SEQUENCE LISTING

<110> IMMUNAS PHARMA, INC.
Matsubara, Etsuro

<120> ANTIBODY SPECIFIC BINDING TO A BETA OLIGOMER AND THE USE

<130> M7-X0801Y1P

<150> JP 2008-28386
<151> 2008-02-08

<150> US 61/085,545
<151> 2008-08-01

<150> JP 2008-201058
<151> 2008-08-04

<160> 120

<170> PatentIn version 3.4

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Ser Arg Lys Leu Ser Cys Ala Thr Ser Gly Phe Thr Phe Ser Ser Phe
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Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Gly Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Arg Ser Gly Asp Thr Met Asp Tyr Trp Gly Gln Gly Thr Ser Val
100 105 110

Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala
115 120 125

Pro Gly Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
130 135 140

Val Lys Gly Tyr Phe Pro Glu Ser Val Thr Val Thr Trp Asn Ser Gly
145 150 155 160

Ser Leu Ser Ser Ser Val His Thr Phe Pro Ala Leu Leu Gln Ser Gly
165 170 175

Leu Tyr Thr Met Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro
180 185 190

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Ser Gln Thr Val Thr Cys Ser Val Ala His Pro Ala Ser Ser Thr Thr
        195                 200                 205

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

Cys Pro Pro Cys Lys Glu Cys His Lys Cys Pro Ala Pro Asn Leu Glu
225                 230                 235                 240

Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Ile Lys Asp Val Leu
                245                 250                 255

Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Val Ser
            260                 265                 270

Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu
        275                 280                 285

Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr
    290                 295                 300

Ile Arg Val Val Ser Thr Leu Pro Ile Gln His Gln Asp Trp Met Ser
305                 310                 315                 320

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

Ile Glu Arg Thr Ile Ser Lys Ile Lys Gly Leu Val Arg Ala Pro Gln
            340                 345                 350

Val Tyr Ile Leu Pro Pro Pro Ala Glu Gln Leu Ser Arg Lys Asp Val
        355                 360                 365

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

Glu Trp Thr Ser Asn Gly His Thr Glu Glu Asn Tyr Lys Asp Thr Ala
385                 390                 395                 400

Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Ile Tyr Ser Lys Leu Asn
                405                 410                 415

Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser Cys Asn Val
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Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys Thr Ile Ser Arg
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ccagagaagg gactggagtg ggtcgcatac attagtagtg gcagtagtgc catctactat    180
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gatactatgg actactgggg tcaaggaacc tcagtcaccg tctcctcagc caaaacaaca 360

cccccatcag tctatccact ggcccctggg tgtggagata caactggttc ctccgtgact 420

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acaatcaacc cctgtcctcc atgcaaggag tgtcacaaat gcccagctcc taacctcgag 720

ggtggaccat ccgtcttcat cttccctcca aatatcaagg atgtactcat gatctccctg 780

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20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Ser Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Val
85 90 95

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Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
        115                 120                 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145                 150                 155                 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
            180                 185                 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
        195                 200                 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
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tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt    180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc    240

agcagcgtgg aggctgagga tctgggagtt tattactgct ttcaagtttc acatgttcct    300

ccgacgttcg gtggaggcac caagctggaa atcaaacggg ctgatgctgc accaactgta    360

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ttgaacaact tctaccccaa agacatcaat gtcaagtgga agattgatgg cagtgaacga    480

caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg    540

agcagtaccc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag    600

gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgttag    660
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<213> Mus musculus

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Ser Arg Lys Leu Ser Cys Ala Thr Ser Gly Phe Thr Phe Ser Ser Phe
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            20                  25                  30

Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Tyr Ile Ser Ser Gly Ser Ser Ala Ile Tyr Tyr Ala Asp Thr Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65                  70                  75                  80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95

Ala Arg Ser Gly Asp Thr Met Asp Tyr Trp Gly Gln Gly Thr Ser Val
            100                 105                 110

Thr Val Ser Ser
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<212> DNA
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gcagacacag tgaagggccg attcaccatc tccagagaca atcccaagaa caccctgttc    240

ctgcaaatga ccagtctaag gtctgaggac acggccatgt attactgtgc aagatctggg    300

gatactatgg actactgggg tcaaggaacc tcagtcaccg tctcctca                 348
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<210> 7
<211> 112
<212> PRT
<213> Mus musculus

<400> 7

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1               5                   10                  15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Asn Ile Val His Ser
            20                  25                  30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35                  40                  45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80

Ser Ser Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Val
                85                  90                  95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
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100 105 110

<210> 8
<211> 336
<212> DNA
<213> Mus musculus

<400> 8
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tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagcgtgg aggctgagga tctgggagtt tattactgct ttcaagtttc acatgttcct 300

ccgacgttcg gtggaggcac caagctggaa atcaaa 336

<210> 9
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<210> 10
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<212> DNA
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<400> 10
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<400> 11

Tyr Ile Ser Ser Gly Ser Ser Ala Ile Tyr
1 5 10

<210> 12
<211> 30
<212> DNA
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<400> 12
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<210> 13
<211> 7
<212> PRT
<213> Mus musculus

<400> 13

Ser Gly Asp Thr Met Asp Tyr

1 5

<210> 14
<211> 21
<212> DNA
<213> Mus musculus

<400> 14
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<210> 15
<211> 16
<212> PRT
<213> Mus musculus

