

SEQUENCE LISTING

<110> Regeneron Pharmaceuticals, Inc.
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<120> ANTI-MET ANTIBODIES, BISPECIFIC ANTIGEN BINDING MOLECULES THAT
BIND MET, AND METHODS OF USE THEREOF

<130> 10316W001

<140> TBD

<141> 2017-11-03

<150> 62/423,068

<151> 2016-11-16

<150> 62/479,516

<151> 2017-03-31

<160> 158

<170> PatentIn version 3.5

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aagttgaggt ctgtgaccgc cgcagacacg gccgtgtatt actgtgagag gggagacgat	300
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Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Ile Ser Ser Tyr
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Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

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

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

Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
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Arg Gly Asp Asp Leu Leu Val Val Thr Ser Val Tyr Trp Tyr Ile Asp
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120

ccaggcaagg ggctggagtg gatggcagtt atatggtatg atggaagtaa tgattactat

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

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

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

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

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 20 25 30

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

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

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

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

Ala Arg Ala Asn Asn Trp Asn Arg Phe Asp Ala Phe Asp Leu Trp Gly
 100 105 110

Gln Gly Thr Met Val Thr Val Ser Ser
 115 120

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 Gly Phe Thr Phe Ser Ser Phe Gly
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 gcagactctg tgaagggccg attcaccatc tccagagaca acgacaagaa ttcactgtat 240
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 35 40 45
 Ser Tyr Ile Thr Ser Ser Gly Asn Met Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Asp Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Ser Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Val Arg Gly Gly Arg Phe Leu Glu Trp Leu Thr Tyr Tyr Val Met Val
100 105 110

Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<210> 29
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ccatactccg tgaagggccg attcaccatc tccagagaca attcccagaa cacactatat 240
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20 25 30

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

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

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

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

Ala Arg Glu Asp Phe Ile Asn Tyr Arg Ser Phe Asp Tyr Trp Gly Gln
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser
 115 120

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Gly Phe Thr Phe Ser Ser Tyr Gly
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ccaggcaagg ggctggagtg ggtggcaa ataatggtttg acggaagtaa tgagaactat 180
gtcgagtcca ttcagggccg attcaccatc tccagagaca attccaagaa cacactgaat 240
ctgcagatga acagcctgag agccgaggac tcggctgtct attactgtgt gagagaggga 300
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<213> Homo sapiens

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

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 <212> DNA
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 atagactccg tgaagggccg attcaccatc tcaagagaca attccaagaa cacgctgtat 240
 ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagagagggc 300

tatgattcgg ggactgatta tatcccctat gatatttttg atatttgggg ccaagggaca 360
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 20 25 30

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

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

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

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

Ala Arg Glu Gly Tyr Asp Ser Gly Thr Asp Tyr Ile Pro Tyr Asp Ile
 100 105 110

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
 115 120 125

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<210> 52

<211> 8
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<210> 54
<211> 8
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Phe Asp Ile

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 ccagggaagg gcctggagtg ggtctcaggt attacttgg a atagttataa catagactat 180
 gctgactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
 ctgcaaatga acagtctgag agctgaggac acggccttgt attactgtgc aaaagatgat 300
 gactacagta actacgttta ctttgactac tggggccagg gaaccctggt caccgtctcc 360
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 20 25 30
 Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Gly Ile Thr Trp Asn Ser Tyr Asn Ile Asp Tyr Ala Asp Ser Val
 50 55 60
 Lys 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 Lys Asp Asp Asp Tyr Ser Asn Tyr Val Tyr Phe Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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24

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<400> 60

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1 5

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24

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<400> 62

Ile Thr Trp Asn Ser Tyr Asn Ile
1 5

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<212> DNA
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<400> 63
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<212> PRT
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<400> 64

Ala Lys Asp Asp Asp Tyr Ser Asn Tyr Val Tyr Phe Asp Tyr
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cctggacaag gacttgagtg gatgggatgg atcagcactt acaatgggtga cacaatctct 180
gcacagatgc tccaggacag agtcaccctg accgcagaca catccacgcg cacagcctac 240
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Thr Tyr
20 25 30

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

Gly Trp Ile Ser Thr Tyr Asn Gly Asp Thr Ile Ser Ala Gln Met Leu
50 55 60

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

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

Ala Arg Gly His Glu Tyr Asp Ser Leu Val Tyr Ser Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

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24

<210> 68
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1 5

<210> 69
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24

<210> 70
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<400> 70

Ile Ser Thr Tyr Asn Gly Asp Thr
1 5

<210> 71
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Ala Arg Gly His Glu Tyr Asp Ser Leu Val Tyr Ser Tyr

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<212> DNA

<213> Homo sapiens

<400> 73

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120

ccaggcaggg ggctggagtg ggtggcggtt atatggcatg atggagatgt tgaatactat

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<213> Homo sapiens

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1

5

10

15

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25

30

Ala Met His Trp Val Arg Gln Ala Pro Gly Arg Gly Leu Glu Trp Val

35

40

45

Ala Val Ile Trp His Asp Gly Asp Val Glu Tyr Tyr Val Asp Ser Val
50 55 60

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Ser Thr 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 Ala Trp Asp Leu Leu Arg Pro Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

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24

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<400> 76

Gly Phe Thr Phe Ser Ser Tyr Ala
1 5

<210> 77
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atatggcatg atggagatgt tgaa

24

<210> 78
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<400> 78

Ile Trp His Asp Gly Asp Val Glu
1 5

<210> 79
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<212> DNA
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<400> 79
gcgagagagg cgtgggacct actacgtccc ttgactat 39

<210> 80
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<400> 80

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1 5 10

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<211> 351
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ccagggaagg ggctggagtg ggtctcactt atttatagca gtggtcacac atactacgca 180
gactccgtga agggccgatt caccatctcc agacacaatt ccaagaacac actgtatcta 240
caaatggaca gcctgagagc tgaggacacg gccgtgtatt actgtgagcg tgcttttcgca 300
gcggatgttt ttgatattctg gggccaaggg acaatggtca ccgtctcttc a 351

<210> 82
<211> 117
<212> PRT
<213> Homo sapiens

<400> 82

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

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

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

Ser Leu Ile Tyr Ser Ser Gly His Thr Tyr Tyr Ala Asp Ser Val Lys
50 55 60

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

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

Ser Ala Phe Ala Ala Asp Val Phe Asp Ile Trp Gly Gln Gly Thr Met
100 105 110

Val Thr Val Ser Ser
115

<210> 83
<211> 24
<212> DNA
<213> Homo sapiens

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gggttcacg tcaccaccaa ctac

24

<210> 84
<211> 8
<212> PRT
<213> Homo sapiens

<400> 84

Gly Phe Ile Val Thr Thr Asn Tyr
1 5

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

<400> 85
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21

<210> 86
 <211> 7
 <212> PRT
 <213> Homo sapiens

<400> 86

Ile Tyr Ser Ser Gly His Thr
 1 5

<210> 87
 <211> 33
 <212> DNA
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<400> 87

gcgagtgctt tcgcagcgga tgtttttgat atc 33

<210> 88
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 <212> PRT
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<400> 88

Ala Ser Ala Phe Ala Ala Asp Val Phe Asp Ile
 1 5 10

<210> 89
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<400> 89

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 ccaggcgggg gcctggagtg ggtgacaagt atatggtttg atggaagtaa tagatattat 180
 gcagactcct tgaagggccg attcaccatc tccagagaca attccaagaa tactctgtat 240
 ctggaaatga acagcctgag agccgaggac acggctgtgt attactgtgt gagagagggg 300
 atactgggaa ctactaatcc ttatgatgtt tttgatgtct ggggtcaggg gacaatggtc 360
 accgtctctt ca 372

