SEQUENCE LISTING

<110> Memorial Sloan-Kettering Cancer Center
SCHEINBERG, David A.
DAO, Tao
LIU, Cheng
YAN, Su

<120> ANTIBODIES TO CYTOSOLIC PEPTIDES

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<150> 61/470,635
<151> 2011-04-01

<150> 61/491,392
<151> 2011-05-31

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<170> PatentIn version 3.5

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Ile Tyr Arg Ser Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
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65 70 75 80

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Gln Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser
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Trp Leu Gly Arg Thr Tyr Tyr Gly Ser Lys Trp Tyr Asn Asp Tyr Ala
    50                  55                  60

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

Gln Phe Ser Leu Gln Leu Asn Ser Val Thr Pro Glu Asp Thr Ala Val
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            20                  25                  30

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

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Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
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    50                  55                  60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Leu
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys Arg Ser Arg Gly Gly
            100                 105                 110

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met
        115                 120                 125

Ala Gln Val Gln Leu Gln Gln Ser Gly Pro Gly Leu Val Lys Pro Ser
    130                 135                 140

Gln Thr Leu Ser Leu Thr Cys Ala Ile Ser Gly Asp Ser Val Ser Ser
145                 150                 155                 160

Asn Ser Ala Ala Trp Asn Trp Ile Arg Gln Ser Pro Ser Arg Gly Leu
                165                 170                 175

Glu Trp Leu Gly Arg Thr Tyr Tyr Gly Ser Lys Trp Tyr Asn Asp Tyr
            180                 185                 190

Ala Val Ser Val Lys Ser Arg Ile Thr Ile Asn Pro Asp Thr Ser Lys
        195                 200                 205

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

Gly Arg Val Asp Pro Gly Tyr Ser Tyr Ser Thr Tyr Ser Pro Ser Phe
50 55 60

Gln Gly His Val Thr Ile Ser Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65 70 75 80

Leu Gln Trp Asn Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
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35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

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85 90 95

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35 40 45

Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

Asn Gly Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser
100 105 110

Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

Leu Glu Met Ala Gln Met Gln Leu Val Gln Ser Gly Ala Glu Val Lys
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Leu Glu Trp Met Gly Arg Val Asp Pro Gly Tyr Ser Tyr Ser Thr Tyr
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Ile Ile Tyr Pro Gly Tyr Ser Asp Ile Thr Tyr Ser Pro Ser Phe Gln
1 5 10 15

Gly

<210> 58
<211> 9
<212> PRT
<213> Homo sapiens

<400> 58

His Thr Ala Leu Ala Gly Phe Asp Tyr
1 5

<210> 59
<211> 30
<212> DNA
<213> Homo sapiens

<400> 59
ggctacaact ttagcaacaa gtggatcggc 30

<210> 60
<211> 51
<212> DNA
<213> Homo sapiens

<400> 60
atcatctatc ccggttactc ggacatcacc tacagcccgt ccttccaagg c 51

<210> 61
<211> 27
<212> DNA
<213> Homo sapiens

<400> 61
cacacagctt tggccggctt tgactac 27

<210> 62
<211> 11
<212> PRT
<213> Homo sapiens

<400> 62

Arg Ala Ser Gln Asn Ile Asn Lys Trp Leu Ala
1 5 10

<210> 63
<211> 7

<212> PRT
<213> Homo sapiens

<400> 63

Lys Ala Ser Ser Leu Glu Ser
1 5

<210> 64
<211> 8
<212> PRT
<213> Homo sapiens

<400> 64

Gln Gln Tyr Asn Ser Tyr Ala Thr
1 5

<210> 65
<211> 33
<212> DNA
<213> Homo sapiens

<400> 65
cgggccagtc agaatatcaa taagtggctg gcc 33

<210> 66
<211> 21
<212> DNA
<213> Homo sapiens

<400> 66
aaggcgtcta gtttagaaag t 21

<210> 67
<211> 24
<212> DNA
<213> Homo sapiens

<400> 67
caacaatata atagttatgc gacg 24

<210> 68
<211> 118
<212> PRT
<213> Homo sapiens

<400> 68

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

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Asn Phe Ser Asn Lys
20 25 30

Trp Ile Gly Trp Val Arg Gln Leu Pro Gly Arg Gly Leu Glu Trp Ile

35 40 45

Ala Ile Ile Tyr Pro Gly Tyr Ser Asp Ile Thr Tyr Ser Pro Ser Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Thr Ser Ile Asn Thr Ala Tyr
65 70 75 80