<400> 15

Arg Ser Ser Gln Asn Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 16
<211> 48
<212> DNA
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<400> 16
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<210> 17
<211> 7
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<213> Mus musculus

<400> 17

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<210> 18
<211> 21
<212> DNA
<213> Mus musculus

<400> 18
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<210> 19
<211> 9
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<400> 19

Phe Gln Val Ser His Val Pro Pro Thr
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<210> 20
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<212> DNA
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<210> 21
<211> 455
<212> PRT
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Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Thr Thr Ser
            20                  25                  30

Ala Met Gly Val Ser Trp Val Arg Gln Pro Ser Arg Lys Gly Leu Glu
        35                  40                  45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr
                85                  90                  95

Cys Ala Arg Lys Gly Leu Gly Gly Ala Met Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Ser Val Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr
        115                 120                 125

Pro Leu Ala Pro Gly Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu
    130                 135                 140

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Ser Val Thr Val Thr Trp
145                 150                 155                 160

Asn Ser Gly Ser Leu Ser Ser Ser Val His Thr Phe Pro Ala Leu Leu
                165                 170                 175

Gln Ser Gly Leu Tyr Thr Met Ser Ser Ser Val Thr Val Pro Ser Ser
            180                 185                 190

Thr Trp Pro Ser Gln Thr Val Thr Cys Ser Val Ala His Pro Ala Ser
        195                 200                 205

Ser Thr Thr Val Asp Lys Lys Leu Glu Pro Ser Gly Pro Ile Ser Thr
    210                 215                 220

Ile Asn Pro Cys Pro Pro Cys Lys Glu Cys His Lys Cys Pro Ala Pro
225                 230                 235                 240

Asn Leu Glu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Ile Lys
                245                 250                 255

Asp Val Leu Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val
            260                 265                 270

Asp Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn
        275                 280                 285

Asn Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr
    290                 295                 300
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Asn Ser Thr Ile Arg Val Val Ser Thr Leu Pro Ile Gln His Gln Asp
305                 310                 315                 320

Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu
                325                 330                 335

Pro Ser Pro Ile Glu Arg Thr Ile Ser Lys Ile Lys Gly Leu Val Arg
            340                 345                 350

Ala Pro Gln Val Tyr Ile Leu Pro Pro Pro Ala Glu Gln Leu Ser Arg
        355                 360                 365

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

Ile Ser Val Glu Trp Thr Ser Asn Gly His Thr Glu Glu Asn Tyr Lys
385                 390                 395                 400

Asp Thr Ala Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Ile Tyr Ser
                405                 410                 415

Lys Leu Asn Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser
            420                 425                 430

Cys Asn Val Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys Thr
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Ile Ser Arg Ser Pro Gly Lys
    450                 455
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<212> DNA
<213> Mus musculus

<400> 22

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cagccttcaa gaaagggtct ggagtggctg gcacacattt actgggatga tgacaagcgc    180

tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag caaccaggta    240

ttcctcaaga tcaccagtgt ggacactgca gatactgcca catactactg tgctcgaaag    300

ggactgggag gtgctatgga ctactggggt caaggaacct cagtcaccgt ctcctcagcc    360

aaaacaacac ccccatcagt ctatccactg gcccctgggt gtggagatac aactggttcc    420

tccgtgactc tgggatgcct ggtcaagggc tacttccctg agtcagtgac tgtgacttgg    480

aactctggat ccctgtccag cagtgtgcac accttcccag ctctcctgca gtctggactc    540

tacactatga gcagctcagt gactgtcccc tccagcacct ggccaagtca gaccgtcacc    600

tgcagcgttg ctcacccagc cagcagcacc acggtggaca aaaaacttga gcccagcggg    660

cccatttcaa caatcaaccc ctgtcctcca tgcaaggagt gtcacaaatg cccagctcct    720

aacctcgagg gtggaccatc cgtcttcatc ttccctccaa atatcaagga tgtactcatg    780

atctccctga cacccaaggt cacgtgtgtg gtggtggatg tgagcgagga tgacccagac    840
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<213> Mus musculus

<400> 23

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Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
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Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Thr His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
115 120 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
130 135 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145 150 155 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
180 185 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
195 200 205

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Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
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<210>  24
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<212>  DNA
<213>  Mus musculus

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tacctgcaga agccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt    180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc    240

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caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg    540

agcagtaccc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag    600

gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgttag    660

<210>  25
<211>  119
<212>  PRT
<213>  Mus musculus

<400>  25

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Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Thr Thr Ser
            20                  25                  30

Ala Met Gly Val Ser Trp Val Arg Gln Pro Ser Arg Lys Gly Leu Glu
        35                  40                  45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr
                85                  90                  95

Cys Ala Arg Lys Gly Leu Gly Gly Ala Met Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Ser Val Thr Val Ser Ser
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<210>  26
<211>  357
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<212> DNA
<213> Mus musculus

<400> 26
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tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag caaccaggta 240

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ggactgggag gtgctatgga ctactggggt caaggaacct cagtcaccgt ctcctca 357

<210> 27
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<212> PRT
<213> Mus musculus

<400> 27

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Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Thr His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

<210> 28
<211> 336
<212> DNA
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<400> 28
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tacctgcaga agccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

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agcagagtgg aggctgagga tctgggagtt tatttctgct ctcaaagtac acatgttccg 300

ctcacgttcg gtgctgggac caagctggag ctgaaa 336

<210> 29
<211> 7

<212> PRT
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<400> 29

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<210> 30
<211> 21
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<400> 30
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<210> 31
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<400> 31

