 170                 175
Pro Glu Pro Ile Leu Ile Pro Arg
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            20                  25                  30
Ser Thr Cys Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser
        35                  40                  45
Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr
    50                  55                  60
Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr
65                  70                  75                  80
Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp
                85                  90                  95
Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr
            100                 105                 110
Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile
        115                 120                 125
Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu
    130                 135                 140
Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser
145                 150                 155                 160
Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu
                165                 170                 175
Pro Glu Pro Ile Leu Ile Pro Arg
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<223> 6His, N17,96D; R66H
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            20   25   30
Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys Pro Trp
        35   40   45
Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val Leu Gly
    50   55   60
Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His Trp Arg
65   70   75   80
Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr Asp Thr
                85   90   95
Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr Met Glu
            100   105   110
Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe Leu Thr
        115   120   125
Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys Leu Tyr
    130   135   140
Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe Arg Val
145   150   155   160
Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr Met Ala
                165   170   175
Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro Ile Leu
            180   185   190
Ile Pro Arg
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<210> 6
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<223> hA1M, 6His, M41K

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Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asn Ile Ser Arg
            20   25   30
Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys Pro Trp
        35   40   45
Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val Leu Gly
    50   55   60
Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg Trp Arg
65   70   75   80
Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr Asp Thr
                85   90   95
Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr Met Glu
            100   105   110
Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe Leu Thr

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        115                 120                 125
Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys Leu Tyr
    130                 135                 140
Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe Arg Val
145                 150                 155                 160
Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr Met Ala
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Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro Ile Leu
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Ile Pro Arg
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Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35                  40                  45
Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val
    50                  55                  60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His
65                  70                  75                  80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85                  90                  95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr
            100                 105                 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115                 120                 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
    130                 135                 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145                 150                 155                 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
                165                 170                 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
            180                 185                 190
Ile Leu Ile Pro Arg
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Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35   40   45
Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val
    50   55   60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg
65   70   75   80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85   90   95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr
            100   105   110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115   120   125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
    130   135   140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145   150   155   160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
                165   170   175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
            180   185   190
Ile Leu Ile Pro Arg
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            20   25   30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35   40   45
Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val
    50   55   60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg
65   70   75   80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr

eolf-seql

85 90 95

Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr
100 105 110

Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
115 120 125

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

Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160

Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
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Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
180 185 190

Ile Leu Ile Pro Arg
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Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
35 40 45
Pro Trp Leu Lys Lys Ile Xaa Asp Arg Met Thr Val Ser Thr Leu Val
50 55 60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Xaa
65 70 75 80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
85 90 95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Xaa Ile Thr
100 105 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
115 120 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
130 135 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
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35 40 45
Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile
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35 40 45
Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile
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20 25 30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
35 40 45
Pro Trp Leu Lys Lys Ile Xaa Asp Arg Met Thr Val Ser Thr Leu Val
50 55 60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Xaa
65 70 75 80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
85 90 95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Xaa Ile Thr
100 105 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
115 120 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
130 135 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
165 170 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
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Ile

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20 25 30
Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser
35 40 45
Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr

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    50                  55                  60
Ser Thr His Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr
65                  70                  75                  80
Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp
                85                  90                  95
Asp Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr
            100                 105                 110
Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile
        115                 120                 125
Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu
    130                 135                 140
Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser
145                 150                 155                 160
Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu
                165                 170                 175
Pro Glu Pro Ile
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<400> 19
Met Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn
1               5                   10                  15
Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly
            20                  25                  30
Ser Thr Cys Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser
        35                  40                  45
Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr
    50                  55                  60
Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr
65                  70                  75                  80
Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp
                85                  90                  95
Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr
            100                 105                 110
Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile
        115                 120                 125
Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu
    130                 135                 140
Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser
145                 150                 155                 160
Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu
                165                 170                 175
Pro Glu Pro Ile Leu Ile Pro Arg
            180
```

<210> 20
<211> 191
<212> PRT
<213> Homo sapiens

<220>
<223> 6His, N17,96D; R66H; truncated

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

<210> 21
<211> 191
<212> PRT
<213> Homo sapiens

<220>
<223> hA1M, 6His, M41K; truncated

<400> 21
Met His His His His His His Asp Asp Asp Asp Lys Gly Pro Val Pro
1   5   10   15
Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asn Ile Ser Arg
            20   25   30
Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys Pro Trp
        35   40   45
Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val Leu Gly

```
    50                  55                  60
Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg Trp Arg
65                  70                  75                  80
Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr Asp Thr
                85                  90                  95
Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr Met Glu
            100                 105                 110
Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe Leu Thr
        115                 120                 125
Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys Leu Tyr
    130                 135                 140
Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe Arg Val
145                 150                 155                 160
Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr Met Ala
                165                 170                 175
Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro Ile Leu
            180                 185                 190
Ile Pro Arg
        195
```

<210> 22
<211> 193
<212> PRT
<213> Homo sapiens

<220>
<223> 8His, N17,96D; R66H; truncated

<400> 22