Leu His Trp His Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
85 90 95

Val Arg His Thr Ala Leu Ala Gly Phe Asp Tyr Trp Gly Leu Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 69
<211> 354
<212> DNA
<213> Homo sapiens

<400> 69
caggtgcagc tggtgcagtc tggagcagag gtgaaaaagc ccggagagtc tctgaagatc 60

tcctgtaagg gttctggcta caactttagc aacaagtgga tcggctgggt gcgccaattg 120

cccgggagag gcctggagtg gatagcaatc atctatcccg gttactcgga catcacctac 180

agcccgtcct tccaaggccg cgtcaccatc tccgccgaca cgtccattaa caccgcctac 240

ctgcactggc acagcctgaa ggcctcggac accgccatgt attattgtgt gcgacacaca 300

gctttggccg gctttgacta ctggggcctg ggcaccctgg tcaccgtctc ctca 354

<210> 70
<211> 107
<212> PRT
<213> Homo sapiens

<400> 70

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asn Lys Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Arg Pro Gly Lys Ala Pro Gln Leu Leu Ile
35 40 45

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

Ser Gly Ser Gly Thr Glu Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Ala Thr
85 90 95

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
100 105

<210> 71
<211> 321
<212> DNA
<213> Homo sapiens

<400> 71
gacatccaga tgacccagtc tccttccacc ctgtctgcat ctgtaggaga cagagtcaca 60

atcacttgcc gggccagtca gaatatcaat aagtggctgg cctggtatca gcagagacca 120

gggaaagccc ctcagctcct gatctataag gcgtctagtt tagaaagtgg ggtcccatct 180

aggttcagcg gcagtggatc tgggacagaa tacactctca ccatcagcag cctgcagcct 240

gatgattttg caacttatta ctgccaacaa tataatagtt atgcgacgtt cggccaaggg 300

accaaggtgg aaatcaaacg t 321

<210> 72
<211> 246
<212> PRT
<213> Homo sapiens

<400> 72

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asn Ile Asn Lys Trp
20 25 30

Leu Ala Trp Tyr Gln Gln Arg Pro Gly Lys Ala Pro Gln Leu Leu Ile
35 40 45

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

Ser Gly Ser Gly Thr Glu Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Asn Ser Tyr Ala Thr
85 90 95

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Ser Arg Gly Gly Gly
100 105 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Leu Glu Met Ala
115 120 125

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

Ser Leu Lys Ile Ser Cys Lys Gly Ser Gly Tyr Asn Phe Ser Asn Lys
145 150 155 160

Trp Ile Gly Trp Val Arg Gln Leu Pro Gly Arg Gly Leu Glu Trp Ile
165 170 175

Ala Ile Ile Tyr Pro Gly Tyr Ser Asp Ile Thr Tyr Ser Pro Ser Phe
180 185 190

Gln Gly Arg Val Thr Ile Ser Ala Asp Thr Ser Ile Asn Thr Ala Tyr
195 200 205

Leu His Trp His Ser Leu Lys Ala Ser Asp Thr Ala Met Tyr Tyr Cys
210 215 220

Val Arg His Thr Ala Leu Ala Gly Phe Asp Tyr Trp Gly Leu Gly Thr
225 230 235 240

Leu Val Thr Val Ser Ser
245

<210> 73
<211> 738
<212> DNA
<213> Homo sapiens

<400> 73
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atcacttgcc gggccagtca gaatatcaat aagtggctgg cctggtatca gcagagacca 120

gggaaagccc ctcagctcct gatctataag gcgtctagtt tagaaagtgg ggtcccatct 180

aggttcagcg gcagtggatc tgggacagaa tacactctca ccatcagcag cctgcagcct 240

gatgattttg caacttatta ctgccaacaa tataatagtt atgcgacgtt cggccaaggg 300

accaaggtgg aaatcaaacg ttctagaggt ggtggtggta gcggcggcgg cggctctggt 360

ggtggtggat ccctcgagat ggcccaggtg cagctggtgc agtctggagc agaggtgaaa 420

aagcccggag agtctctgaa gatctcctgt aagggttctg gctacaactt tagcaacaag 480

tggatcggct gggtgcgcca attgcccggg agaggcctgg agtggatagc aatcatctat 540

cccggttact cggacatcac ctacagcccg tccttccaag gccgcgtcac catctccgcc 600

gacacgtcca ttaacaccgc ctacctgcac tggcacagcc tgaaggcctc ggacaccgcc 660

atgtattatt gtgtgcgaca cacagctttg gccggctttg actactgggg cctgggcacc 720

ctggtcaccg tctcctca 738

<210> 74
<211> 10
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<213> Homo sapiens