<210> 90

<211> 124
<212> PRT
<213> Homo sapiens

<400> 90

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

Ser Leu Arg Leu Ser Cys Ser Ala Ser Gly Phe Ser Phe Ser His Phe
20 25 30

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

Thr Ser Ile Trp Phe Asp Gly Ser Asn Arg Tyr Tyr Ala Asp Ser Leu
50 55 60

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

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

Val Arg Glu Gly Ile Leu Gly Thr Thr Asn Pro Tyr Asp Val Phe Asp
100 105 110

Val Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120

<210> 91
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<400> 91

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24

<210> 92
<211> 8
<212> PRT
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<400> 92

Gly Phe Ser Phe Ser His Phe Gly

1

5

<210> 93
<211> 24
<212> DNA
<213> Homo sapiens

<400> 93
atatggtttg atggaagtaa taga

24

<210> 94
<211> 8
<212> PRT
<213> Homo sapiens

<400> 94

Ile Trp Phe Asp Gly Ser Asn Arg
1 5

<210> 95
<211> 51
<212> DNA
<213> Homo sapiens

<400> 95
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51

<210> 96
<211> 17
<212> PRT
<213> Homo sapiens

<400> 96

Val Arg Glu Gly Ile Leu Gly Thr Thr Asn Pro Tyr Asp Val Phe Asp
1 5 10 15

Val

<210> 97
<211> 372
<212> DNA
<213> Homo sapiens

<400> 97
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60

tcctgtgcag cctctggatt cacctttaga agctatgtca tgagctggtt ccgccaggct	120
ccagggaagg ggctggagtg ggtctcagga atgagtggga gtggtggaag cacatcctac	180
gcagactccg tgaagggccg gttcaccatc tccagagaca attcaaagaa tacgctgtat	240
ctgctaataa acagcctgag aaccgaggac acggccgtat attattgtgc gaaagaaaac	300
ggggctaact ggaactacgg ctactacggt atggacgtct ggggccaagg gaccacggtc	360
accgtctcct ca	372

<210> 98
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 98

Glu	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Gly
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Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Arg	Ser	Tyr
			20					25					30		

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

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

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

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

Ala	Lys	Glu	Asn	Gly	Ala	Asn	Trp	Asn	Tyr	Gly	Tyr	Tyr	Gly	Met	Asp
			100					105					110		

Val	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser
		115					120				

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<213> Homo sapiens

<400> 99

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24

<210> 100

<211> 8

<212> PRT

<213> Homo sapiens

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Gly Phe Thr Phe Arg Ser Tyr Val

1 5

<210> 101

<211> 24

<212> DNA

<213> Homo sapiens

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24

<210> 102

<211> 8

<212> PRT

<213> Homo sapiens

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Met Ser Gly Ser Gly Gly Ser Thr

1 5

<210> 103

<211> 51

<212> DNA

<213> Homo sapiens

<400> 103

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51

<210> 104

<211> 17

<212> PRT

<213> Homo sapiens

<400> 104

Ala Lys Glu Asn Gly Ala Asn Trp Asn Tyr Gly Tyr Tyr Gly Met Asp

1 5 10 15

Val

<210> 105
<211> 360
<212> DNA
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<400> 105
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tcctgtgtag cgtctggatt ctccttcagt aactttggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcaatt atatggtatg atggaagtaa taaatactat 180
tcagactccg tgaagggccg cttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaatga acagcctgag agtcgacgac acggctgtgt attactgtgc gagattcgat 300
cgctggaaat ttgacgcttt tgatatctgg ggccaaggga caatggtcac cgtctcttca 360

<210> 106
<211> 120
<212> PRT
<213> Homo sapiens

<400> 106
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Ser Phe Ser Asn Phe
20 25 30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ser Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Val Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Phe Asp Arg Trp Lys Phe Asp Ala Phe Asp Ile Trp Gly Gln
 100 105 110

Gly Thr Met Val Thr Val Ser Ser
 115 120

<210> 107
 <211> 24
 <212> DNA
 <213> Homo sapiens

<400> 107
 ggattctcct tcagtaactt tggc

24

<210> 108
 <211> 8
 <212> PRT
 <213> Homo sapiens

<400> 108

Gly Phe Ser Phe Ser Asn Phe Gly
 1 5

<210> 109
 <211> 24
 <212> DNA
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<400> 109
 atatggtatg atggaagtaa taaa

24

<210> 110
 <211> 8
 <212> PRT
 <213> Homo sapiens

<400> 110

Ile Trp Tyr Asp Gly Ser Asn Lys
 1 5

<210> 111
 <211> 39
 <212> DNA
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<400> 111

gcgagattcg atcgctggaa atttgacgct tttgatatc

39

<210> 112
<211> 13
<212> PRT
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<400> 112

Ala Arg Phe Asp Arg Trp Lys Phe Asp Ala Phe Asp Ile
1 5 10

<210> 113
<211> 360
<212> DNA
<213> Homo sapiens

<400> 113
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tcctgtgcag cgtctggatt caccttcagt agctttgccca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatggtatg atggaagtaa tgattactat 180
gcagcctccg tgaagggccg tttcaccatc tccagagaca attccaagaa cacgctgtat 240
ctggaaatga acagactgag agccgaggac acggctgtgt atcactgtgc gagagataac 300
tggaattact ggggggggtat ggacgtctgg ggccaaggga ccacggtcac cgtctcctca 360

<210> 114
<211> 120
<212> PRT
<213> Homo sapiens

<400> 114

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

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

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

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

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

Leu Glu Met Asn Arg Leu Arg Ala Glu Asp Thr Ala Val Tyr His Cys
85 90 95

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

Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 115
<211> 24
<212> DNA
<213> Homo sapiens

<400> 115
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24

<210> 116
<211> 8
<212> PRT
<213> Homo sapiens

<400> 116

Gly Phe Thr Phe Ser Ser Phe Ala
1 5

<210> 117
<211> 24
<212> DNA
<213> Homo sapiens

<400> 117
atatggtatg atggaagtaa tgat

24

<210> 118
<211> 8
<212> PRT
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<400> 118

Ile Trp Tyr Asp Gly Ser Asn Asp
1 5

<210> 119
 <211> 39
 <212> DNA
 <213> Homo sapiens

<400> 119
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<210> 120
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 <212> PRT
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<400> 120

Ala Arg Asp Asn Trp Asn Tyr Trp Gly Gly Met Asp Val
 1 5 10

<210> 121
 <211> 375
 <212> DNA
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 tcctgtgcag cctctggatt cgccttttagt aattatgcc a tgaactgggt ccgccagact 120
 ccagggaagg ggctggagtg ggtctcagtt attagtagta gtggtggaaa cacatactac 180
 gcagactccg tgaagggccg gttcgccatc tccagagaca attccaggga tacgctgcat 240
 ctgcaaatga acagactgag agtcgaggac acggccgtct attactgtgc gaaagaaata 300
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 gtcaccgtct cctca 375

<210> 122
 <211> 125
 <212> PRT
 <213> Homo sapiens

<400> 122

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Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Asn Tyr

20

25

30

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

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

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

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

Ala Lys Glu Ile Arg Pro Tyr Tyr Asp Leu Ser Tyr Tyr Tyr Gly Met
 100 105 110

Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120 125

<210> 123
 <211> 24
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<400> 123
 ggattcgcct ttagtaatta tgcc

24

<210> 124
 <211> 8
 <212> PRT
 <213> Homo sapiens

<400> 124

Gly Phe Ala Phe Ser Asn Tyr Ala
 1 5

<210> 125
 <211> 24
 <212> DNA
 <213> Homo sapiens

<400> 125
 attagtagta gtggtggaaa caca

24

<210> 126
 <211> 8
 <212> PRT
 <213> Homo sapiens

<400> 126

Ile Ser Ser Ser Gly Gly Asn Thr
 1 5

<210> 127
 <211> 54
 <212> DNA
 <213> Homo sapiens

<400> 127
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<210> 128
 <211> 18
 <212> PRT
 <213> Homo sapiens