```
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1               5                   10                  15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asp Ile
            20                  25                  30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35                  40                  45
Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val
    50                  55                  60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His
65                  70                  75                  80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85                  90                  95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr
            100                 105                 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115                 120                 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
    130                 135                 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145                 150                 155                 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
                165                 170                 175
```

Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
180 185 190
Ile

<210> 23
<211> 193
<212> PRT
<213> Homo sapiens

<220>
<223> hA1M, 8His, M41K; truncated

<400> 23
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1 5 10 15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asn Ile
20 25 30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
35 40 45
Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val
50 55 60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg
65 70 75 80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
85 90 95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr
100 105 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
115 120 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
130 135 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
165 170 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
180 185 190
Ile Leu Ile Pro Arg
195

<210> 24
<211> 200
<212> PRT
<213> Mus <mouse, genus>

<220>
<223> 1.M8H5GIEGR-Mouse

<400> 24

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

<210> 25
<211> 201
<212> PRT
<213> Heterocephalus glaber

<220>
<223> 2. M8H5GIEGR-Naked Mole rat

<400> 25
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                  10                  15
Gly Arg Asn Pro Val Pro Met Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asp Glu Ser Arg Ile Tyr Gly Lys Trp Phe Asn Leu Ala Thr
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Arg Ile Lys Asp Arg Leu Ser Val
    50                  55                  60
Ser Thr Met Val Leu Gly Lys Gly Thr Thr Glu Thr Gln Ile Ser Thr
65                  70                  75                  80
Thr His Thr His Trp Arg Gln Gly Val Cys Gln Glu Thr Ser Gly Val
                85                  90                  95
Tyr Lys Lys Thr Asp Thr Ala Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Val Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
```

```
Tyr Ala Ile Ile Leu Thr Lys Lys Phe Ser His His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Glu Pro Arg Leu Arg Asp Ser Leu
145                 150                 155                 160
Leu Gln Glu Phe Arg Glu Met Ala Leu Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asn Arg Gly Glu Cys Val Pro Gly Asp Gln
            180                 185                 190
Ala Pro Glu Ser Thr Pro Ala Pro Arg
        195                 200
```

<210> 26
<211> 197
<212> PRT
<213> Anura

<220>
<223> 3. M8H5GIEGR-Frog

<400> 26

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

<210> 27
<211> 197
<212> PRT
<213> Gallus

<220>
<223> 4. M8H5GIEGR-Chicken

<400> 27
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1   5   10   15
Gly Arg Thr Pro Val Gly Asp Gln Asp Glu Asp Ile Gln Val Gln Glu
            20   25   30
Asn Phe Glu Pro Glu Arg Met Tyr Gly Lys Trp Tyr Asp Val Ala Val
        35   40   45
Gly Thr Thr Cys Lys Trp Met Lys Asn Tyr Lys Glu Lys Phe Ser Met
    50   55   60
Gly Thr Leu Val Leu Gly Pro Gly Pro Ser Ala Asp Gln Ile Ser Thr
65   70   75   80
Ile Ser Thr Arg Leu Arg Gln Gly Asp Cys Lys Arg Val Ser Gly Glu
                85   90   95
Tyr Gln Lys Thr Asp Thr Pro Gly Lys Tyr Thr Tyr Tyr Asn Pro Lys
            100   105   110
Trp Asp Val Ser Ile Lys Ser Tyr Val Leu Arg Thr Asn Tyr Glu Glu
        115   120   125
Tyr Ala Val Ile Leu Met Lys Lys Thr Ser Asn Phe Gly Pro Thr Thr
    130   135   140
Thr Leu Lys Leu Tyr Gly Arg Ser Pro Glu Leu Arg Glu Glu Leu Thr
145   150   155   160
Glu Ala Phe Gln Gln Leu Ala Leu Glu Met Gly Ile Pro Ala Asp Ser
                165   170   175
Val Phe Ile Leu Ala Asn Lys Gly Glu Cys Val Pro Gln Glu Thr Ala
            180   185   190
Thr Ala Pro Glu Arg
        195

<210> 28
<211> 201
<212> PRT
<213> Oryctolagus cuniculus

<220>
<223> 5. M8H5GIEGR-Rabbit

<400> 28
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1   5   10   15
Gly Arg Asp Pro Val Pro Thr Leu Pro Asp Asp Ile Gln Val Gln Glu
            20   25   30
Asn Phe Glu Leu Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Val
        35   40   45
Gly Ser Thr Cys Pro Trp Leu Lys Arg Ile Lys Asp Arg Met Ala Val
    50   55   60
Ser Thr Leu Val Leu Gly Glu Gly Thr Ser Glu Thr Glu Ile Ser Met
65   70   75   80
Thr Ser Thr His Trp Arg Arg Gly Val Cys Glu Glu Ile Ser Gly Ala
                85   90   95

Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ala Lys
100 105 110
Trp Asn Leu Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg Arg His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Glu Pro Gln Leu Arg Glu Ser Leu
145 150 155 160
Leu Gln Glu Phe Arg Glu Val Ala Leu Gly Val Gly Ile Pro Glu Asn
165 170 175
Ser Ile Phe Thr Met Ile Asp Arg Gly Glu Cys Val Pro Gly Gln Gln
180 185 190
Glu Pro Lys Pro Ala Pro Val Leu Arg
195 200

<210> 29
<211> 201
<212> PRT
<213> Saimiri

<220>
<223> 6. M8H5GIEGR-SQ Monkey

<400> 29
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Ser Pro Val Pro Thr Pro Pro Glu Gly Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Leu Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Leu Lys Val
50 55 60
Ser Thr Leu Val Leu Glu Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr Arg Trp Arg Lys Gly Phe Cys Glu Gln Thr Ser Trp Ala
85 90 95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Glu Pro Lys
100 105 110
Trp Asn Val Thr Met Glu Ser Tyr Val Ala His Thr Asn Tyr Glu Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Glu Pro Gln Leu Arg Glu Ser Leu
145 150 155 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asn Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Gln Pro Ile Leu His Arg Arg
195 200