<400> 74

Gly Phe Thr Phe Asp Asp Tyr Gly Met Ser
1 5 10

<210> 75
<211> 17
<212> PRT
<213> Homo sapiens

<400> 75

Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser Val Arg
1 5 10 15

Gly

<210> 76
<211> 12
<212> PRT
<213> Homo sapiens

<400> 76

Glu Arg Gly Tyr Gly Tyr His Asp Pro His Asp Tyr
1 5 10

<210> 77
<211> 30
<212> DNA
<213> Homo sapiens

<400> 77
gggttcacct ttgatgatta tggcatgagc 30

<210> 78
<211> 51
<212> DNA
<213> Homo sapiens

<400> 78

ggtattaatt ggaatggtgg tagcacaggt tatgcagact ctgtgagggg c 51

<210> 79
<211> 36
<212> DNA
<213> Homo sapiens

<400> 79
gagcgtggct acgggtacca tgatccccat gactac 36

<210> 80
<211> 11
<212> PRT
<213> Homo sapiens

<400> 80

Gly Arg Asn Asn Ile Gly Ser Lys Ser Val His
1 5 10

<210> 81
<211> 7
<212> PRT
<213> Homo sapiens

<400> 81

Asp Asp Ser Asp Arg Pro Ser
1 5

<210> 82
<211> 11
<212> PRT
<213> Homo sapiens

<400> 82

Gln Val Trp Asp Ser Ser Ser Asp His Val Val
1 5 10

<210> 83
<211> 33
<212> DNA
<213> Homo sapiens

<400> 83
gggagaaaca acattggaag taaaagtgtg cac 33

<210> 84
<211> 21
<212> DNA
<213> Homo sapiens

<400> 84
gatgatagcg accggccctc a 21

<210> 85
<211> 33
<212> DNA
<213> Homo sapiens

<400> 85
caggtgtggg atagtagtag tgatcatgtg gta 33

<210> 86
<211> 121
<212> PRT
<213> Homo sapiens

<400> 86

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

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

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

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

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

Ala Arg Glu Arg Gly Tyr Gly Tyr His Asp Pro His Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 87
<211> 363
<212> DNA
<213> Homo sapiens

<400> 87
gaagtgcagc tggtgcagtc tgggggaggt gtggtacggc ctgggggtc cctgagactc 60

tcctgtgcag cctctgggtt cacctttgat gattatggca tgagctgggt ccgccaagct 120

ccagggaagg ggctggagtg ggtctctggt attaattgga atggtggtag cacaggttat 180

gcagactctg tgaggggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240

ctgcaaatga acagtctgag agccgaggac acggccttgt attactgtgc gagagagcgt 300

ggctacgggt accatgatcc ccatgactac tggggccaag gcaccctggt gaccgtctcc 360

tca 363

<210> 88
<211> 109
<212> PRT
<213> Homo sapiens

<400> 88

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1 5 10 15

Thr Ala Arg Ile Thr Cys Gly Arg Asn Asn Ile Gly Ser Lys Ser Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
100 105

<210> 89
<211> 327
<212> DNA
<213> Homo sapiens

<400> 89
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acctgtggga gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatgt ggtattcggc 300

ggagggacca agctgaccgt cctaggt 327

<210> 90
<211> 249
<212> PRT

<213> Homo sapiens

<400> 90

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Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Lys
1               5                  10                  15

Thr Ala Arg Ile Thr Cys Gly Arg Asn Asn Ile Gly Ser Lys Ser Val
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
        35                  40                  45

Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
                85                  90                  95

Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Ser Arg Gly
            100                 105                 110

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ser Leu Glu Met Ala
        115                 120                 125

Glu Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Arg Pro Gly Gly
    130                 135                 140

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
145                 150                 155                 160

Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
                165                 170                 175

Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser Val
            180                 185                 190

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

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Leu Tyr Tyr Cys
    210                 215                 220