<400> 128

Ala Lys Glu Ile Arg Pro Tyr Tyr Asp Leu Ser Tyr Tyr Tyr Gly Met
 1 5 10 15

Asp Val

<210> 129
 <211> 348
 <212> DNA
 <213> Homo sapiens

<400> 129
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 acctgcactg tctctggtgg ctccatcaga aatttctact ggagctggct ccggcagccc 120
 ccagggaagg gactagagtg gattgggcac atcaattaca atgggggcac cgactacaac 180
 ccctccctca agagtcgagt caccatatca gtagacacgt ccaagaatca gttctccctg 240
 aatttgaact ctgtgaccgc cgcagacacg gccgtgtatt actgtgagac acagagattc 300
 tacggtatgg acgtctgggg tccagggacc acggtcaccg tctcctca 348

<210> 130
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 130

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Arg Asn Phe
 20 25 30

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

Gly His Ile Asn Tyr Asn Gly Gly Thr Asp Tyr Asn Pro Ser Leu Lys
 50 55 60

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

Asn Leu Asn Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Gln Arg Phe Tyr Gly Met Asp Val Trp Gly Pro Gly Thr Thr Val
 100 105 110

Thr Val Ser Ser
 115

<210> 131
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 <212> DNA
 <213> Homo sapiens

<400> 131
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24

<210> 132
 <211> 8
 <212> PRT
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<400> 132

Gly Gly Ser Ile Arg Asn Phe Tyr
1 5

<210> 133
<211> 21
<212> DNA
<213> Homo sapiens

<400> 133
atcaattaca atgggggcac c 21

<210> 134
<211> 7
<212> PRT
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<400> 134

Ile Asn Tyr Asn Gly Gly Thr
1 5

<210> 135
<211> 30
<212> DNA
<213> Homo sapiens

<400> 135
gcgagacaga gattctacgg tatggacgtc 30

<210> 136
<211> 10
<212> PRT
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<400> 136

Ala Arg Gln Arg Phe Tyr Gly Met Asp Val
1 5 10

<210> 137
<211> 324
<212> DNA
<213> Homo sapiens

<400> 137
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atcacttgcc gggcaagtca gagcattagc agctatttaa attggtatca gcagaaacca 120

gggaaagccc ctaagctcct gatctatgct gcatccagtt tgcaaagtgg ggtcccgtca 180

aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 240
gaagattttg caacttacta ctgtcaacag agttacagta cccctccgat caccttcggc 300
caagggacac gactggagat taaa 324

<210> 138
<211> 108
<212> PRT
<213> Homo sapiens

<400> 138

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

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr
20 25 30

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

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

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

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

<210> 139
<211> 18
<212> DNA
<213> Homo sapiens

<400> 139

cagagcatta gcagctat 18

<210> 140
<211> 6
<212> PRT

<213> Homo sapiens

<400> 140

Gln Ser Ile Ser Ser Tyr
1 5

<210> 141

<211> 9

<212> DNA

<213> Homo sapiens

<400> 141

gctgcatcc

9

<210> 142

<211> 3

<212> PRT

<213> Homo sapiens

<400> 142

Ala Ala Ser
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<210> 143

<211> 30

<212> DNA

<213> Homo sapiens

<400> 143

caacagagtt acagtacccc tccgatcacc

30

<210> 144

<211> 10

<212> PRT

<213> Homo sapiens

<400> 144

Gln Gln Ser Tyr Ser Thr Pro Pro Ile Thr
1 5 10

<210> 145

<211> 1408

<212> PRT

<213> Homo sapiens

<400> 145

Met Lys Ala Pro Ala Val Leu Ala Pro Gly Ile Leu Val Leu Leu Phe
 1 5 10 15
 Thr Leu Val Gln Arg Ser Asn Gly Glu Cys Lys Glu Ala Leu Ala Lys
 20 25 30
 Ser Glu Met Asn Val Asn Met Lys Tyr Gln Leu Pro Asn Phe Thr Ala
 35 40 45
 Glu Thr Pro Ile Gln Asn Val Ile Leu His Glu His His Ile Phe Leu
 50 55 60
 Gly Ala Thr Asn Tyr Ile Tyr Val Leu Asn Glu Glu Asp Leu Gln Lys
 65 70 75 80
 Val Ala Glu Tyr Lys Thr Gly Pro Val Leu Glu His Pro Asp Cys Phe
 85 90 95
 Pro Cys Gln Asp Cys Ser Ser Lys Ala Asn Leu Ser Gly Gly Val Trp
 100 105 110
 Lys Asp Asn Ile Asn Met Ala Leu Val Val Asp Thr Tyr Tyr Asp Asp
 115 120 125
 Gln Leu Ile Ser Cys Gly Ser Val Asn Arg Gly Thr Cys Gln Arg His
 130 135 140
 Val Phe Pro His Asn His Thr Ala Asp Ile Gln Ser Glu Val His Cys
 145 150 155 160
 Ile Phe Ser Pro Gln Ile Glu Glu Pro Ser Gln Cys Pro Asp Cys Val
 165 170 175
 Val Ser Ala Leu Gly Ala Lys Val Leu Ser Ser Val Lys Asp Arg Phe
 180 185 190
 Ile Asn Phe Phe Val Gly Asn Thr Ile Asn Ser Ser Tyr Phe Pro Asp
 195 200 205
 His Pro Leu His Ser Ile Ser Val Arg Arg Leu Lys Glu Thr Lys Asp
 210 215 220

Gly Phe Met Phe Leu Thr Asp Gln Ser Tyr Ile Asp Val Leu Pro Glu
 225 230 235 240

Phe Arg Asp Ser Tyr Pro Ile Lys Tyr Val His Ala Phe Glu Ser Asn
 245 250 255

Asn Phe Ile Tyr Phe Leu Thr Val Gln Arg Glu Thr Leu Asp Ala Gln
 260 265 270

Thr Phe His Thr Arg Ile Ile Arg Phe Cys Ser Ile Asn Ser Gly Leu
 275 280 285

His Ser Tyr Met Glu Met Pro Leu Glu Cys Ile Leu Thr Glu Lys Arg
 290 295 300

Lys Lys Arg Ser Thr Lys Lys Glu Val Phe Asn Ile Leu Gln Ala Ala
 305 310 315 320

Tyr Val Ser Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser
 325 330 335

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

Ser Ala Glu Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys
 355 360 365

Tyr Val Asn Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg
 370 375 380

Cys Leu Gln His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg
 385 390 395 400

Thr Leu Leu Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr
 405 410 415

Arg Thr Glu Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly
 420 425 430

Gln Phe Ser Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly
 435 440 445

Asp Leu Thr Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln
450 455 460

Val Val Val Ser Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu
465 470 475 480

Leu Asp Ser His Pro Val Ser Pro Glu Val Ile Val Glu His Thr Leu
485 490 495

Asn Gln Asn Gly Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys
500 505 510

Ile Pro Leu Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln
515 520 525

Cys Leu Ser Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys
530 535 540

Cys Val Arg Ser Glu Glu Cys Leu Ser Gly Thr Trp Thr Gln Gln Ile
545 550 555 560

Cys Leu Pro Ala Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu
565 570 575

Gly Gly Thr Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg
580 585 590

Asn Asn Lys Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu
595 600 605

Ser Cys Thr Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys
610 615 620

Thr Val Gly Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile
625 630 635 640

Ser Asn Gly His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp
645 650 655

Pro Val Ile Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly
Page 43

660	665	670
Thr Leu Leu Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg		
675	680	685
His Ile Ser Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn		
690	695	700
Ser Ile Leu Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe		
705	710	715
Ala Val Lys Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe		
725	730	735
Ser Tyr Arg Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser		
740	745	750
Phe Ile Ser Thr Trp Trp Lys Glu Pro Leu Asn Ile Val Ser Phe Leu		
755	760	765
Phe Cys Phe Ala Ser Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn		
770	775	780
Leu Asn Ser Val Ser Val Pro Arg Met Val Ile Asn Val His Glu Ala		
785	790	795
Gly Arg Asn Phe Thr Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile		
805	810	815
Ile Cys Cys Thr Thr Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro		
820	825	830
Leu Lys Thr Lys Ala Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr		
835	840	845
Phe Asp Leu Ile Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys		
850	855	860
Pro Val Met Ile Ser Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly		
865	870	875
		880