<210> 30

<211> 201
<212> PRT
<213> Odobenus

<220>
<223> 7. M8H5GIEGR-Walrus

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

<210> 31
<211> 200
<212> PRT
<213> Trichechus

<220>
<223> 8. M8H5GIEGR-Manatee

<400> 31
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Ser Pro Val Lys Thr Pro Leu Asn Asp Ile Gln Val Gln Glu
20 25 30
Asn Phe Asp Leu Pro Arg Ile Tyr Gly Lys Trp Phe Asn Ile Ala Ile
35 40 45
Gly Ser Thr Cys Gln Trp Leu Lys Arg Leu Lys Ala Gly Pro Thr Met
50 55 60

```
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Asp Thr Glu Ile Ser Thr
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Phe Cys Glu Glu Ile Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Ala Gly Lys Phe Leu Tyr His Gly Ser Lys
            100                 105                 110
Trp Asn Val Thr Leu Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg Tyr Gly Leu Thr Ile
    130                 135                 140
Thr Ala Lys Leu Tyr Gly Arg Gln Pro Gln Val Arg Glu Ser Leu Leu
145                 150                 155                 160
Glu Glu Phe Arg Glu Phe Ala Leu Gly Val Gly Ile Pro Glu Asp Ser
                165                 170                 175
Ile Phe Thr Thr Ala Asp Lys Gly Glu Cys Val Pro Gly Glu Gln Glu
            180                 185                 190
Pro Glu Pro Thr Ala Ala Leu Arg
        195                 200
```

<210> 32
<211> 202
<212> PRT
<213> Pleuronectes platessa

<220>
<223> 9. M8H5GIEGR-Plaice

<400> 32

```
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Leu Pro Val Leu Pro Glu Pro Leu Tyr Pro Thr Gln Glu Asn
            20                  25                  30
Phe Asp Leu Thr Arg Phe Val Gly Thr Trp His Asp Val Ala Leu Thr
        35                  40                  45
Ser Ser Cys Pro His Met Gln Arg Asn Arg Ala Asp Ala Ala Ile Gly
    50                  55                  60
Lys Leu Val Leu Glu Lys Asp Thr Gly Asn Lys Leu Lys Val Thr Arg
65                  70                  75                  80
Thr Arg Leu Arg His Gly Thr Cys Val Glu Met Ser Gly Glu Tyr Glu
                85                  90                  95
Leu Thr Ser Thr Pro Gly Arg Ile Phe Tyr His Ile Asp Arg Trp Asp
            100                 105                 110
Ala Asp Val Asp Ala Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala
        115                 120                 125
Ile Ile Ile Met Ser Lys Gln Lys Thr Ser Gly Glu Asn Ser Thr Ser
    130                 135                 140
Leu Lys Leu Tyr Ser Arg Thr Met Ser Val Arg Asp Thr Val Leu Asp
145                 150                 155                 160
Asp Phe Lys Thr Leu Val Arg His Gln Gly Met Ser Asp Asp Thr Ile
                165                 170                 175
Ile Ile Lys Gln Asn Lys Gly Asp Cys Ile Pro Gly Glu Gln Val Glu
            180                 185                 190
```

Glu Ala Pro Ser Gln Pro Glu Pro Lys Arg
195 200

<210> 33
<211> 201
<212> PRT
<213> Pongo

<220>
<223> 10. M8H5GIEGR-Orangutan

<400> 33
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
85 90 95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
100 105 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg Arg His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145 150 155 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 34
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 11. M8H5GIEGR-Human P35K

<400> 34
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30

```
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Lys Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200
```

<210> 35
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 12. M8H5GIEGR-Human M41K

<400> 35

```
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
```

Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 36
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 13. M8H5GIEGR-Human R66H

<400> 36
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr His Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
85 90 95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
100 105 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145 150 155 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 37
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 14. M8H5GIEGR-Human T75K

<400> 37

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

<210> 38
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 15. M8H5GIEGR-Human T75Y

<400> 38

```
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                  10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Tyr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
```

```
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200
```

<210> 39
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 16. M8H5GIEGR-Human M99K

<400> 39

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

<210> 40
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 17. M8H5GIEGR-Human S101Y

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

<210> 41
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 18. M8H5GIEGR-Human K69.92.118.130R

<400> 41
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr Arg Trp Arg Arg Gly Val Cys Glu Glu Thr Ser Gly Ala
85 90 95

```
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Arg Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Arg Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Arg Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200
```

<210> 42
<211> 198
<212> PRT
<213> Latimeria

<220>
<223> 19. M8H5GIEGR-Coelacanth

<400> 42

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

<210> 43

<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 21. M8H5GIEGR-Human L89T

<400> 43
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
85 90 95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Thr Tyr His Lys Ser Lys
100 105 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145 150 155 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 44
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 22. M8H5GIEGR-Human N1796D

<400> 44
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asp Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60

```
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asp Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200
```

<210> 45
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 23. M8H5GIEGR-Human T45K

<400> 45

```
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Lys Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
```

```
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200

<210> 46
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 24. M8H5GIEGR-Human A135E

<400> 46
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Glu Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200

<210> 47
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 25. M8H5GIEGR-Human V170S

<400> 47
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
```

```
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
                165                 170                 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Ser Pro Gly Glu Gln
            180                 185                 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
        195                 200
```