Ala Arg Glu Arg Gly Tyr Gly Tyr His Asp Pro His Asp Tyr Trp Gly
225                 230                 235                 240
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Gln Gly Thr Leu Val Thr Val Ser Ser
245

<210> 91
<211> 747
<212> DNA
<213> Homo sapiens

<400> 91
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acctgtggga gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggtcgt ctatgatgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatgt ggtattcggc 300

ggagggacca agctgaccgt cctaggttct agaggtggtg gtggtagcgg cggcggcggc 360

tctggtggat ccctcgagat ggccgaagtg cagctggtgc agtctggggg aggtgtggta 420

cggcctgggg ggtccctgag actctcctgt gcagcctctg ggttcacctt tgatgattat 480

ggcatgagct gggtccgcca agctccaggg aaggggctgg agtgggtctc tggtattaat 540

tggaatggtg gtagcacagg ttatgcagac tctgtgaggg gccgattcac catctccaga 600

gacaacgcca agaactccct gtatctgcaa atgaacagtc tgagagccga ggacacggcc 660

ttgtattact gtgcgagaga gcgtggctac gggtaccatg atccccatga ctactggggc 720

caaggcaccc tggtgaccgt ctcctca 747

<210> 92
<211> 10
<212> PRT
<213> Homo sapiens

<400> 92

Gly Phe Ser Val Ser Gly Thr Tyr Met Gly
1 5 10

<210> 93
<211> 16
<212> PRT
<213> Homo sapiens

<400> 93

Leu Leu Tyr Ser Gly Gly Gly Thr Tyr His Pro Ala Ser Leu Gln Gly
1 5 10 15

<210> 94
<211> 10
<212> PRT

<213> Homo sapiens

<400> 94

Gly Gly Ala Gly Gly Gly His Phe Asp Ser
1 5 10

<210> 95
<211> 30
<212> DNA
<213> Homo sapiens

<400> 95
gggttctccg tcagtggcac ctacatgggc 30

<210> 96
<211> 48
<212> DNA
<213> Homo sapiens

<400> 96
cttctttata gtggtggcgg cacataccac ccagcgtccc tgcagggc 48

<210> 97
<211> 30
<212> DNA
<213> Homo sapiens

<400> 97
ggaggggcag gaggtggcca ctttgactcc 30

<210> 98
<211> 14
<212> PRT
<213> Homo sapiens

<400> 98

Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
1 5 10

<210> 99
<211> 7
<212> PRT
<213> Homo sapiens

<400> 99

Gly Asn Ser Asn Arg Pro Ser
1 5

<210> 100
<211> 11
<212> PRT
<213> Homo sapiens

<400> 100

Ala Ala Trp Asp Asp Ser Leu Asn Gly Tyr Val
1 5 10

<210> 101
<211> 42
<212> DNA
<213> Homo sapiens

<400> 101
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<210> 102
<211> 21
<212> DNA
<213> Homo sapiens

<400> 102
ggtaacagca atcggccctc a 21

<210> 103
<211> 33
<212> DNA
<213> Homo sapiens

<400> 103
gcagcatggg atgacagcct gaatggttat gtc 33

<210> 104
<211> 118
<212> PRT
<213> Homo sapiens

<400> 104

Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu Leu Gln Pro Gly Gly
1 5 10 15

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

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

Ala Leu Leu Tyr Ser Gly Gly Gly Thr Tyr His Pro Ala Ser Leu Gln
50 55 60

Gly Arg Phe Ile Val Ser Arg Asp Ser Ser Lys Asn Met Val Tyr Leu
65 70 75 80

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

Lys Gly Gly Ala Gly Gly Gly His Phe Asp Ser Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 105
<211> 354
<212> DNA
<213> Homo sapiens