Asn Asp Ile Asp Pro Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly
885 890 895

Asn Lys Ser Cys Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys
900 905 910

Thr Val Pro Asn Asp Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu
915 920 925

Trp Lys Gln Ala Ile Ser Ser Thr Val Leu Gly Lys Val Ile Val Gln
930 935 940

Pro Asp Gln Asn Phe Thr Gly Leu Ile Ala Gly Val Val Ser Ile Ser
945 950 955 960

Thr Ala Leu Leu Leu Leu Leu Gly Phe Phe Leu Trp Leu Lys Lys Arg
965 970 975

Lys Gln Ile Lys Asp Leu Gly Ser Glu Leu Val Arg Tyr Asp Ala Arg
980 985 990

Val His Thr Pro His Leu Asp Arg Leu Val Ser Ala Arg Ser Val Ser
995 1000 1005

Pro Thr Thr Glu Met Val Ser Asn Glu Ser Val Asp Tyr Arg Ala
1010 1015 1020

Thr Phe Pro Glu Asp Gln Phe Pro Asn Ser Ser Gln Asn Gly Ser
1025 1030 1035

Cys Arg Gln Val Gln Tyr Pro Leu Thr Asp Met Ser Pro Ile Leu
1040 1045 1050

Thr Ser Gly Asp Ser Asp Ile Ser Ser Pro Leu Leu Gln Asn Thr
1055 1060 1065

Val His Ile Asp Leu Ser Ala Leu Asn Pro Glu Leu Val Gln Ala
1070 1075 1080

Val Gln His Val Val Ile Gly Pro Ser Ser Leu Ile Val His Phe
1085 1090 1095

Asn	Glu	Val	Ile	Gly	Arg	Gly	His	Phe	Gly	Cys	Val	Tyr	His	Gly
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Thr	Leu	Leu	Asp	Asn	Asp	Gly	Lys	Lys	Ile	His	Cys	Ala	Val	Lys
1115						1120					1125			
Ser	Leu	Asn	Arg	Ile	Thr	Asp	Ile	Gly	Glu	Val	Ser	Gln	Phe	Leu
1130						1135					1140			
Thr	Glu	Gly	Ile	Ile	Met	Lys	Asp	Phe	Ser	His	Pro	Asn	Val	Leu
1145						1150					1155			
Ser	Leu	Leu	Gly	Ile	Cys	Leu	Arg	Ser	Glu	Gly	Ser	Pro	Leu	Val
1160						1165					1170			
Val	Leu	Pro	Tyr	Met	Lys	His	Gly	Asp	Leu	Arg	Asn	Phe	Ile	Arg
1175						1180					1185			
Asn	Glu	Thr	His	Asn	Pro	Thr	Val	Lys	Asp	Leu	Ile	Gly	Phe	Gly
1190						1195					1200			
Leu	Gln	Val	Ala	Lys	Gly	Met	Lys	Tyr	Leu	Ala	Ser	Lys	Lys	Phe
1205						1210					1215			
Val	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Cys	Met	Leu	Asp	Glu	Lys
1220						1225					1230			
Phe	Thr	Val	Lys	Val	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Met	Tyr
1235						1240					1245			
Asp	Lys	Glu	Tyr	Tyr	Ser	Val	His	Asn	Lys	Thr	Gly	Ala	Lys	Leu
1250						1255					1260			
Pro	Val	Lys	Trp	Met	Ala	Leu	Glu	Ser	Leu	Gln	Thr	Gln	Lys	Phe
1265						1270					1275			
Thr	Thr	Lys	Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu
1280						1285					1290			
Leu	Met	Thr	Arg	Gly	Ala	Pro	Pro	Tyr	Pro	Asp	Val	Asn	Thr	Phe
1295						1300					1305			

Asp Ile Thr Val Tyr Leu Leu Gln Gly Arg Arg Leu Leu Gln Pro
1310 1315 1320

Glu Tyr Cys Pro Asp Pro Leu Tyr Glu Val Met Leu Lys Cys Trp
1325 1330 1335

His Pro Lys Ala Glu Met Arg Pro Ser Phe Ser Glu Leu Val Ser
1340 1345 1350

Arg Ile Ser Ala Ile Phe Ser Thr Phe Ile Gly Glu His Tyr Val
1355 1360 1365

His Val Asn Ala Thr Tyr Val Asn Val Lys Cys Val Ala Pro Tyr
1370 1375 1380

Pro Ser Leu Leu Ser Ser Glu Asp Asn Ala Asp Asp Glu Val Asp
1385 1390 1395

Thr Arg Pro Ala Ser Phe Trp Glu Thr Ser
1400 1405

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<400> 146

Met Lys Ala Pro Ala Val Leu Ala Pro Gly Ile Leu Val Leu Leu Phe
1 5 10 15

Thr Leu Val Gln Arg Ser Asn Gly Glu Cys Lys Glu Ala Leu Ala Lys
20 25 30

Ser Glu Met Asn Val Asn Met Lys Tyr Gln Leu Pro Asn Phe Thr Ala
35 40 45

Glu Thr Pro Ile Gln Asn Val Ile Leu His Glu His His Ile Phe Leu
50 55 60

Gly Ala Thr Asn Tyr Ile Tyr Val Leu Asn Glu Glu Asp Leu Gln Lys
65 70 75 80

Val Ala Glu Tyr Lys Thr Gly Pro Val Leu Glu His Pro Asp Cys Phe
85 90 95

Pro Cys Gln Asp Cys Ser Ser Lys Ala Asn Leu Ser Gly Gly Val Trp
100 105 110

Lys Asp Asn Ile Asn Met Ala Leu Val Val Asp Thr Tyr Tyr Asp Asp
115 120 125

Gln Leu Ile Ser Cys Gly Ser Val Asn Arg Gly Thr Cys Gln Arg His
130 135 140

Val Phe Pro His Asn His Thr Ala Asp Ile Gln Ser Glu Val His Cys
145 150 155 160

Ile Phe Ser Pro Gln Ile Glu Glu Pro Ser Gln Cys Pro Asp Cys Val
165 170 175

Val Ser Ala Leu Gly Ala Lys Val Leu Ser Ser Val Lys Asp Arg Phe
180 185 190

Ile Asn Phe Phe Val Gly Asn Thr Ile Asn Ser Ser Tyr Phe Pro Asp
195 200 205

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

Gly Phe Met Phe Leu Thr Asp Gln Ser Tyr Ile Asp Val Leu Pro Glu
225 230 235 240

Phe Arg Asp Ser Tyr Pro Ile Lys Tyr Val His Ala Phe Glu Ser Asn
245 250 255

Asn Phe Ile Tyr Phe Leu Thr Val Gln Arg Glu Thr Leu Asp Ala Gln
260 265 270

Thr Phe His Thr Arg Ile Ile Arg Phe Cys Ser Ile Asn Ser Gly Leu
275 280 285

His Ser Tyr Met Glu Met Pro Leu Glu Cys Ile Leu Thr Glu Lys Arg
Page 48

290

295

300

Lys Lys Arg Ser Thr Lys Lys Glu Val Phe Asn Ile Leu Gln Ala Ala
 305 310 315 320

Tyr Val Ser Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser
 325 330 335

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

Ser Ala Glu Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys
 355 360 365

Tyr Val Asn Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg
 370 375 380

Cys Leu Gln His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg
 385 390 395 400

Thr Leu Leu Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr
 405 410 415

Arg Thr Glu Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly
 420 425 430

Gln Phe Ser Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly
 435 440 445

Asp Leu Thr Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln
 450 455 460

Val Val Val Ser Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu
 465 470 475 480

Leu Asp Ser His Pro Val Ser Pro Glu Val Ile Val Glu His Thr Leu
 485 490 495

Asn Gln Asn Gly Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys
 500 505 510

Ile Pro Leu Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln
515 520 525

Cys Leu Ser Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys
530 535 540

Cys Val Arg Ser Glu Glu Cys Leu Ser Gly Thr Trp Thr Gln Gln Ile
545 550 555 560

Cys Leu Pro Ala Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu
565 570 575