His Ile Tyr Trp Asp Asp Asp Lys Arg
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<210> 32
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<210> 33
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<400> 33

Lys Gly Leu Gly Gly Ala Met Asp Tyr
1 5

<210> 34
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<212> DNA
<213> Mus musculus

<400> 34
aagggactgg gaggtgctat ggactac 27

<210> 35
<211> 16
<212> PRT
<213> Mus musculus

<400> 35

Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 36
<211> 48

<212> DNA
<213> Mus musculus

<400> 36
agatctagtc agagccttct acacagtaat ggaaacacct atttacat 48

<210> 37
<211> 7
<212> PRT
<213> Mus musculus

<400> 37

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 38
<211> 21
<212> DNA
<213> Mus musculus

<400> 38
aaagtttcca accgattttc t 21

<210> 39
<211> 9
<212> PRT
<213> Mus musculus

<400> 39

Ser Gln Ser Thr His Val Pro Leu Thr
1 5

<210> 40
<211> 27
<212> DNA
<213> Mus musculus

<400> 40
tctcaaagta cacatgttcc gctcacg 27

<210> 41
<211> 447
<212> PRT
<213> Mus musculus

<400> 41

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

Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser
20 25 30

Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Lys Gly Leu Glu
35 40 45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Ser Ala Thr Tyr Tyr
                85                  90                  95

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

Val Thr Val Ser Ala Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
        115                 120                 125

Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Ala Leu Gly Cys
    130                 135                 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp Asn Ser
145                 150                 155                 160

Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
                165                 170                 175

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr Trp
            180                 185                 190

Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
        195                 200                 205

Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys
    210                 215                 220

Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val
225                 230                 235                 240

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
                245                 250                 255

Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
            260                 265                 270

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
        275                 280                 285

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
    290                 295                 300

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
305                 310                 315                 320
```

```
Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile
                325                 330                 335

Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro
            340                 345                 350

Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met
        355                 360                 365

Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn
    370                 375                 380

Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser
385                 390                 395                 400

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn
                405                 410                 415

Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu
            420                 425                 430

His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
        435                 440                 445
```

<210> 42
<211> 1344
<212> DNA
<213> Mus musculus

<400> 42

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caggttactc tgaaagactc tggccctggg atattgcagc cctcccagac cctcagtctg     60

acttgttctt tctctgggtt ttcactgagc acttctggta tgggtgtgag ctggattcgt    120

cagccttcag gaaagggtct ggagtggctg gcacacattt actgggatga tgacaagcgc    180

tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag caaccaggta    240

ttcctcaaga tcaccagtgt ggacactgca gattctgcca catactactg ttccactatg    300

attacggggt ttgtttactg gggccaaggg actctggtca ctgtctctgc agccaaaaca    360

acagccccat cggtctatcc cctggccccc gtgtgtggag atacaactgg ctcctcggtg    420

gctctaggat gcctggtcaa gggttatttc cctgagccag tgaccttgac ctggaactct    480

ggatccctgt ccagtggtgt gcacaccttc ccagctgtcc tgcagtctga cctctacacc    540

ctcagcagct cagtgactgt aacctcgagc acctggccca gccagtccat cacctgcaat    600

gtggcccacc cggcaagcag caccaaggtg gacaagaaaa ttgagcccag agggcccaca    660

atcaagccct gtcctccatg caaatgccca gcacctaacc tcttgggtgg accatccgtc    720
```

ttcatcttcc ctccaaagat caaggatgta ctcatgatct ccctgagccc catagtcaca 780

tgtgtggtgg tggatgtgag cgaggatgac ccagatgtcc agatcagctg gtttgtgaac 840

aacgtggaag tacacacagc tcagacacaa acccatagag aggattacaa cagtactctc 900

cgggtggtca gtgccctccc catccagcac caggactgga tgagtggcaa ggagttcaaa 960

tgcaaggtca acaacaaaga cctcccagcg cccatcgaga gaaccatctc aaaacccaaa 1020

gggtcagtaa gagctccaca ggtatatgtc ttgcctccac cagaagaaga gatgactaag 1080

aaacaggtca ctctgacctg catggtcaca gacttcatgc ctgaagacat ttacgtggag 1140

tggaccaaca acgggaaaac agagctaaac tacaagaaca ctgaaccagt cctggactct 1200

gatggttctt acttcatgta cagcaagctg agagtggaaa agaagaactg ggtggaaaga 1260

aatagctact cctgttcagt ggtccacgag ggtctgcaca atcaccacac gactaagagc 1320

ttctcccgga ctccgggtaa atga 1344

<210> 43
<211> 219
<212> PRT
<213> Mus musculus

<400> 43

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
115 120 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
130 135 140

```
Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145                 150                 155                 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
            180                 185                 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
        195                 200                 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215
```

<210> 44
<211> 660
<212> DNA
<213> Mus musculus

<400> 44
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agtagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttccg 300

ctcacgttcg gtgctgggac caagctggag ctgaaacggg ctgatgctgc accaactgta 360

tccatcttcc caccatccag tgagcagtta acatctggag gtgcctcagt cgtgtgcttc 420

ttgaacaact tctaccccaa agacatcaat gtcaagtgga agattgatgg cagtgaacga 480

caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg 540

agcagtaccc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag 600

gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgttag 660

<210> 45
<211> 117
<212> PRT
<213> Mus musculus

<400> 45

```
Gln Val Thr Leu Lys Asp Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln
1               5                   10                  15

Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser
            20                  25                  30
```

Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Lys Gly Leu Glu
35 40 45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Ser Ala Thr Tyr Tyr
85 90 95

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

Val Thr Val Ser Ala
115

<210> 46
<211> 351
<212> DNA
<213> Mus musculus

<400> 46
caggttactc tgaaagactc tggccctggg atattgcagc cctcccagac cctcagtctg 60

acttgttctt tctctgggtt ttcactgagc acttctggta tgggtgtgag ctggattcgt 120

cagccttcag gaaagggtct ggagtggctg gcacacattt actgggatga tgacaagcgc 180

tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag caaccaggta 240

ttcctcaaga tcaccagtgt ggacactgca gattctgcca catactactg ttccactatg 300

attacggggt ttgtttactg gggccaaggg actctggtca ctgtctctgc a 351

<210> 47
<211> 112
<212> PRT
<213> Mus musculus

<400> 47

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

<210> 48
<211> 336
<212> DNA
<213> Mus musculus

<400> 48
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agtagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttccg 300

ctcacgttcg gtgctgggac caagctggag ctgaaa 336

<210> 49
<211> 7
<212> PRT
<213> Mus musculus

<400> 49

Thr Ser Gly Met Gly Val Ser
1 5

<210> 50
<211> 21
<212> DNA
<213> Mus musculus

<400> 50
acttctggta tgggtgtgag c 21

<210> 51
<211> 9
<212> PRT
<213> Mus musculus

<400> 51

His Ile Tyr Trp Asp Asp Asp Lys Arg
1 5

<210> 52
<211> 27
<212> DNA
<213> Mus musculus

<400> 52
cacatttact gggatgatga caagcgc 27

<210> 53
<211> 7
<212> PRT
<213> Mus musculus

<400> 53

Met Ile Thr Gly Phe Val Tyr
1 5

<210> 54
<211> 21
<212> DNA
<213> Mus musculus

<400> 54
atgattacgg ggtttgttta c 21

<210> 55
<211> 16
<212> PRT
<213> Mus musculus

<400> 55

Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 56
<211> 48
<212> DNA
<213> Mus musculus

<400> 56
agatctagtc agagcattgt acatagtaat ggaaacacct atttagaa 48

<210> 57
<211> 7
<212> PRT
<213> Mus musculus

<400> 57

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 58
<211> 21

<212> DNA
<213> Mus musculus

<400> 58
aaagtttcca accgattttc t 21

<210> 59
<211> 9
<212> PRT
<213> Mus musculus

<400> 59

Phe Gln Gly Ser His Val Pro Leu Thr
1 5

<210> 60
<211> 27
<212> DNA
<213> Mus musculus

<400> 60
tttcaaggtt cacatgttcc gctcacg 27

<210> 61
<211> 445
<212> PRT
<213> Mus musculus

<400> 61

Asp Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Arg Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
20 25 30

Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
35 40 45

Ala Tyr Ile Ser Ser Gly Ser Ser Thr Ile Tyr Tyr Ala Asp Thr Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65 70 75 80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Ala Gly Thr Gly Thr Arg Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ala Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro
115 120 125

```
Val Cys Gly Asp Thr Thr Gly Ser Ser Val Ala Leu Gly Cys Leu Val
    130                 135                 140

Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp Asn Ser Gly Ser
145                 150                 155                 160

Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Asp Leu
                165                 170                 175

Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr Trp Pro Ser
            180                 185                 190

Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val
        195                 200                 205

Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro Pro
    210                 215                 220

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

Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro Ile
                245                 250                 255

Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp Val Gln
            260                 265                 270

Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln
        275                 280                 285

Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala Leu
    290                 295                 300

Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys
305                 310                 315                 320

Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser Lys
                325                 330                 335

Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro Pro
            340                 345                 350

Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val Thr
        355                 360                 365

Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly Lys
    370                 375                 380
```

```
Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400

Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp Val
                405                 410                 415

Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His Asn
            420                 425                 430

His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
        435                 440                 445
```

<210> 62
<211> 1338
<212> DNA
<213> Mus musculus

<400> 62

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gatgtgcagc tggtggagtc tgggggaggc ttagtgcagc ctggagggtc ccggaaactc     60