<210> 48
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 26. M8H5GIEGR-Human

<400> 48

```
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1               5                   10                  15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
            20                  25                  30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
        35                  40                  45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
    50                  55                  60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65                  70                  75                  80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
                85                  90                  95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
            100                 105                 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
        115                 120                 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
    130                 135                 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145                 150                 155                 160
```

Leu Gln Asp Phe Arg Asp Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 49
<211> 201
<212> PRT
<213> Homo sapiens

<220>
<223> 27. M8H5GIEGR-Human G172Q

<400> 49
Met His His His His His His His His Gly Gly Gly Gly Gly Ile Glu
1 5 10 15
Gly Arg Gly Pro Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu
20 25 30
Asn Phe Asn Ile Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile
35 40 45
Gly Ser Thr Cys Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val
50 55 60
Ser Thr Leu Val Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met
65 70 75 80
Thr Ser Thr Arg Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala
85 90 95
Tyr Glu Lys Thr Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys
100 105 110
Trp Asn Ile Thr Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu
115 120 125
Tyr Ala Ile Phe Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr
130 135 140
Ile Thr Ala Lys Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu
145 150 155 160
Leu Gln Asp Phe Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp
165 170 175
Ser Ile Phe Thr Met Ala Asp Arg Gly Glu Cys Val Pro Gln Glu Gln
180 185 190
Glu Pro Glu Pro Ile Leu Ile Pro Arg
195 200

<210> 50
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 33. M8H4DK-Human M41K+

<400> 50

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

<210> 51
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 34. M8H4DK-Human M41K+N1796D 34

<400> 51

```
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1               5                  10                  15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asp Ile
            20                  25                  30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35                  40                  45
Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val
    50                  55                  60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg
65                  70                  75                  80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85                  90                  95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr
            100                 105                 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115                 120                 125
```

Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
130 135 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
165 170 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
180 185 190
Ile Leu Ile Pro Arg
195

<210> 52
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 35. M8H4DK-Human R66H+N1796D

<400> 52
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1 5 10 15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asp Ile
20 25 30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
35 40 45
Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val
50 55 60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His
65 70 75 80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
85 90 95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr
100 105 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
115 120 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
130 135 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145 150 155 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
165 170 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
180 185 190
Ile Leu Ile Pro Arg
195

<210> 53
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 36. M8H4DK-Human M41K+R66H+N1796D

<400> 53
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1   5   10   15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asp Ile
            20   25   30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35   40   45
Pro Trp Leu Lys Lys Ile Lys Asp Arg Met Thr Val Ser Thr Leu Val
    50   55   60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His
65   70   75   80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85   90   95
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr
            100   105   110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115   120   125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
    130   135   140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145   150   155   160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
                165   170   175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
            180   185   190
Ile Leu Ile Pro Arg
        195

<210> 54
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 38. M8H4DK-Human R66H

<400> 54
Met His His His His His His His His Asp Asp Asp Asp Lys Gly Pro
1   5   10   15
Val Pro Thr Pro Pro Asp Asn Ile Gln Val Gln Glu Asn Phe Asn Ile
            20   25   30
Ser Arg Ile Tyr Gly Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys
        35   40   45
Pro Trp Leu Lys Lys Ile Met Asp Arg Met Thr Val Ser Thr Leu Val
    50   55   60
Leu Gly Glu Gly Ala Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His
65   70   75   80
Trp Arg Lys Gly Val Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr
                85   90   95

```
Asp Thr Asp Gly Lys Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr
            100                 105                 110
Met Glu Ser Tyr Val Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe
        115                 120                 125
Leu Thr Lys Lys Phe Ser Arg His His Gly Pro Thr Ile Thr Ala Lys
    130                 135                 140
Leu Tyr Gly Arg Ala Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe
145                 150                 155                 160
Arg Val Val Ala Gln Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr
                165                 170                 175
Met Ala Asp Arg Gly Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro
            180                 185                 190
Ile Leu Ile Pro Arg
        195
```

<210> 55
<211> 197
<212> PRT
<213> Homo sapiens

<220>
<223> 39.M8H4DK-Human

<400> 55

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

<210> 56

<211> 192
<212> PRT
<213> Homo sapiens

<220>
<223> 40. M8H-Human wt

<400> 56
Met His His His His His His His His Gly Pro Val Pro Thr Pro Pro
1 5 10 15
Asp Asn Ile Gln Val Gln Glu Asn Phe Asn Ile Ser Arg Ile Tyr Gly
20 25 30
Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys Pro Trp Leu Lys Lys
35 40 45
Ile Met Asp Arg Met Thr Val Ser Thr Leu Val Leu Gly Glu Gly Ala
50 55 60
Thr Glu Ala Glu Ile Ser Met Thr Ser Thr Arg Trp Arg Lys Gly Val
65 70 75 80
Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr Asp Thr Asp Gly Lys
85 90 95
Phe Leu Tyr His Lys Ser Lys Trp Asn Ile Thr Met Glu Ser Tyr Val
100 105 110
Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe Leu Thr Lys Lys Phe
115 120 125
Ser Arg His His Gly Pro Thr Ile Thr Ala Lys Leu Tyr Gly Arg Ala
130 135 140
Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe Arg Val Val Ala Gln
145 150 155 160
Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr Met Ala Asp Arg Gly
165 170 175
Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro Ile Leu Ile Pro Arg
180 185 190