Gly Gly Thr Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg
580 585 590

Asn Asn Lys Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu
595 600 605

Ser Cys Thr Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys
610 615 620

Thr Val Gly Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile
625 630 635 640

Ser Asn Gly His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp
645 650 655

Pro Val Ile Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly
660 665 670

Thr Leu Leu Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg
675 680 685

His Ile Ser Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn
690 695 700

Ser Ile Leu Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe
705 710 715 720

Ala Val Lys Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe
725 730 735

Ser Tyr Arg Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser
740 745 750

Phe Ile Ser Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn Leu Asn
755 760 765

Ser Val Ser Val Pro Arg Met Val Ile Asn Val His Glu Ala Gly Arg
770 775 780

Asn Phe Thr Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile Ile Cys
785 790 795 800

Cys Thr Thr Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro Leu Lys
805 810 815

Thr Lys Ala Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr Phe Asp
820 825 830

Leu Ile Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys Pro Val
835 840 845

Met Ile Ser Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly Asn Asp
850 855 860

Ile Asp Pro Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly Asn Lys
865 870 875 880

Ser Cys Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys Thr Val
885 890 895

Pro Asn Asp Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu Trp Lys
900 905 910

Gln Ala Ile Ser Ser Thr Val Leu Gly Lys Val Ile Val Gln Pro Asp
915 920 925

Gln Asn Phe Thr Gly Leu Ile Ala Gly Val Val Ser Ile Ser Thr Ala
930 935 940

Leu Leu Leu Leu Leu Gly Phe Phe Leu Trp Leu Lys Lys Arg Lys Gln
945 950 955 960

Ile Lys Asp Leu Gly Ser Glu Leu Val Arg Tyr Asp Ala Arg Val His
965 970 975

Thr Pro His Leu Asp Arg Leu Val Ser Ala Arg Ser Val Ser Pro Thr
980 985 990

Thr Glu Met Val Ser Asn Glu Ser Val Asp Tyr Arg Ala Thr Phe Pro
995 1000 1005

Glu Asp Gln Phe Pro Asn Ser Ser Gln Asn Gly Ser Cys Arg Gln
1010 1015 1020

Val Gln Tyr Pro Leu Thr Asp Met Ser Pro Ile Leu Thr Ser Gly
1025 1030 1035

Asp Ser Asp Ile Ser Ser Pro Leu Leu Gln Asn Thr Val His Ile
1040 1045 1050

Asp Leu Ser Ala Leu Asn Pro Glu Leu Val Gln Ala Val Gln His
1055 1060 1065

Val Val Ile Gly Pro Ser Ser Leu Ile Val His Phe Asn Glu Val
1070 1075 1080

Ile Gly Arg Gly His Phe Gly Cys Val Tyr His Gly Thr Leu Leu
1085 1090 1095

Asp Asn Asp Gly Lys Lys Ile His Cys Ala Val Lys Ser Leu Asn
1100 1105 1110

Arg Ile Thr Asp Ile Gly Glu Val Ser Gln Phe Leu Thr Glu Gly
1115 1120 1125

Ile Ile Met Lys Asp Phe Ser His Pro Asn Val Leu Ser Leu Leu
1130 1135 1140

Gly Ile Cys Leu Arg Ser Glu Gly Ser Pro Leu Val Val Leu Pro
1145 1150 1155

Tyr Met Lys His Gly Asp Leu Arg Asn Phe Ile Arg Asn Glu Thr

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His	Asn	Pro	Thr	Val	Lys	Asp	Leu	Ile	Gly	Phe	Gly	Leu	Gln	Val	
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Ala	Lys	Gly	Met	Lys	Tyr	Leu	Ala	Ser	Lys	Lys	Phe	Val	His	Arg	
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Asp	Leu	Ala	Ala	Arg	Asn	Cys	Met	Leu	Asp	Glu	Lys	Phe	Thr	Val	
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Lys	Val	Ala	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Met	Tyr	Asp	Lys	Glu	
	1220					1225					1230				
Tyr	Tyr	Ser	Val	His	Asn	Lys	Thr	Gly	Ala	Lys	Leu	Pro	Val	Lys	
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Trp	Met	Ala	Leu	Glu	Ser	Leu	Gln	Thr	Gln	Lys	Phe	Thr	Thr	Lys	
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Ser	Asp	Val	Trp	Ser	Phe	Gly	Val	Leu	Leu	Trp	Glu	Leu	Met	Thr	
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Arg	Gly	Ala	Pro	Pro	Tyr	Pro	Asp	Val	Asn	Thr	Phe	Asp	Ile	Thr	
	1280					1285					1290				
Val	Tyr	Leu	Leu	Gln	Gly	Arg	Arg	Leu	Leu	Gln	Pro	Glu	Tyr	Cys	
	1295					1300					1305				
Pro	Asp	Pro	Leu	Tyr	Glu	Val	Met	Leu	Lys	Cys	Trp	His	Pro	Lys	
	1310					1315					1320				
Ala	Glu	Met	Arg	Pro	Ser	Phe	Ser	Glu	Leu	Val	Ser	Arg	Ile	Ser	
	1325					1330					1335				
Ala	Ile	Phe	Ser	Thr	Phe	Ile	Gly	Glu	His	Tyr	Val	His	Val	Asn	
	1340					1345					1350				
Ala	Thr	Tyr	Val	Asn	Val	Lys	Cys	Val	Ala	Pro	Tyr	Pro	Ser	Leu	
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Leu Ser Ser Glu Asp Asn Ala Asp Asp Glu Val Asp Thr Arg Pro
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Ala Ser Phe Trp Glu Thr Ser
 1385 1390

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<400> 147

Met Lys Ala Pro Ala Val Leu Ala Pro Gly Ile Leu Val Leu Leu Phe
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Thr Leu Val Gln Arg Ser Asn Gly Glu Cys Lys Glu Ala Leu Ala Lys
 20 25 30

Ser Glu Met Asn Val Asn Met Lys Tyr Gln Leu Pro Asn Phe Thr Ala
 35 40 45

Glu Thr Pro Ile Gln Asn Val Ile Leu His Glu His His Ile Phe Leu
 50 55 60

Gly Ala Thr Asn Tyr Ile Tyr Val Leu Asn Glu Glu Asp Leu Gln Lys
 65 70 75 80

Val Ala Glu Tyr Lys Thr Gly Pro Val Leu Glu His Pro Asp Cys Phe
 85 90 95

Pro Cys Gln Asp Cys Ser Ser Lys Ala Asn Leu Ser Gly Gly Val Trp
 100 105 110

Lys Asp Asn Ile Asn Met Ala Leu Val Val Asp Thr Tyr Tyr Asp Asp
 115 120 125

Gln Leu Ile Ser Cys Gly Ser Val Asn Arg Gly Thr Cys Gln Arg His
 130 135 140

Val Phe Pro His Asn His Thr Ala Asp Ile Gln Ser Glu Val His Cys
 145 150 155 160

Ile Phe Ser Pro Gln Ile Glu Glu Pro Ser Gln Cys Pro Asp Cys Val
165 170 175

Val Ser Ala Leu Gly Ala Lys Val Leu Ser Ser Val Lys Asp Arg Phe
180 185 190

Ile Asn Phe Phe Val Gly Asn Thr Ile Asn Ser Ser Tyr Phe Pro Asp
195 200 205

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

Gly Phe Met Phe Leu Thr Asp Gln Ser Tyr Ile Asp Val Leu Pro Glu
225 230 235 240

Phe Arg Asp Ser Tyr Pro Ile Lys Tyr Val His Ala Phe Glu Ser Asn
245 250 255

Asn Phe Ile Tyr Phe Leu Thr Val Gln Arg Glu Thr Leu Asp Ala Gln
260 265 270

Thr Phe His Thr Arg Ile Ile Arg Phe Cys Ser Ile Asn Ser Gly Leu
275 280 285

His Ser Tyr Met Glu Met Pro Leu Glu Cys Ile Leu Thr Glu Lys Arg
290 295 300

Lys Lys Arg Ser Thr Lys Lys Glu Val Phe Asn Ile Leu Gln Ala Ala
305 310 315 320

Tyr Val Ser Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser
325 330 335

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

Ser Ala Glu Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys
355 360 365

Tyr Val Asn Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg
370 375 380

Cys Leu Gln His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg
 385 390 395 400