<400> 105
gaggtgcagc tggtggagac cggaggaggc ttgctccagc cgggggggtc cctcagactc 60

tcctgtgcag cctctgggtt ctccgtcagt ggcacctaca tgggctgggt ccgccaggct 120

ccagggaagg gactggagtg ggtcgcactt ctttatagtg gtggcggcac ataccaccca 180

gcgtccctgc agggccgatt catcgtctcc agagacagct ccaagaatat ggtctatctt 240

caaatgaata gcctgaaagc cgaggacacg gccgtctatt actgtgcgaa aggaggggca 300

ggaggtggcc actttgactc ctggggccaa ggcaccctgg tgaccgtctc ctca 354

<210> 106
<211> 112
<212> PRT
<213> Homo sapiens

<400> 106

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

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

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu
65 70 75 80

Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser
85 90 95

Leu Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

<210> 107

<211> 336
<212> DNA
<213> Homo sapiens

<400> 107
cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120

cttccaggaa cagccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cagtgggctc 240

cagtctgagg atgaggctga ttattactgt gcagcatggg atgacagcct gaatggttat 300

gtcttcggaa ctgggaccaa gctgaccgtc ctaggt 336

<210> 108
<211> 251
<212> PRT
<213> Homo sapiens

<400> 108

Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

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

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu
65 70 75 80

Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser
85 90 95

Leu Asn Gly Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu Gly
100 105 110

Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Leu Glu Met Ala Glu Val Gln Leu Val Glu Thr Gly Gly Gly Leu
130 135 140

Leu Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe
145 150 155 160

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Ser Val Ser Gly Thr Tyr Met Gly Trp Val Arg Gln Ala Pro Gly Lys
                165                 170                 175

Gly Leu Glu Trp Val Ala Leu Leu Tyr Ser Gly Gly Gly Thr Tyr His
            180                 185                 190

Pro Ala Ser Leu Gln Gly Arg Phe Ile Val Ser Arg Asp Ser Ser Lys
        195                 200                 205

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

Val Tyr Tyr Cys Ala Lys Gly Gly Ala Gly Gly Gly His Phe Asp Ser
225                 230                 235                 240

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
                245                 250
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<210> 109
<211> 753
<212> DNA
<213> Homo sapiens

<400> 109
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tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120

cttccaggaa cagcccccaa actcctcatc tatggtaaca gcaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cagtgggctc 240

cagtctgagg atgaggctga ttattactgt gcagcatggg atgacagcct gaatggttat 300

gtcttcggaa ctgggaccaa gctgaccgtc ctaggttcta gaggtggtgg tggtagcggc 360

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ggaggaggct tgctccagcc ggggggggtcc ctcagactct cctgtgcagc ctctgggttc 480