<210> 57
<211> 192
<212> PRT
<213> Homo sapiens

<220>
<223> 41. M8H-Human R66H+N1796D

<400> 57
Met His His His His His His His His Gly Pro Val Pro Thr Pro Pro
1 5 10 15
Asp Asn Ile Gln Val Gln Glu Asn Phe Asp Ile Ser Arg Ile Tyr Gly
20 25 30
Lys Trp Tyr Asn Leu Ala Ile Gly Ser Thr Cys Pro Trp Leu Lys Lys
35 40 45
Ile Met Asp Arg Met Thr Val Ser Thr Leu Val Leu Gly Glu Gly Ala
50 55 60

```
Thr Glu Ala Glu Ile Ser Met Thr Ser Thr His Trp Arg Lys Gly Val
65                  70                  75                  80
Cys Glu Glu Thr Ser Gly Ala Tyr Glu Lys Thr Asp Thr Asp Gly Lys
                85                  90                  95
Phe Leu Tyr His Lys Ser Lys Trp Asp Ile Thr Met Glu Ser Tyr Val
            100                 105                 110
Val His Thr Asn Tyr Asp Glu Tyr Ala Ile Phe Leu Thr Lys Lys Phe
        115                 120                 125
Ser Arg His His Gly Pro Thr Ile Thr Ala Lys Leu Tyr Gly Arg Ala
    130                 135                 140
Pro Gln Leu Arg Glu Thr Leu Leu Gln Asp Phe Arg Val Val Ala Gln
145                 150                 155                 160
Gly Val Gly Ile Pro Glu Asp Ser Ile Phe Thr Met Ala Asp Arg Gly
                165                 170                 175
Glu Cys Val Pro Gly Glu Gln Glu Pro Glu Pro Ile Leu Ile Pro Arg
            180                 185                 190
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<210> 58
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 60. M8H4DK-Human wt

<400> 58

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aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcatggacag gatgacagtg     180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcgt     240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg     300

aagtttctct atcacaaatc caaatggaac ataaccatgg agtcctatgt ggtccacacc     360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc     420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc     480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga     540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga           594
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<210> 59
<211> 603
<212> DNA

<213> Mus <mouse, genus>

<220>
<223> 1.M8H5GIEGR-Mouse

<400> 59
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gcgtcaacac tgccagatat ccaggttcag gagaacttca gtgagtcccg gatctatgga 120

aaatggtaca acctggcggt gggatccacc tgcccgtggc tgagccgcat taaggacaag 180

atgagcgtga gcacgctggt gctgcaggag ggggcgacag aaacagagat cagcatgacc 240

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atcgatggaa agttcctcta ccacaaatcc aaatggaaca taaccttgga atcctatgtg 360

gtccacacca actatgacga atatgccatt ttccttacca agaagtccag ccaccaccac 420

gggctcacca tcactgccaa gctctatggt cgggagccac agctgaggga cagccttctg 480

caggagttca aggatgtggc cctgaatgtg ggcatctctg agaactccat catttttatg 540

cctgacagag gggaatgtgt ccctggggat cgggaggtgg agcccacatc aattgccaga 600

tga 603

<210> 60
<211> 606
<212> DNA
<213> Heterocephalus glaber

<220>
<223> 2. M8H5GIEGR-Naked Mole

<400> 60
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gtgccgatgc cgccagacaa catccaagtg caggagaact ttgatgaatc ccggatctat 120

gggaaatggt tcaacctggc tacgggctcc acgtgcccgt ggctgaagag gatcaaagac 180

aggctgagtg tgagcacaat ggtgctgggc aaggggacca cggagacaca gatcagcaca 240

acccacaccc actggcggca aggggtgtgc caggagacct caggggttta caagaaaaca 300

gacacggctg ggaagttcct ctaccacaag tccaaatgga atgtaaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc atcattctaa ctaagaagtt cagccaccac 420

catggaccga ccattactgc caagctctat gggagagagc cgcggctgag agacagcctc 480

ctgcaggaat tcagggagat ggccctgggc gtaggcatcc ccgaggattc catcttcaca 540

atggccaaca gaggggaatg tgtccctggt gaccaggcac cagagtccac cccagccccg 600

aggtga 606

<210> 61
<211> 594
<212> DNA
<213> Anura

<220>
<223> 3. M8H5GIEGR-Frog

<400> 61
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ccaatccagc cagaggacaa tatccagatc caggagaact ttgatctcca gaggatttat 120

ggcaaatggt acgacattgc catcggctcc acctgcaaat ggctgaagca ccacaaggaa 180

aagttcaaca tggggacact ggagcttagc gatggggaga ccgacgggga ggtgcggatt 240

gtgaacacaa ggatgaggca cggaacctgc tctcagattg ttgggtccta tcagaagaca 300

gagaccccag ggaagttcga ctatttcaac gcacggtggg gaaccacgat ccaaaactac 360

attgtcttca ctaactacaa tgagtatgtc atcatgcaga tgaggaagaa gaagggatcg 420

gagaccacca cgaccgtcaa gctgtatggg cggagcccag acttgcgtcc gaccctcgtt 480

gatgaattca ggcagtttgc cttggctcag ggcattcctg aagactccat cgtgatgcta 540

cctaacaatg gtgagtgctc tccaggggaa atagaagtga gaccacggag atga 594

<210> 62
<211> 594
<212> DNA
<213> Gallus gallus

<220>
<223> 4. M8H5GIEGR-Chicken

<400> 62
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gttggggacc aggatgagga cattcaagtg caagagaatt ttgagcctga gcggatgtat 120

gggaaatggt atgacgtagc tgttggcacc acctgcaagt ggatgaagaa ctacaaggag 180

aagttcagca tgggcacact ggtgctgggc cccggcccca gcgctgacca gatcagtacc 240

atcagcacca ggctgcggca aggtgactgc aaacgtgtct caggagagta ccagaaaact 300

gacacccctg gcaaatacac ctactataac cccaagtggg atgtgtctat caagtcctac 360

gtgcttcgca ccaactatga agaatacgca gtcattctga tgaagaagac aagtaatttt 420

ggcccaacca ccacactgaa gctgtatggg agaagcccag agctgcggga agagctcacc 480

gaggctttcc agcagctggc tctggagatg ggcatccctg cagattccgt cttcatcctg 540

gccaacaaag gtgaatgtgt cccacaggag actgccactg cccctgagag gtga 594

<210> 63
<211> 606
<212> DNA
<213> Oryctolagus

<220>
<223> 5. M8H5GIEGR-Rabbit

<400> 63
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gtgcccaccc tgccggacga catccaagtg caggagaact tcgagctctc tcggatctac 120