tcctgtgcag cctctggatt cactttcagt agctttggaa tgcactgggt tcgtcaggct    120

ccagagaagg ggctggagtg ggtcgcatac attagtagtg gcagtagtac catctactat    180

gcagacacag tgaagggccg attcaccatc tccagagaca atcccaagaa caccctgttc    240

ctgcaaatga ccagtctaag gtctgaggac acggccatgt attactgtgc cgggactggg    300

acgagagctt actggggcca agggactctg gtcactgtct ctgcagccaa aacaacagcc    360

ccatcggtct atcccctggc ccctgtgtgt ggagatacaa ctggctcctc ggtggctcta    420

ggatgcctgg tcaagggtta tttccctgag ccagtgacct tgacctggaa ctctggatcc    480

ctgtccagtg gtgtgcacac cttcccagct gtcctgcagt ctgacctcta caccctcagc    540

agctcagtga ctgtaacctc gagcacctgg cccagccagt ccatcacctg caatgtggcc    600

cacccggcaa gcagcaccaa ggtggacaag aaaattgagc ccagagggcc cacaatcaag    660

ccctgtcctc catgcaaatg cccagcacct aacctcttgg gtggaccatc cgtcttcatc    720

ttccctccaa agatcaagga tgtactcatg atctccctga gccccatagt cacatgtgtg    780

gtggtggatg tgagcgagga tgacccagat gtccagatca gctggtttgt gaacaacgtg    840

gaagtacaca cagctcagac acaaacccat agagaggatt acaacagtac tctccgggtg    900

gtcagtgccc tccccatcca gcaccaggac tggatgagtg gcaaggagtt caaatgcaag    960

gtcaacaaca aagacctccc agcgcccatc gagagaacca tctcaaaacc caaagggtca   1020

gtaagagctc cacaggtata tgtcttgcct ccaccagaag aagagatgac taagaaacag   1080

gtcactctga cctgcatggt cacagacttc atgcctgaag acatttacgt ggagtggacc   1140

aacaacggga aaacagagct aaactacaag aacactgaac cagtcctgga ctctgatggt   1200
```

tcttacttca tgtacagcaa gctgagagtg gaaaagaaga actgggtgga aagaaatagc 1260

tactcctgtt cagtggtcca cgagggtctg cacaatcacc acacgactaa gagcttctcc 1320

cggactccgg gtaaatga 1338

<210> 63
<211> 219
<212> PRT
<213> Mus musculus

<400> 63

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
115 120 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
130 135 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145 150 155 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
180 185 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
195 200 205

```
Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215
```

<210> 64
<211> 660
<212> DNA
<213> Mus musculus

<400> 64

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gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc     60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg    120

tacctgcaga aaccaggcca gtctcctaag ctcctgatct acaaagtttc caaccgattt    180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc    240

agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttcct    300

ccgacgttcg gtggaggcac caagctggaa atcaaacggg ctgatgctgc accaactgta    360

tccatcttcc caccatccag tgagcagtta acatctggag gtgcctcagt cgtgtgcttc    420

ttgaacaact tctaccccaa agacatcaat gtcaagtgga agattgatgg cagtgaacga    480

caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg    540

agcagtaccc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag    600

gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgttag    660
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<210> 65
<211> 115
<212> PRT
<213> Mus musculus

<400> 65

```
Asp Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1               5                  10                  15

Ser Arg Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Phe
            20                  25                  30

Gly Met His Trp Val Arg Gln Ala Pro Glu Lys Gly Leu Glu Trp Val
        35                  40                  45

Ala Tyr Ile Ser Ser Gly Ser Ser Thr Ile Tyr Tyr Ala Asp Thr Val
    50                  55                  60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Pro Lys Asn Thr Leu Phe
65                  70                  75                  80

Leu Gln Met Thr Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95
```

```
Ala Gly Thr Gly Thr Arg Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110

Val Ser Ala
        115
```

<210> 66
<211> 345
<212> DNA
<213> Mus musculus

<400> 66
gatgtgcagc tggtggagtc tgggggaggc ttagtgcagc ctggagggtc ccggaaactc 60

tcctgtgcag cctctggatt cactttcagt agctttggaa tgcactgggt tcgtcaggct 120

ccagagaagg ggctggagtg ggtcgcatac attagtagtg gcagtagtac catctactat 180

gcagacacag tgaagggccg attcaccatc tccagagaca atcccaagaa caccctgttc 240

ctgcaaatga ccagtctaag gtctgaggac acggccatgt attactgtgc cgggactggg 300

acgagagctt actggggcca agggactctg gtcactgtct ctgca 345

<210> 67
<211> 112
<212> PRT
<213> Mus musculus

<400> 67

```
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1               5                   10                  15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
            20                  25                  30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35                  40                  45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
                85                  90                  95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100                 105                 110
```

<210> 68
<211> 336
<212> DNA
<213> Mus musculus

<400> 68
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctcctaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttcct 300

ccgacgttcg gtggaggcac caagctggaa atcaaa 336

<210> 69
<211> 5
<212> PRT
<213> Mus musculus

<400> 69

Ser Phe Gly Met His
1 5

<210> 70
<211> 15
<212> DNA
<213> Mus musculus

<400> 70
agctttggaa tgcac 15

<210> 71
<211> 10
<212> PRT
<213> Mus musculus

<400> 71

Tyr Ile Ser Ser Gly Ser Ser Thr Ile Tyr
1 5 10

<210> 72
<211> 30
<212> DNA
<213> Mus musculus

<400> 72
tacattagta gtggcagtag taccatctac 30

<210> 73
<211> 6
<212> PRT
<213> Mus musculus

<400> 73

Thr Gly Thr Arg Ala Tyr
1 5

<210> 74
<211> 18
<212> DNA
<213> Mus musculus

<400> 74
actgggacga gagcttac 18

<210> 75
<211> 16
<212> PRT
<213> Mus musculus

<400> 75

Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 76
<211> 48
<212> DNA
<213> Mus musculus

<400> 76
agatctagtc agagcattgt acatagtaat ggaaacacct atttagaa 48

<210> 77
<211> 7
<212> PRT
<213> Mus musculus

<400> 77

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 78
<211> 21
<212> DNA
<213> Mus musculus

<400> 78
aaagtttcca accgattttc t 21

<210> 79
<211> 9
<212> PRT
<213> Mus musculus

<400> 79

Phe Gln Gly Ser His Val Pro Pro Thr
1 5

<210> 80
<211> 27
<212> DNA
<213> Mus musculus

<400> 80
tttcaaggtt cacatgttcc tccgacg 27

<210> 81
<211> 442
<212> PRT
<213> Mus musculus

<400> 81

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Trp Met His Trp Val Lys Leu Arg Pro Gly Gln Gly Phe Glu Trp Ile
35 40 45

Gly Glu Ile Asn Pro Arg Asn Gly Gly Thr Asn Asn Asn Glu Asn Phe
50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Thr Arg Asp Gly Asn Tyr Asp Pro Phe Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ala Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro
115 120 125

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

Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn
145 150 155 160

Ser Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr
180 185 190