tccgtcagtg gcacctacat gggctgggtc cgccaggctc agggaaggg actggagtgg 540

gtcgcacttc tttatagtgg tggcggcaca taccacccag cgtccctgca gggccgattc 600

atcgtctcca gagacagctc caagaatatg gtctatcttc aaatgaatag cctgaaagcc 660

gaggacacgg ccgtctatta ctgtgcgaaa ggaggggcag gaggtggcca ctttgactcc 720

tggggccaag gcaccctggt gaccgtctcc tca 753

<210> 110
<211> 9
<212> PRT
<213> Homo sapiens

<400> 110

Ala Met Phe Pro Asn Ala Pro Tyr Leu
1 5

<210> 111
<211> 9
<212> PRT
<213> Homo sapiens

<400> 111

Arg Met Ala Pro Asn Ala Pro Tyr Leu
1 5

<210> 112
<211> 9
<212> PRT
<213> Homo sapiens

<400> 112

Arg Met Phe Ala Asn Ala Pro Tyr Leu
1 5

<210> 113
<211> 9
<212> PRT
<213> Homo sapiens

<400> 113

Arg Met Phe Pro Ala Ala Pro Tyr Leu
1 5

<210> 114
<211> 9
<212> PRT
<213> Homo sapiens

<400> 114

Arg Met Phe Pro Asn Ala Ala Tyr Leu
1 5

<210> 115
<211> 9
<212> PRT
<213> Homo sapiens

<400> 115

Arg Met Phe Pro Asn Ala Pro Ala Leu
1 5

<210> 116

<211> 9
<212> PRT
<213> Homo sapiens

<400> 116

Ile Leu Ser Leu Glu Leu Met Lys Leu
1 5

<210> 117
<211> 9
<212> PRT
<213> Homo sapiens

<400> 117

Gln Leu Gln Asn Pro Ser Tyr Asp Lys
1 5

<210> 118
<211> 449
<212> PRT
<213> Homo sapiens

<400> 118

Met Gly Ser Asp Val Arg Asp Leu Asn Ala Leu Leu Pro Ala Val Pro
1 5 10 15

Ser Leu Gly Gly Gly Gly Gly Cys Ala Leu Pro Val Ser Gly Ala Ala
20 25 30

Gln Trp Ala Pro Val Leu Asp Phe Ala Pro Pro Gly Ala Ser Ala Tyr
35 40 45

Gly Ser Leu Gly Gly Pro Ala Pro Pro Pro Ala Pro Pro Pro Pro Pro
50 55 60

Pro Pro Pro Pro His Ser Phe Ile Lys Gln Glu Pro Ser Trp Gly Gly
65 70 75 80

Ala Glu Pro His Glu Glu Gln Cys Leu Ser Ala Phe Thr Val His Phe
85 90 95

Ser Gly Gln Phe Thr Gly Thr Ala Gly Ala Cys Arg Tyr Gly Pro Phe
100 105 110

Gly Pro Pro Pro Pro Ser Gln Ala Ser Ser Gly Gln Ala Arg Met Phe
115 120 125

Pro Asn Ala Pro Tyr Leu Pro Ser Cys Leu Glu Ser Gln Pro Ala Ile
130 135 140

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Arg Asn Gln Gly Tyr Ser Thr Val Thr Phe Asp Gly Thr Pro Ser Tyr
145                 150                 155                 160

Gly His Thr Pro Ser His His Ala Ala Gln Phe Pro Asn His Ser Phe
                165                 170                 175

Lys His Glu Asp Pro Met Gly Gln Gln Gly Ser Leu Gly Glu Gln Gln
            180                 185                 190

Tyr Ser Val Pro Pro Pro Val Tyr Gly Cys His Thr Pro Thr Asp Ser
        195                 200                 205

Cys Thr Gly Ser Gln Ala Leu Leu Leu Arg Thr Pro Tyr Ser Ser Asp
    210                 215                 220

Asn Leu Tyr Gln Met Thr Ser Gln Leu Glu Cys Met Thr Trp Asn Gln
225                 230                 235                 240

Met Asn Leu Gly Ala Thr Leu Lys Gly Val Ala Ala Gly Ser Ser Ser
                245                 250                 255

Ser Val Lys Trp Thr Glu Gly Gln Ser Asn His Ser Thr Gly Tyr Glu
            260                 265                 270

Ser Asp Asn His Thr Thr Pro Ile Leu Cys Gly Ala Gln Tyr Arg Ile
        275                 280                 285

His Thr His Gly Val Phe Arg Gly Ile Gln Asp Val Arg Arg Val Pro
    290                 295                 300

Gly Val Ala Pro Thr Leu Val Arg Ser Ala Ser Glu Thr Ser Glu Lys
305                 310                 315                 320

Arg Pro Phe Met Cys Ala Tyr Pro Gly Cys Asn Lys Arg Tyr Phe Lys
                325                 330                 335

Leu Ser His Leu Gln Met His Ser Arg Lys His Thr Gly Glu Lys Pro
            340                 345                 350

Tyr Gln Cys Asp Phe Lys Asp Cys Glu Arg Arg Phe Ser Arg Ser Asp
        355                 360                 365

Gln Leu Lys Arg His Gln Arg Arg His Thr Gly Val Lys Pro Phe Gln
    370                 375                 380

Cys Lys Thr Cys Gln Arg Lys Phe Ser Arg Ser Asp His Leu Lys Thr
385                 390                 395                 400
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His Thr Arg Thr His Thr Gly Lys Thr Ser Glu Lys Pro Phe Ser Cys
                405                 410                 415


Arg Trp Pro Ser Cys Gln Lys Lys Phe Ala Arg Ser Asp Glu Leu Val
            420                 425                 430


Arg His His Asn Met His Gln Arg Asn Met Thr Lys Leu Gln Leu Ala
        435                 440                 445


Leu
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1               5                   10
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Gly Ser Asn Ser Ala Phe Asp Phe
1               5
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Ser Asn Ser Ala Ala Trp Asn
1               5
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Gly Arg Leu Gly Asp Ala Phe Asp Ile
1 5

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Ser Asp Gly Ala Ala Trp Asn
1 5

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Arg Thr Tyr Tyr Arg Ser Lys Trp Tyr Asn Asp Tyr Ala Val Ser Val
1 5 10 15

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Gly Asp Tyr Tyr Tyr Gly Met Asp Val
1 5

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Ser Asn Ala Ala Ala Trp Asn
1 5

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Arg Thr Tyr Tyr Gly Ser Lys Trp Tyr Asn Asp Tyr Ala Val Ser Val
1 5 10 15