Thr Leu Leu Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr
 405 410 415

Arg Thr Glu Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly
 420 425 430

Gln Phe Ser Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly
 435 440 445

Asp Leu Thr Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln
 450 455 460

Val Val Val Ser Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu
 465 470 475 480

Leu Asp Ser His Pro Val Ser Pro Glu Val Ile Val Glu His Thr Leu
 485 490 495

Asn Gln Asn Gly Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys
 500 505 510

Ile Pro Leu Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln
 515 520 525

Cys Leu Ser Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys
 530 535 540

Cys Val Arg Ser Glu Glu Cys Leu Ser Gly Thr Trp Thr Gln Gln Ile
 545 550 555 560

Cys Leu Pro Ala Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu
 565 570 575

Gly Gly Thr Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg
 580 585 590

Asn Asn Lys Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu
 595 600 605

Ser Cys Thr Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys
610 615 620

Thr Val Gly Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile
625 630 635 640

Ser Asn Gly His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp
645 650 655

Pro Val Ile Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly
660 665 670

Thr Leu Leu Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg
675 680 685

His Ile Ser Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn
690 695 700

Ser Ile Leu Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe
705 710 715 720

Ala Val Lys Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe
725 730 735

Ser Tyr Arg Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser
740 745 750

Phe Ile Ser Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn Leu Asn
755 760 765

Ser Val Ser Val Pro Arg Met Val Ile Asn Val His Glu Ala Gly Arg
770 775 780

Asn Phe Thr Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile Ile Cys
785 790 795 800

Cys Thr Thr Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro Leu Lys
805 810 815

Thr Lys Ala Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr Phe Asp
Page 57

820

825

830

Leu Ile Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys Pro Val
 835 840 845

Met Ile Ser Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly Asn Asp
 850 855 860

Ile Asp Pro Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly Asn Lys
 865 870 875 880

Ser Cys Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys Thr Val
 885 890 895

Pro Asn Asp Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu Val Gly
 900 905 910

Phe Leu His Ser Ser His Asp Val Asn Lys Glu Ala Ser Val Ile Met
 915 920 925

Leu Phe Ser Gly Leu Lys
 930

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 <213> Homo sapiens

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Lys Glu Ala Leu Ala Lys Ser Glu Met Asn Val Asn Met Lys Tyr Gln
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Leu Pro Asn Phe Thr Ala Glu Thr Pro Ile Gln Asn Val Ile Leu His
 20 25 30

Glu His His Ile Phe Leu Gly Ala Thr Asn Tyr Ile Tyr Val Leu Asn
 35 40 45

Glu Glu Asp Leu Gln Lys Val Ala Glu Tyr Lys Thr Gly Pro Val Leu
 50 55 60

Glu His Pro Asp Cys Phe Pro Cys Gln Asp Cys Ser Ser Lys Ala Asn
 Page 58

65					70						75				80
Leu	Ser	Gly	Gly	Val	Trp	Lys	Asp	Asn	Ile	Asn	Met	Ala	Leu	Val	Val
				85					90					95	
Asp	Thr	Tyr	Tyr	Asp	Asp	Gln	Leu	Ile	Ser	Cys	Gly	Ser	Val	Asn	Arg
			100					105					110		
Gly	Thr	Cys	Gln	Arg	His	Val	Phe	Pro	His	Asn	His	Thr	Ala	Asp	Ile
		115					120					125			
Gln	Ser	Glu	Val	His	Cys	Ile	Phe	Ser	Pro	Gln	Ile	Glu	Glu	Pro	Ser
	130					135					140				
Gln	Cys	Pro	Asp	Cys	Val	Val	Ser	Ala	Leu	Gly	Ala	Lys	Val	Leu	Ser
145					150					155					160
Ser	Val	Lys	Asp	Arg	Phe	Ile	Asn	Phe	Phe	Val	Gly	Asn	Thr	Ile	Asn
				165					170					175	
Ser	Ser	Tyr	Phe	Pro	Asp	His	Pro	Leu	His	Ser	Ile	Ser	Val	Arg	Arg
			180					185					190		
Leu	Lys	Glu	Thr	Lys	Asp	Gly	Phe	Met	Phe	Leu	Thr	Asp	Gln	Ser	Tyr
		195					200					205			
Ile	Asp	Val	Leu	Pro	Glu	Phe	Arg	Asp	Ser	Tyr	Pro	Ile	Lys	Tyr	Val
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His	Ala	Phe	Glu	Ser	Asn	Asn	Phe	Ile	Tyr	Phe	Leu	Thr	Val	Gln	Arg
225					230				235					240	
Glu	Thr	Leu	Asp	Ala	Gln	Thr	Phe	His	Thr	Arg	Ile	Ile	Arg	Phe	Cys
				245					250					255	
Ser	Ile	Asn	Ser	Gly	Leu	His	Ser	Tyr	Met	Glu	Met	Pro	Leu	Glu	Cys
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Ile	Leu	Thr	Glu	Lys	Arg	Lys	Lys	Arg							
		275					280								

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<400> 149

Ser Thr Lys Lys Glu Val Phe Asn Ile Leu Gln Ala Ala Tyr Val Ser
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Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser Leu Asn Asp
 20 25 30

Asp Ile Leu Phe Gly Val Phe Ala Gln Ser Lys Pro Asp Ser Ala Glu
 35 40 45

Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys Tyr Val Asn
 50 55 60

Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg Cys Leu Gln
 65 70 75 80

His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg Thr Leu Leu
 85 90 95

Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr Arg Thr Glu
 100 105 110

Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly Gln Phe Ser
 115 120 125

Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly Asp Leu Thr
 130 135 140

Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln Val Val Val
 145 150 155 160

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

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

Gly Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu
195 200 205

Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln Cys Leu Ser
210 215 220

Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys Cys Val Arg
225 230 235 240

Ser Glu Glu Cys Leu Ser Gly Thr Trp Thr Gln Gln Ile Cys Leu Pro
245 250 255

Ala Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu Gly Gly Thr
260 265 270

Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg Asn Asn Lys
275 280 285

Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu Ser Cys Thr
290 295 300

Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys Thr Val Gly
305 310 315 320

Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile Ser Asn Gly
325 330 335

His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp Pro Val Ile
340 345 350

Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly Thr Leu Leu
355 360 365

Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg His Ile Ser
370 375 380

Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn Ser Ile Leu
385 390 395 400

Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe Ala Val Lys
405 410 415

Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe Ser Tyr Arg
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Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser Phe Ile Ser
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Thr Trp Trp Lys Glu Pro Leu Asn Ile Val Ser Phe Leu Phe Cys Phe
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Ala Ser Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn Leu Asn Ser
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Val Ser Val Pro Arg Met Val Ile Asn Val His Glu Ala Gly Arg Asn
485 490 495

Phe Thr Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile Ile Cys Cys
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Thr Thr Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro Leu Lys Thr
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Lys Ala Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr Phe Asp Leu
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Ile Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys Pro Val Met
545 550 555 560

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

Asp Pro Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly Asn Lys Ser
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Cys Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys Thr Val Pro
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Asn Asp Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu Trp Lys Gln
610 615 620