gggaaatggt acaacctggc tgtggggtcc acctgcccgt ggctgaagag gatcaaggac 180

aggatggccg tgagcacgct ggtgctggga gaggggacga gcgagacgga gatcagcatg 240

accagcacgc actggcggag gggcgtctgt gaggagatct ccggggccta tgagaaaacg 300

gacactgacg ggaagttcct gtaccacaaa gccaaatgga acttaaccat ggagtcctac 360

gtggtgcaca ccaactacga tgagtatgcc atttttctca ccaagaaatt cagccgccgc 420

cacggcccca ccatcaccgc caagctctat gggcgggagc cgcagctgag ggagagcctc 480

ctgcaggagt tcagggaggt ggctctcggg gtggggatcc ccgagaactc catcttcacc 540

atgatcgaca gaggggaatg tgtgcccggg cagcaggaac caaagcctgc ccccgtgttg 600

agatga 606

<210> 64
<211> 606
<212> DNA

<213> Saimiri

<220>
<223> 6. M8H5GIEGR-SQ Monkey

<400> 64
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gtgccgacgc cgcccgaagg cattcaagtg caggaaaact tcaatctctc tcggatctac 120

ggcaagtggt acaacctggc catcggttcc acctgcccct ggctaaagaa gatcatggac 180

aggttgaaag tgagcacgct ggtgctggaa gagggcgcca cggaggcgga gatcagcatg 240

accagcactc gctggcggaa aggtttctgt gagcagacct cttgggctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacgaa cccaaatgga acgtaaccat ggagtcctat 360

gtggcccaca ccaactatga ggagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctat gggcgggagc cacagctgag ggaaagcctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggattc catcttcacc 540

atggctaacc gaggtgaatg cgtccctggg gagcaggaac cacagcccat cctacaccgg 600

agatga 606

<210> 65
<211> 606
<212> DNA
<213> Odobenus

<220>
<223> 7. M8H5GIEGR-Walrus

<400> 65
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gtgctgacgc cgcctgacgc catccaagtg caagagaact tcgacatctc tcggatctac 120

gggaagtggt ttcatgtggc catgggctcc acctgcccgt ggctgaagaa gttcatggac 180

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accagcacac gttggcggag aggcacctgt gaggagatct ctggggctta tgagaaaacc 300

agcactaacg gaaagttcct ctatcataat cccaaatgga acatcaccat ggagtcctat 360

gtggtccaca ccgactatga tgagtacgcc atctttctga ccaagaaatt cagccgccac 420

catgggccca ccattactgc caagctctat gggcgacagc cgcagcttcg agaaagcctg 480

ctggaggagt tcagggagct tgccttgggt gtgggcatcc ccgaggactc catcttcacc 540

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aggtga 606

<210> 66
<211> 603
<212> DNA
<213> Trichechus

<220>
<223> 8. M8H5GIEGR-Manatee

<400> 66
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gtgaaaacac cactcaacga catccaagtg caggagaact ttgacctccc tcggatctac 120

gggaaatggt tcaacatagc cattggctcc acctgccaat ggctgaagag gttgaaggcc 180

gggccgacca tgagcaccct ggtcctggga gagggagcta cagacacaga gatcagcaca 240

accagcactc gttggcggaa aggcttctgt gaggagatct ctggggcata tgagaaaaca 300

gacacagctg ggaagttcct ttatcacgga tccaaatgga atgtaacctt ggagtcctat 360

gtggtccaca ccaactatga tgagtacgcc atttttctga ccaagaaatt cagccgctat 420

ggactcacca ttactgctaa gctctatggg cggcagcctc aggtgaggga gagcctcctg 480

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gccgacaaag gtgagtgtgt ccctggagag caggagccag aacccaccgc agccctgaga 600

tga 603

<210> 67
<211> 609
<212> DNA
<213> Pleuronectes platessa

<220>
<223> 9. M8H5GIEGR-Plaice

<400> 67
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gtgctccctg aacctcttta cccgacacag gagaactttg atctgacccg gtttgtgggg 120

acatggcacg atgttgcctt gacgagcagc tgcccccata tgcagcgtaa cagggcggat 180

gcagccattg gtaaactggt tctggagaaa gacactggaa acaaactcaa ggtgacacga 240

actagactca gacatggaac atgtgtggag atgtctggag aatatgagtt aaccagcaca 300

ccaggacgaa tcttctacca tattgacagg tgggatgcag acgtggacgc ctacgtggtt 360

cacaccaact acgacgagta cgcaattata ataatgagca aacagaaaac atcgggggag 420

aacagcacct cactcaagct gtacagtcgg acgatgtctg tgagagacac tgtgctggat 480

gacttcaaaa ctctggtcag acatcaggga atgagtgacg acaccattat catcaagcag 540

aacaaaggtg actgtattcc tggagagcag gtggaagaag caccatctca gccagagccc 600

aagcggtga 609

<210> 68
<211> 606
<212> DNA
<213> Pongo

<220>
<223> 10. M8H5GIEGR-Orangutan

<400> 68
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gtgccgacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcaccct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacat ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccgt 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaaccctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gaacaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 69
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 11. M8H5GIEGR-Human P35K

<400> 69
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcaaat ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 70
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 12. M8H5GIEGR-Human M41K

<400> 70
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gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcaaagac 180

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gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

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catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

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agatga 606

<210> 71
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 13. M8H5GIEGR-Human R66H

<400> 71
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

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gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

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catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

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atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 72
<211> 606
<212> DNA