```
Trp Pro Ser Glu Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser
        195                 200                 205

Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro
    210                 215                 220

Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro
225                 230                 235                 240

Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys
                245                 250                 255

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

Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro Arg Glu
        275                 280                 285

Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met
    290                 295                 300

His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser
305                 310                 315                 320

Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly
                325                 330                 335

Arg Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln
            340                 345                 350

Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe
        355                 360                 365

Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu
    370                 375                 380

Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe
385                 390                 395                 400

Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn
                405                 410                 415

Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu Leu Asn Leu His Thr
            420                 425                 430

Glu Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440
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<210> 82
<211> 1329
<212> DNA
<213> Mus musculus

<400> 82
caggtccaac tccagcagcc tggggctgaa ctggtgaagc ctggggcttc agtgaagttg 60

tcctgcaagg cttctggcta caccttcacc agctactgga tgcactgggt gaagctgagg 120

cctggacaag gctttgagtg gattggagag attaatccta gaaatggtgg tactaacaac 180

aatgagaact tcaagagaaa ggccacactg actgtagaca aatcctccag cacagcctac 240

atgcaactca gcagcctgac atctgaggac tctgcggtct attactgtac aagagatggt 300

aactacgacc cctttgctta ctggggccaa gggactctgg tcactgtctc tgcagccaaa 360

acgacacccc catctgtcta tccactggcc cctggatctg ctgcccaaac taactccatg 420

gtgaccctgg gatgcctggt caagggctat ttccctgagc cagtgacagt gacctggaac 480

tctggatccc tgtccagcgg tgtgcacacc ttcccagctg tcctgcagtc tgacctctac 540

actctgagca gctcagtgac tgtccctcc agcacctggc ccagcgagac cgtcacctgc 600

aacgttgccc acccggccag cagcaccaag gtggacaaga aaattgtgcc cagggattgt 660

ggttgtaagc cttgcatatg tacagtccca gaagtatcat ctgtcttcat cttccccca 720

aagcccaagg atgtgctcac cattactctg actcctaagg tcacgtgtgt tgtggtagac 780

atcagcaagg atgatcccga ggtccagttc agctggtttg tagatgatgt ggaggtgcac 840

acagctcaga cgcaaccccg ggaggagcag ttcaacagca ctttccgctc agtcagtgaa 900

cttcccatca tgcaccagga ctggctcaat ggcaaggagt tcaaatgcag ggtcaacagt 960

gcagctttcc ctgcccccat cgagaaaacc atctccaaaa ccaaaggcag accgaaggct 1020

ccacaggtgt acaccattcc acctcccaag gagcagatgg ccaaggataa agtcagtctg 1080

acctgcatga taacagactt cttccctgaa gacattactg tggagtggca gtggaatggg 1140

cagccagcgg agaactacaa gaacactcag cccatcatgg acacagatgg ctcttacttc 1200

gtttacagca agctcaatgt gcagaagagc aactgggagg caggaaatac tttcacctgc 1260

tctgtgttac atgagggcct gctcaacctc catactgaga agagcctctc cctctcctct 1320

ggtaaatga 1329

<210> 83
<211> 220
<212> PRT
<213> Mus musculus

<400> 83

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

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Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
            20                  25                  30

Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35                  40                  45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
                85                  90                  95

Thr His Val Pro Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
            100                 105                 110

Lys Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser
        115                 120                 125

Glu Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn
    130                 135                 140

Phe Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu
145                 150                 155                 160

Arg Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp
                165                 170                 175

Ser Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr
            180                 185                 190

Glu Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr
        195                 200                 205

Ser Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215                 220
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<210> 84
<211> 663
<212> DNA
<213> Mus musculus

<400> 84
gatgttgtga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagccttgta cacagtaatg gaaacaccta tttacattgg 120

tacctgcaga agccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggagtt tatttctgct ctcaaagtac acatgttcct 300

ccgtacacgt tcggaggggg gaccaagctg gaaataaaac gggctgatgc tgcaccaact 360

gtatccatct tcccaccatc cagtgagcag ttaacatctg gaggtgcctc agtcgtgtgc 420

ttcttgaaca acttctaccc caaagacatc aatgtcaagt ggaagattga tggcagtgaa 480

cgacaaaatg gcgtcctgaa cagttggact gatcaggaca gcaaagacag cacctacagc 540

atgagcagta ccctcacgtt gaccaaggac gagtatgaac gacataacag ctatacctgt 600

gaggccactc acaagacatc aacttcaccc attgtcaaga gcttcaacag gaatgagtgt 660

tag 663

<210> 85
<211> 118
<212> PRT
<213> Mus musculus

<400> 85

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Trp Met His Trp Val Lys Leu Arg Pro Gly Gln Gly Phe Glu Trp Ile
35 40 45