Ala Ile Ser Ser Thr Val Leu Gly Lys Val Ile Val Gln Pro Asp Gln
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Asn Phe Thr Gly Leu Ile Ala Gly Val Val Ser Ile Ser Thr Ala Leu
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Leu Leu Leu Leu Gly Phe Phe Leu Trp Leu Lys Lys Arg Lys Gln Ile
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Lys Asp Leu Gly Ser Glu Leu Val Arg Tyr Asp Ala Arg Val His Thr
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Pro His Leu Asp Arg Leu Val Ser Ala Arg Ser Val Ser Pro Thr Thr
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Glu Met Val Ser Asn Glu Ser Val Asp Tyr Arg Ala Thr Phe Pro Glu
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Asp Gln Phe Pro Asn Ser Ser Gln Asn Gly Ser Cys Arg Gln Val Gln
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Tyr Pro Leu Thr Asp Met Ser Pro Ile Leu Thr Ser Gly Asp Ser Asp
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Ile Ser Ser Pro Leu Leu Gln Asn Thr Val His Ile Asp Leu Ser Ala
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Leu Asn Pro Glu Leu Val Gln Ala Val Gln His Val Val Ile Gly Pro
770 775 780

Ser Ser Leu Ile Val His Phe Asn Glu Val Ile Gly Arg Gly His Phe
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Gly Cys Val Tyr His Gly Thr Leu Leu Asp Asn Asp Gly Lys Lys Ile
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His Cys Ala Val Lys Ser Leu Asn Arg Ile Thr Asp Ile Gly Glu Val
820 825 830

Ser Gln Phe Leu Thr Glu Gly Ile Ile Met Lys Asp Phe Ser His Pro
835 840 845

Asn Val Leu Ser Leu Leu Gly Ile Cys Leu Arg Ser Glu Gly Ser Pro
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Arg Asn Glu Thr His Asn Pro Thr Val Lys Asp Leu Ile Gly Phe Gly				
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Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg Thr Leu Leu Arg
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Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr Arg Thr Glu Phe
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Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly Gln Phe Ser Glu
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Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly Asp Leu Thr Ile
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Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu Leu Asp Ser His
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Pro Val Ser Pro Glu Val Ile Val Glu His Thr Leu Asn Gln Asn Gly
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Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu Asn
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Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln Cys Leu Ser Ala
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Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys Cys Val Arg Ser
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Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu Gly Gly Thr Arg
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Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg Asn Asn Lys Phe
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Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu Ser Cys Thr Leu
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Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile Ser Asn Gly His
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Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp Pro Val Ile Thr
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Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly Thr Leu Leu Thr
 355 360 365

Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg His Ile Ser Ile
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Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn Ser Ile Leu Glu
385 390 395 400

Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe Ala Val Lys Leu
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Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe Ser Tyr Arg Glu
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Ala Val Lys Gly Glu Val Leu Lys Val Gly Asn Lys Ser Cys Glu Asn
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Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu Trp Lys Gln Ala Ile Ser
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Tyr His Gly Thr Leu Leu Asp Asn Asp Gly Lys Lys Ile His Cys Ala
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Val Lys Ser Leu Asn Arg Ile Thr Asp Ile Gly Glu Val Ser Gln Phe
Page 68

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Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu Leu Asp Ser His
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Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu Asn
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Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg Thr Leu Leu Arg
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Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly Asp Leu Thr Ile
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Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln Val Val Val Ser
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Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu Leu Asp Ser His
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Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe Ala Val Lys Leu
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Val Leu Leu Thr Ser Ile Ser Thr Phe Ile Lys Gly Asp Leu Thr Ile
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Arg Ser Gly Pro Ser Thr Pro His Val Asn Phe Leu Leu Asp Ser His
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Tyr Thr Leu Val Ile Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu Asn
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Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln Cys Leu Ser Ala
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Ile Tyr Lys Val Phe Pro Asn Ser Ala Pro Leu Glu Gly Gly Thr Arg
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Trp 450	Trp	Lys	Glu	Pro	Leu	Asn 455	Ile	Val	Ser	Phe	Leu	Phe	Cys	Phe	Ala 460
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Ser	Val	Pro	Arg	Met 485	Val	Ile	Asn	Val	His 490	Glu	Ala	Gly	Arg	Asn	Phe 495
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Tyr Val His Asn Pro Val Phe Lys Pro Phe Glu Lys Pro Val Met Ile
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Ser Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly Asn Asp Ile Asp
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Glu Asn Ile His Leu His Ser Glu Ala Val Leu Cys Thr Val Pro Asn
595 600 605

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

Lys Pro Gly Ala Gln Leu Ala Arg Gln Ile Gly Ala Ser Leu Asn Asp
20 25 30

Asp Ile Leu Phe Gly Val Phe Ala Gln Ser Lys Pro Asp Ser Ala Glu
35 40 45

Pro Met Asp Arg Ser Ala Met Cys Ala Phe Pro Ile Lys Tyr Val Asn
50 55 60

Asp Phe Phe Asn Lys Ile Val Asn Lys Asn Asn Val Arg Cys Leu Gln
65 70 75 80

His Phe Tyr Gly Pro Asn His Glu His Cys Phe Asn Arg Thr Leu Leu
85 90 95

Arg Asn Ser Ser Gly Cys Glu Ala Arg Arg Asp Glu Tyr Arg Ala Glu
100 105 110

Phe Thr Thr Ala Leu Gln Arg Val Asp Leu Phe Met Gly Gln Phe Ser
115 120 125

Glu Val Leu Leu Thr Ser Ile Ser Thr Phe Val Lys Gly Asp Leu Thr
130 135 140

Ile Ala Asn Leu Gly Thr Ser Glu Gly Arg Phe Met Gln Val Val Val
145 150 155 160

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

His Pro Val Ser Pro Glu Val Ile Val Glu His Pro Leu Asn Gln Asn
180 185 190

Gly Tyr Thr Leu Val Val Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu
195 200 205