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Gly Ala Phe Asp Ile
1 5

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Ser Tyr Trp Ile Ser
1 5

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Arg Ile Asp Pro Ser Asp Ser Tyr Thr Asn Tyr Ser Pro Ser Phe Gln
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Gly

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Gly Asp Tyr Asp Phe Tyr Leu Asp Pro
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Ser Tyr Gly Ile Ser
1 5

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Trp Ile Ser Ala Tyr Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln
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Gly

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Asp Leu Tyr Ser Ser Gly Trp Tyr Glu Ser Tyr Tyr Tyr Gly Met Asp
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Val

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Ser Tyr Ala Ile Ser
1 5

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Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe Gln
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Gly

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Arg Ile Pro Pro Tyr Tyr Gly Met Asp Val
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Trp Ile Ser Ala His Asn Gly Asn Thr Asn Tyr Ala Gln Lys Leu Gln
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Gly

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Asp Arg Val Trp Phe Gly Asp Leu Ser Asp
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Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Glu Gln
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Gly

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Asn Tyr Asp Phe Trp Ser Gly Asp Ala Phe Asp Ile
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Ile Pro Gly Thr Asn Tyr Ala Gln Lys Phe Gln Gly
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Phe Tyr Gly Met Asp Val
1 5

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Asp Tyr Gly Met Ser
1 5

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Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser Val
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Glu Arg Gly Tyr Gly Tyr His Asp Pro His Asp Tyr
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Asn Tyr Thr Met Asn
1 5

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Ser Ile Ser Leu Ser Gly Ala Tyr Ile Tyr Tyr Ala Asp Ser Leu
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Glu Gly Tyr Ser Ser Ser Val Tyr Asp Ala Phe Asp Leu
1 5 10

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Ser Tyr Gly Met His
1 5

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Gly Ile Leu Ser Asp Gly Gly Lys Asp Tyr Tyr Val Asp Ser Val
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Cys Ser Ser Asn Tyr Gly Asn Asp Ala Phe Asp Ile
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Thr Tyr Ser Met Asn
1 5

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Ser Ile Ser Ser Gly Ala Tyr Ser Ile Phe Tyr Ala Asp Ser Val
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Asp Gln Tyr Tyr Gly Asp Lys Trp Asp Ala Phe Asp Ile
1 5 10

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Ser Tyr Gly Met Asn
1 5

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Ser Ile Ser Ser Gly Gly Ser Ile Tyr Tyr Ala Asp Ser Val
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Glu Tyr Tyr Trp Asp Ala Phe Asp Ile
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Thr Val Asn
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Ser Asn Asn Gln Arg Pro Ser Gly
1 5

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Ala Ala Trp Asp Asp Ser Leu Asn Gly Trp Val Phe Gly
1 5 10

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Glu Ala Trp Asp Asp Ser Leu Lys Gly Pro Val Phe Gly
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Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly Tyr Asp Val His
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Gly Asn Ser Asn Arg Pro Ser Gly

1 5

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Gln Ser Tyr Asp Ser Ser Leu Ser Ala Asp Asn Tyr Val Phe Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Arg Asn Ile Val Asn
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Ser Asn Ile Glu Arg Pro Ser Gly
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Lys Asn Asp Gln Arg Pro Ser Gly
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Ser Ala Trp Asp Asp Ser Leu Asp Gly His Val Val Phe Gly
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Ala Ala Trp Asp Asp Ser Leu Asn Gly Tyr Val Phe Gly
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Ser Asn Ser Gln Arg Pro Ser Gly
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Ala Ala Trp Asp Asp Ser Leu Asn Gly Val Val Phe Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Tyr Val Tyr
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Arg Ser Asn Gln Arg Pro Ser Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Arg Asn Thr Val Asn
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asp Tyr Val Ser
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Asp Asn Asn Lys Arg Pro Ser Gly
1 5

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Gly Thr Trp Asp Asn Ser Leu Ser Ala Trp Val Phe Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Ser Val Tyr
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Asn Asn Asn Gln Arg Pro Ser Gly
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Ala Thr Trp Asp Asp Ser Leu Ser Gly Trp Val Phe Gly
1 5 10

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Arg Asn Asn Gln Arg Pro Ser Gly
1 5