Gly Glu Ile Asn Pro Arg Asn Gly Gly Thr Asn Asn Asn Glu Asn Phe
50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95

Thr Arg Asp Gly Asn Tyr Asp Pro Phe Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ala
115

<210> 86
<211> 354
<212> DNA
<213> Mus musculus

<400> 86
caggtccaac tccagcagcc tggggctgaa ctggtgaagc ctggggcttc agtgaagttg 60

tcctgcaagg cttctggcta caccttcacc agctactgga tgcactgggt gaagctgagg 120

cctggacaag gctttgagtg gattggagag attaatccta gaaatggtgg tactaacaac 180

aatgagaact tcaagagaaa ggccacactg actgtagaca aatcctccag cacagcctac 240

atgcaactca gcagcctgac atctgaggac tctgcggtct attactgtac aagagatggt 300

aactacgacc cctttgctta ctggggccaa gggactctgg tcactgtctc tgca 354

<210> 87
<211> 113
<212> PRT
<213> Mus musculus

<400> 87

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Thr His Val Pro Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
100 105 110

Lys

<210> 88
<211> 339
<212> DNA
<213> Mus musculus

<400> 88
gatgttgtga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagccttgta cacagtaatg gaaacaccta tttacattgg 120

tacctgcaga agccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggagtt tatttctgct ctcaaagtac acatgttcct 300

ccgtacacgt tcggaggggg gaccaagctg gaaataaaa 339

<210> 89
<211> 5
<212> PRT
<213> Mus musculus

<400> 89

Ser Tyr Trp Met His
1 5

<210> 90
<211> 15
<212> DNA
<213> Mus musculus

<400> 90
agctactgga tgcac 15

<210> 91
<211> 10
<212> PRT
<213> Mus musculus

<400> 91

Glu Ile Asn Pro Arg Asn Gly Gly Thr Asn
1 5 10

<210> 92
<211> 30
<212> DNA
<213> Mus musculus

<400> 92
gagattaatc ctagaaatgg tggtactaac 30

<210> 93
<211> 9
<212> PRT
<213> Mus musculus

<400> 93

Asp Gly Asn Tyr Asp Pro Phe Ala Tyr
1 5

<210> 94
<211> 27
<212> DNA
<213> Mus musculus

<400> 94
gatggtaact acgacccctt tgcttac 27

<210> 95
<211> 16
<212> PRT
<213> Mus musculus

<400> 95

Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His
1 5 10 15

<210> 96
<211> 48
<212> DNA
<213> Mus musculus

<400> 96
agatctagtc agagccttgt acacagtaat ggaaacacct atttacat 48

<210> 97
<211> 7
<212> PRT
<213> Mus musculus

<400> 97

Lys Val Ser Asn Arg Phe Ser
1 5

<210> 98
<211> 21
<212> DNA
<213> Mus musculus

<400> 98
aaagtttcca accgattttc t 21

<210> 99
<211> 10
<212> PRT
<213> Mus musculus

<400> 99

Ser Gln Ser Thr His Val Pro Pro Tyr Thr
1 5 10

<210> 100
<211> 30
<212> DNA
<213> Mus musculus

<400> 100
tctcaaagta cacatgttcc tccgtacacg 30

<210> 101
<211> 453
<212> PRT
<213> Mus musculus

<400> 101

Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser
20 25 30

Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Glu Gly Leu Glu
35 40 45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Gly Arg Tyr Arg Tyr Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ala Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Gly Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys
130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Ser Val Thr Val Thr Trp Asn Ser
145 150 155 160

Gly Ser Leu Ser Ser Ser Val His Thr Phe Pro Ala Leu Leu Gln Ser
165 170 175

Gly Leu Tyr Thr Met Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
180 185 190