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<220>
<223> 14. M8H5GIEGR-Human T75K

<400> 72
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

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accagcactc gttggcggaa aggtgtctgt gaggagaaat ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

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catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

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atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 73
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 15. M8H5GIEGR-Human T75Y

<400> 73
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aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagtatt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 74
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 16. M8H5GIEGR-Human M99K

<400> 74
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

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accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccaa agagtcctat 360

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catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 75
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 17. M8H5GIEGR-Human S101Y

<400> 75
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

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accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtattat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 76
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 18. M8H5GIEGR-Human K69.92.118.

<400> 76
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aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggcg tggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcaccgt tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagcgttt cagccgccat 420

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ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 77
<211> 597
<212> DNA

<213> Latimeria

<220>
<223> 19. M8H5GIEGR-Coelacanth

<400> 77
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ccccttcgag atgaagacat ccaagtgcag gagaactttg accttcccag gatttatgga 120

aaatggtacg aaattgcaat cgcttcgacc tgtccctggg tgaagaatca caaggataag 180

atgttcatgg gaactatggt gctacaagag ggagagcaga gtgaccggat cagtaccacc 240

tccacccgaa tcagggatgg aacctgctca cagatcactg gatattacac gttaaccaca 300

acacctggga agttcgctta tcacaattct aaatggaact tggatgtcaa cagttatgtt 360

gttcacacta actatgacga atactcgatt gtgatgatgc agaaatacaa aagctctaac 420

tctaccacta cagtccgact ctatggaaga actcaagagc tacgagacag cttgcatgcc 480

gagttcaaaa agtttgctct ggatcaggga atagatgagg actccattta cattctgcca 540

aaaagagatg aatgtgtacc tggtgaacct aaagcagaat ctctcatggc acgttga 597

<210> 78
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 21. M8H5GIEGR-Human L89T

<400> 78
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttac ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 79
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 22. M8H5GIEGR-Human N1796D

<400> 79
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcgatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatggg atataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 80
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 23. M8H5GIEGR-Human T45K

<400> 80
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgaaag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 81
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 24. M8H5GIEGR-Human A135E

<400> 81
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggaac cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 82

<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 25. M8H5GIEGR-Human V170S

<400> 82
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg ttctcctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 83
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 26. M8H5GIEGR-Human V148D

<400> 83
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagatgt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctggg gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 84
<211> 606
<212> DNA
<213> Homo sapiens

<220>
<223> 27. M8H5GIEGR-Human G172Q

<400> 84
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gtgccaacgc cgcccgacaa catccaagtg caggaaaact tcaatatctc tcggatctat 120

gggaagtggt acaacctggc catcggttcc acctgcccct ggctgaagaa gatcatggac 180

aggatgacag tgagcacgct ggtgctggga gagggcgcta cagaggcgga gatcagcatg 240

accagcactc gttggcggaa aggtgtctgt gaggagacgt ctggagctta tgagaaaaca 300

gatactgatg ggaagtttct ctatcacaaa tccaaatgga acataaccat ggagtcctat 360

gtggtccaca ccaactatga tgagtatgcc attttcctga ccaagaaatt cagccgccat 420

catggaccca ccattactgc caagctctac gggcgggcgc cgcagctgag ggaaactctc 480

ctgcaggact tcagagtggt tgcccagggt gtgggcatcc ctgaggactc catcttcacc 540

atggctgacc gaggtgaatg tgtccctcag gagcaggaac cagagcccat cttaatcccg 600

agatga 606

<210> 85
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 33. M8H4DK-Human M41K+R66H

<400> 85

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cccgacaaca tccaagtgca ggaaaacttc aatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcaaagacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcat 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatggaac ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 86
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 34. M8H4DK-Human M41K+N1796D

<400> 86
atgcatcacc atcaccatca ccatcacgat gacgatgaca agggccctgt gccaacgccg 60