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Ala Ala Trp Asp Asp Ser Leu Ser Ala Trp Val Phe Gly
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Cys Ser Gly Ser Thr Ser Asn Ile Gly Ser Tyr Tyr Val Ser
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Asp Asn Asn Asn Arg Pro Ser Gly
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Gly Thr Trp Asp Ser Ser Leu Ser Ala Trp Val Phe Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser
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Cys Ser Gly Ser Asn Ser Asn Ile Gly Thr Asn Thr Val Thr
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Ser Asn Phe Glu Arg Pro Ser Gly
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Ser Ala Trp Asp Asp Ser Phe Asn Gly Pro Val Phe Gly
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Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Tyr Val Ser
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Ala Ala Trp Asp Asp Gly Leu Arg Gly Tyr Val Phe Gly
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Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn
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Ala Ala Ser Ser Leu Gln Ser
1 5

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Gln Gln Ser Tyr Ser Thr Pro Thr
1 5

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Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu Ala
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Ala Ala Ser Thr Leu Gln Ser
1 5

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Gln Lys Tyr Asn Ser Ala Pro Gly Val Thr
1 5 10

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Arg Ala Ser Gln Ser Ile Asn Gly Trp Leu Ala
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Arg Ala Ser Thr Leu Gln Ser
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Gln Gln Ser Ser Ser Leu Pro Phe Thr
1 5

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Arg Ala Ser Gln Gly Ile Ser Tyr Tyr Leu Ala
1 5 10

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Ala Ala Ser Thr Leu Lys Ser
1 5

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Gln Gln Leu Asn Ser Tyr Pro Leu Thr
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Gly Gly Asn Asn Ile Gly Ser Lys Ser Val His
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Asp Asp Ser Asp Arg Pro Ser
1 5

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Gln Val Trp Asp Ser Ser Ser Asp His Pro Val
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Gln Val Trp Asp Ser Ser Gly Asp His Pro Val
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Tyr Asp Ser Asp Arg Pro Ser
1 5

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Gly Gly Thr Asn Ile Gly Ser Arg Phe Val His
1 5 10

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Gly Gly Asn Asn Val Glu Ser Lys Ser Val His
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Tyr Asp Arg Asp Arg Pro Ser
1 5

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Glu Val Trp Asp Ser Gly Ser Asp His Pro Val
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Gly Gly Lys Asn Ile Gly Ser Lys Ser Val His
1 5 10

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Gln Val Trp Asp Ser Gly Ser Asp His Tyr Val
1 5 10

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<400> 221

Gln Val Trp Ile Ser Ser Gly Asp Arg Val Ile
1 5 10

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Gly Gly Asp Asn Ile Gly Ser Gln Gly Val His
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Tyr Asp Thr Asp Arg Pro Ser
1 5

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Gln Val Trp Gly Ala Ser Ser Asp His Pro Val
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Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser
1 5 10

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Asp Val Ser Lys Arg Pro Ser
1 5

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Gly Ile Tyr Thr Tyr Ser Asp Ser Trp Val
1 5 10

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Asp Val Gly Asn Arg Pro Ser
1 5

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Ser Ser Tyr Thr Ser Ser Ser Thr Arg Val

1 5 10

<210> 230
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Thr Gly Thr Arg Ser Asp Val Gly Leu Tyr Asn Tyr Val Ala
1 5 10

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Asp Val Ile Tyr Arg Pro Gly
1 5

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Ser Ser Tyr Thr Asn Thr Gly Thr Val Leu
1 5 10

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Thr Gly Thr Ser Ser Asp Phe Gly Asp Tyr Asp Tyr Val Ser
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Asp Val Ser Asp Arg Pro Ser
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Gln Ser Tyr Asp Ser Ser Leu Ser Gly Ser Gly Val
1 5 10

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

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

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

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

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

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Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

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

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

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

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
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<210> 237
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<400> 237

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Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
1               5                   10                  15

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

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
        35                  40                  45

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
    50                  55                  60

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
65                  70                  75                  80

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
                85                  90                  95
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Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210>  238
<211>  105
<212>  PRT
<213>  Homo sapiens

<400>  238

Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser Glu
1               5                   10                  15


Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
            20                  25                  30


Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val
        35                  40                  45


Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys
    50                  55                  60


Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
65                  70                  75                  80


His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
                85                  90                  95


Lys Thr Val Ala Pro Thr Glu Cys Ser
            100                 105
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