Pro Ser Gln Thr Val Thr Cys Ser Val Ala His Pro Ala Ser Ser Thr
195 200 205

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

```
Pro Cys Pro Pro Cys Lys Glu Cys His Lys Cys Pro Ala Pro Asn Leu
225                 230                 235                 240

Glu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Asn Ile Lys Asp Val
                245                 250                 255

Leu Met Ile Ser Leu Thr Pro Lys Val Thr Cys Val Val Val Asp Val
            260                 265                 270

Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val
        275                 280                 285

Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser
    290                 295                 300

Thr Ile Arg Val Val Ser Thr Leu Pro Ile Gln His Gln Asp Trp Met
305                 310                 315                 320

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

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

Gln Val Tyr Ile Leu Pro Pro Pro Ala Glu Gln Leu Ser Arg Lys Asp
        355                 360                 365

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

Val Glu Trp Thr Ser Asn Gly His Thr Glu Glu Asn Tyr Lys Asp Thr
385                 390                 395                 400

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

Asn Met Lys Thr Ser Lys Trp Glu Lys Thr Asp Ser Phe Ser Cys Asn
            420                 425                 430

Val Arg His Glu Gly Leu Lys Asn Tyr Tyr Leu Lys Lys Thr Ile Ser
        435                 440                 445

Arg Ser Pro Gly Lys
    450
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<210> 102
<211> 1362
<212> DNA
<213> Mus musculus

<400> 102
caggttactc tgaaagagtc tggccctggg atattgcagc cctcccagac cctcagtctg 60

acttgttctt tctctgggtt ttcactgagc acttctggta tgggtgtgag ctggattcgt 120

cagccttcag gagagggtct ggagtggctg gcacacattt actgggatga tgacaagcgc 180

tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag aaaccaggta 240

ttcctcaaga tcaccagtgt ggacactgca gatactgcca catactactg tggtcgatat 300

aggtacggct ttgcttactg gggccaaggg actctggtca ctgtctctgc agccaaaaca 360

acacccccat cagtctatcc actggccccc gggtgtggag atacaactgg ttcctccgtg 420

actctgggat gcctggtcaa gggctacttc cctgagtcag tgactgtgac ttggaactct 480

ggatccctgt ccagcagtgt gcacaccttc ccagctctcc tgcagtctgg actctacact 540

atgagcagct cagtgactgt cccctccagc acctggccaa gtcagaccgt cacctgcagc 600

gttgctcacc cagccagcag caccacggtg gacaaaaaac ttgagcccag cgggcccatt 660

tcaacaatca acccctgtcc tccatgcaag gagtgtcaca aatgcccagc tcctaacctc 720

gagggtggac catccgtctt catcttccct ccaaatatca aggatgtact catgatctcc 780

ctgacaccca aggtcacgtg tgtggtggtg gatgtgagcg aggatgaccc agacgtccag 840

atcagctggt ttgtgaacaa cgtggaagta cacacagctc agacacaaac ccatagagag 900

gattacaaca gtactatccg ggtggtcagc accctcccca tccagcacca ggactggatg 960

agtggcaagg agttcaaatg caaggtcaac aacaaagacc tcccatcacc catcgagaga 1020

accatctcaa aaattaaagg gctagtcaga gctccacaag tatacatctt gccgccacca 1080

gcagagcagt tgtccaggaa agatgtcagt ctcacttgcc tggtcgtggg cttcaaccct 1140

ggagacatca gtgtggagtg gaccagcaat gggcatacag aggagaacta caaggacacc 1200

gcaccagtcc tggactctga cggttcttac ttcatatata gcaagctcaa tatgaaaaca 1260

agcaagtggg agaaaacaga ttccttctca tgcaacgtga gacacgaggg tctgaaaaat 1320

tactacctga agaagaccat ctcccggtct ccgggtaaat ga 1362

<210> 103
<211> 219
<212> PRT
<213> Mus musculus

<400> 103

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

```
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35                  40                  45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
    50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
                85                  90                  95

Ser His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
            100                 105                 110

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
        115                 120                 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145                 150                 155                 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
            180                 185                 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
        195                 200                 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215
```

<210> 104
<211> 660
<212> DNA
<213> Mus musculus

<400> 104
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttccg 300

ctcacgttcg gtgctgggac caagctggag ctgaaacggg ctgatgctgc accaactgta 360

tccatcttcc caccatccag tgagcagtta acatctggag gtgcctcagt cgtgtgcttc 420

ttgaacaact tctaccccaa agacatcaat gtcaagtgga agattgatgg cagtgaacga 480

caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg 540

agcagtaccc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag 600

gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgttag 660

<210> 105
<211> 116
<212> PRT
<213> Mus musculus

<400> 105

Gln Val Thr Leu Lys Glu Ser Gly Pro Gly Ile Leu Gln Pro Ser Gln
1 5 10 15

Thr Leu Ser Leu Thr Cys Ser Phe Ser Gly Phe Ser Leu Ser Thr Ser
20 25 30

Gly Met Gly Val Ser Trp Ile Arg Gln Pro Ser Gly Glu Gly Leu Glu
35 40 45

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

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

Phe Leu Lys Ile Thr Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Gly Arg Tyr Arg Tyr Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser
115

<210> 106
<211> 348
<212> DNA
<213> Mus musculus

<400> 106
caggttactc tgaaagagtc tggccctggg atattgcagc cctcccagac cctcagtctg 60

acttgttctt tctctgggtt ttcactgagc acttctggta tgggtgtgag ctggattcgt 120

cagccttcag gagagggtct ggagtggctg gcacacattt actgggatga tgacaagcgc 180

tataacccat ccctgaagag ccggctcaca atctccaagg atacctccag aaaccaggta 240

ttcctcaaga tcaccagtgt ggacactgca gatactgcca catactactg tggtcgatat 300

aggtacggct ttgcttactg gggccaaggg actctggtca ctgtctct 348

<210> 107
<211> 112
<212> PRT
<213> Mus musculus

<400> 107

Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

<210> 108
<211> 336
<212> DNA
<213> Mus musculus

<400> 108
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60

atctcttgca gatctagtca gagcattgta catagtaatg gaaacaccta tttagaatgg 120

tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180

tctggggtcc cagacaggtt cagtggcagt ggatcaggga cagatttcac actcaagatc 240

agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttccg 300

ctcacgttcg gtgctgggac caagctggag ctgaaa 336

<210> 109
<211> 7
<212> PRT

<213> Mus musculus

<400> 109

Thr Ser Gly Met Gly Val Ser
1 5

<210> 110
<211> 21
<212> DNA
<213> Mus musculus

<400> 110
acttctggta tgggtgtgag c 21

<210> 111
<211> 9
<212> PRT
<213> Mus musculus

<400> 111

His Ile Tyr Trp Asp Asp Asp Lys Arg
1 5

<210> 112
<211> 27
<212> DNA
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