cccgacaaca tccaagtgca ggaaaacttc gatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcaaagacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcgt 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatgggat ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 87

<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 35. M8H4DK-Human R66H+N1796D

<400> 87
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cccgacaaca tccaagtgca ggaaaacttc gatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcatggacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcat 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatgggat ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 88
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 36. M8H4DK-Human M41K+R66H+N1796D

<400> 88
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cccgacaaca tccaagtgca ggaaaacttc gatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcaaagacag gatgacagtg 180

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tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatgggat ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 89
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 37. M8H4DK-Human M41K

<400> 89
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cccgacaaca tccaagtgca ggaaaacttc aatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcaaagacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcgt 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatggaac ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 90
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 38. M8H4DK-Human R66H

<400> 90
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cccgacaaca tccaagtgca ggaaaacttc aatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcatggacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcat 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatggaac ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 91
<211> 594
<212> DNA
<213> Homo sapiens

<220>
<223> 39. M8H4DK-Human N1796D

<400> 91
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cccgacaaca tccaagtgca ggaaaacttc gatatctctc ggatctatgg gaagtggtac 120

aacctggcca tcggttccac ctgcccctgg ctgaagaaga tcatggacag gatgacagtg 180

agcacgctgg tgctgggaga gggcgctaca gaggcggaga tcagcatgac cagcactcgt 240

tggcggaaag gtgtctgtga ggagacgtct ggagcttatg agaaaacaga tactgatggg 300

aagtttctct atcacaaatc caaatgggat ataaccatgg agtcctatgt ggtccacacc 360

aactatgatg agtatgccat tttcctgacc aagaaattca gccgccatca tggacccacc 420

attactgcca agctctacgg gcgggcgccg cagctgaggg aaactctcct gcaggacttc 480

agagtggttg cccagggtgt gggcatccct gaggactcca tcttcaccat ggctgaccga 540

ggtgaatgtg tccctgggga gcaggaacca gagcccatct taatcccgag atga 594

<210> 92
<211> 579
<212> DNA
<213> Homo sapiens

<220>
<223> 40. M8H-Human wt

<400> 92
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gtgcaggaaa acttcaatat ctctcggatc tatgggaagt ggtacaacct ggccatcggt 120

tccacctgcc cctggctgaa gaagatcatg gacaggatga cagtgagcac gctggtgctg 180

ggagagggcg ctacagaggc ggagatcagc atgaccagca ctcgttggcg gaaaggtgtc 240

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gccattttcc tgaccaagaa attcagccgc catcatggac ccaccattac tgccaagctc 420

tacgggcggg cgccgcagct gagggaaact ctcctgcagg acttcagagt ggttgcccag 480

ggtgtgggca tccctgagga ctccatcttc accatggctg accgaggtga atgtgtccct 540

ggggagcagg aaccagagcc catcttaatc ccgagatga 579

<210> 93
<211> 579
<212> DNA
<213> Homo sapiens

<220>
<223> 41. M8H-Human R66H+N1796D

<400> 93
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gtgcaggaaa acttcgatat ctctcggatc tatgggaagt ggtacaacct ggccatcggt 120

tccacctgcc cctggctgaa gaagatcatg gacaggatga cagtgagcac gctggtgctg 180

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tgtgaggaga cgtctggagc ttatgagaaa acagatactg atgggaagtt tctctatcac 300

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gccattttcc tgaccaagaa attcagccgc catcatggac ccaccattac tgccaagctc 420

tacgggcggg cgccgcagct gagggaaact ctcctgcagg acttcagagt ggttgcccag 480

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ggggagcagg aaccagagcc catcttaatc ccgagatga 579

<210> 94
<211> 555
<212> DNA
<213> Homo sapiens

<220>
<223> 42. untagged-Human R66H+N1796D

<400> 94
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cggatctatg ggaagtggta caacctggcc atcggttcca cctgcccctg gctgaagaag 120

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gagtcctatg tggtccacac caactatgat gagtatgcca ttttcctgac caagaaattc 360

agccgccatc atggacccac cattactgcc aagctctacg ggcgggcgcc gcagctgagg 420

gaaactctcc tgcaggactt cagagtggtt gcccagggtg tgggcatccc tgaggactcc 480

atcttcacca tggctgaccg aggtgaatgt gtccctgggg agcaggaacc agagcccatc 540

ttaatcccga gatga 555

<210> 95
<211> 555
<212> DNA
<213> Homo sapiens

<220>
<223> 61. untagged-Human wt

<400> 95
atgggccctg tgccaacgcc gcccgacaac atccaagtgc aggaaaactt caatatctct 60

cggatctatg ggaagtggta caacctggcc atcggttcca cctgcccctg gctgaagaag 120

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atcagcatga ccagcactcg ttggcggaaa ggtgtctgtg aggagacgtc tggagcttat 240

gagaaaacag atactgatgg gaagtttctc tatcacaaat ccaaatggaa cataaccatg 300

gagtcctatg tggtccacac caactatgat gagtatgcca ttttcctgac caagaaattc 360

agccgccatc atggacccac cattactgcc aagctctacg ggcgggcgcc gcagctgagg 420

gaaactctcc tgcaggactt cagagtggtt gcccagggtg tgggcatccc tgaggactcc 480

atcttcacca tggctgaccg aggtgaatgt gtccctgggg agcaggaacc agagcccatc 540

ttaatcccga gatga 555