Asn Gly Leu Gly Cys Arg His Phe Gln Ser Cys Ser Gln Cys Leu Ser
210 215 220

Ala Pro Pro Phe Val Gln Cys Gly Trp Cys His Asp Lys Cys Val Arg
225 230 235 240

Ser Glu Glu Cys Pro Ser Gly Thr Trp Thr Gln Gln Ile Cys Leu Pro
245 250 255

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

Arg Leu Thr Ile Cys Gly Trp Asp Phe Gly Phe Arg Arg Asn Asn Lys
275 280 285

Phe Asp Leu Lys Lys Thr Arg Val Leu Leu Gly Asn Glu Ser Cys Thr
290 295 300

Leu Thr Leu Ser Glu Ser Thr Met Asn Thr Leu Lys Cys Thr Val Gly
305 310 315 320

Pro Ala Met Asn Lys His Phe Asn Met Ser Ile Ile Ile Ser Asn Gly
325 330 335

His Gly Thr Thr Gln Tyr Ser Thr Phe Ser Tyr Val Asp Pro Ile Ile
340 345 350

Thr Ser Ile Ser Pro Lys Tyr Gly Pro Met Ala Gly Gly Thr Leu Leu
355 360 365

Thr Leu Thr Gly Asn Tyr Leu Asn Ser Gly Asn Ser Arg His Ile Ser
370 375 380

Ile Gly Gly Lys Thr Cys Thr Leu Lys Ser Val Ser Asn Ser Ile Leu
385 390 395 400

Glu Cys Tyr Thr Pro Ala Gln Thr Ile Ser Thr Glu Phe Ala Val Lys
405 410 415

Leu Lys Ile Asp Leu Ala Asn Arg Glu Thr Ser Ile Phe Ser Tyr Arg
420 425 430

Glu Asp Pro Ile Val Tyr Glu Ile His Pro Thr Lys Ser Phe Ile Ser
435 440 445

Gly Gly Ser Thr Ile Thr Gly Val Gly Lys Asn Leu His Ser Val Ser
450 455 460

Val Pro Arg Met Val Ile Asn Val His Glu Ala Gly Arg Asn Phe Thr
465 470 475 480

Val Ala Cys Gln His Arg Ser Asn Ser Glu Ile Ile Cys Cys Thr Thr
485 490 495

Pro Ser Leu Gln Gln Leu Asn Leu Gln Leu Pro Leu Lys Thr Lys Ala
500 505 510

Phe Phe Met Leu Asp Gly Ile Leu Ser Lys Tyr Phe Asp Leu Ile Tyr
515 520 525

Val His Asn Pro Val Phe Lys Pro Phe Glu Lys Pro Val Met Ile Ser
530 535 540

Met Gly Asn Glu Asn Val Leu Glu Ile Lys Gly Asn Asp Ile Asp Pro
545 550 555 560

Glu Ala Val Lys Gly Glu Val Leu Lys Val Gly Asn Lys Ser Cys Glu
565 570 575

Asn Ile His Leu His Ser Glu Ala Val Leu Cys Thr Val Pro Asn Asp
580 585 590

Leu Leu Lys Leu Asn Ser Glu Leu Asn Ile Glu Trp Lys Gln Ala Ile
595 600 605

Ser Ser Thr Val Leu Gly Lys Val Ile Val Gln Pro Asp Gln Asn Phe
610 615 620

Thr Gly Leu Ile Ala Gly Val Val Ser Ile Ser Ile Ala Leu Leu Leu
625 630 635 640

Leu Leu Gly Leu Phe Leu Trp Leu Lys Lys Arg Lys Gln Ile Lys Asp
645 650 655

Leu Gly Ser Glu Leu Val Arg Tyr Asp Ala Arg Val His Thr Pro His
660 665 670

Leu Asp Arg Leu Val Ser Ala Arg Ser Val Ser Pro Thr Thr Glu Met
675 680 685

Val Ser Asn Glu Ser Val Asp Tyr Arg Ala Thr Phe Pro Glu Asp Gln
690 695 700

Phe Pro Asn Ser Ser Gln Asn Gly Ser Cys Arg Gln Val Gln Tyr Pro
705 710 715 720

Leu Thr Asp Met Ser Pro Ile Leu Thr Ser Gly Asp Ser Asp Ile Ser

725	730	735
Ser Pro Leu Leu Gln Asn Thr Val His Ile Asp Leu Ser Ala Leu Asn 740 745 750		
Pro Glu Leu Val Gln Ala Val Gln His Val Val Ile Gly Pro Ser Ser 755 760 765		
Leu Ile Val His Phe Asn Glu Val Ile Gly Arg Gly His Phe Gly Cys 770 775 780		
Val Tyr His Gly Thr Leu Leu Asp Asn Asp Gly Lys Lys Ile His Cys 785 790 795 800		
Ala Val Lys Ser Leu Asn Arg Ile Thr Asp Ile Gly Glu Val Ser Gln 805 810 815		
Phe Leu Thr Glu Gly Ile Ile Met Lys Asp Phe Ser His Pro Asn Val 820 825 830		
Leu Ser Leu Leu Gly Ile Cys Leu Arg Ser Glu Gly Ser Pro Leu Val 835 840 845		
Val Leu Pro Tyr Met Lys His Gly Asp Leu Arg Asn Phe Ile Arg Asn 850 855 860		
Glu Thr His Asn Pro Thr Val Lys Asp Leu Ile Gly Phe Gly Leu Gln 865 870 875 880		
Val Ala Lys Gly Met Lys Tyr Leu Ala Ser Lys Lys Phe Val His Arg 885 890 895		
Asp Leu Ala Ala Arg Asn Cys Met Leu Asp Glu Lys Phe Thr Val Lys 900 905 910		
Val Ala Asp Phe Gly Leu Ala Arg Asp Met Tyr Asp Lys Glu Tyr Tyr 915 920 925		
Ser Val His Asn Lys Thr Gly Ala Lys Leu Pro Val Lys Trp Met Ala 930 935 940		

Leu Glu Ser Leu Gln Thr Gln Lys Phe Thr Thr Lys Ser Asp Val Trp
 945 950 955 960

Ser Phe Gly Val Leu Leu Trp Glu Leu Met Thr Arg Gly Ala Pro Pro
 965 970 975

Tyr Pro Asp Val Asn Thr Phe Asp Ile Thr Val Tyr Leu Leu Gln Gly
 980 985 990

Arg Arg Leu Leu Gln Pro Glu Tyr Cys Pro Asp Pro Leu Tyr Glu Val
 995 1000 1005

Met Leu Lys Cys Trp His Pro Lys Ala Glu Met Arg Pro Ser Phe
 1010 1015 1020

Ser Glu Leu Val Ser Arg Ile Ser Ala Ile Phe Ser Thr Phe Ile
 1025 1030 1035

Gly Glu His Tyr Val His Val Asn Ala Thr Tyr Val Asn Val Lys
 1040 1045 1050

Cys Val Ala Pro Tyr Pro Ser Leu Leu Ser Ser Glu Asp Asn Ala
 1055 1060 1065

Asp Asp Glu Val Asp Thr Glu Gln Lys Leu Ile Ser Glu Glu Asp
 1070 1075 1080

Leu Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu His His His His
 1085 1090 1095

His His
 1100

<210> 155
 <211> 936
 <212> PRT
 <213> Homo sapiens

<400> 155

Glu Cys Lys Glu Ala Leu Ala Lys Ser Glu Met Asn Val Asn Met Lys
 1 5 10 15

Tyr Gln Leu Pro Asn Phe Thr Ala Glu Thr Pro Ile Gln Asn Val Ile
 20 25 30

Leu His Glu His His Ile Phe Leu Gly Ala Thr Asn Tyr Ile Tyr Val
 35 40 45

Leu Asn Glu Glu Asp Leu Gln Lys Val Ala Glu Tyr Lys Thr Gly Pro
 50 55 60

Val Leu Glu His Pro Asp Cys Phe Pro Cys Gln Asp Cys Ser Ser Lys
 65 70 75 80

Ala Asn Leu Ser Gly Gly Val Trp Lys Asp Asn Ile Asn Met Ala Leu
 85 90 95

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

Asn Arg Gly Thr Cys Gln Arg His Val Phe Pro His Asn His Thr Ala
 115 120 125

Asp Ile Gln Ser Glu Val His Cys Ile Phe Ser Pro Gln Ile Glu Glu
 130 135 140

Pro Ser Gln Cys Pro Asp Cys Val Val Ser Ala Leu Gly Ala Lys Val
 145 150 155 160

Leu Ser Ser Val Lys Asp Arg Phe Ile Asn Phe Phe Val Gly Asn Thr
 165 170 175

Ile Asn Ser Ser Tyr Phe Pro Asp His Pro Leu His Ser Ile Ser Val
 180 185 190

Arg Arg Leu Lys Glu Thr Lys Asp Gly Phe Met Phe Leu Thr Asp Gln
 195 200 205

Ser Tyr Ile Asp Val Leu Pro Glu Phe Arg Asp Ser Tyr Pro Ile Lys
 210 215 220

Tyr Val His Ala Phe Glu Ser Asn Asn Phe Ile Tyr Phe Leu Thr Val
 225 230 235 240

Gln Arg Glu Thr Leu Asp Ala Gln Thr Phe His Thr Arg Ile Ile Arg
245 250 255

Phe Cys Ser Ile Asn Ser Gly Leu His Ser Tyr Met Glu Met Pro Leu
260 265 270

Glu Cys Ile Leu Thr Glu Lys Arg Lys Lys Arg Ser Thr Lys Lys Glu
275 280 285

Val Phe Asn Ile Leu Gln Ala Ala Tyr Val Ser Lys Pro Gly Ala Gln
290 295 300

Leu Ala Arg Gln Ile Gly Ala Ser Leu Asn Asp Asp Ile Leu Phe Gly
305 310 315 320

Val Phe Ala Gln Ser Lys Pro Asp Ser Ala Glu Pro Met Asp Arg Ser
325 330 335

Ala Met Cys Ala Phe Pro Ile Lys Tyr Val Asn Asp Phe Phe Asn Lys
340 345 350

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

Asn His Glu His Cys Phe Asn Arg Thr Leu Leu Arg Asn Ser Ser Gly
370 375 380

Cys Glu Ala Arg Arg Asp Glu Tyr Arg Thr Glu Phe Thr Thr Ala Leu
385 390 395 400

Gln Arg Val Asp Leu Phe Met Gly Gln Phe Ser Glu Val Leu Leu Thr
405 410 415

Ser Ile Ser Thr Phe Ile Lys Gly Asp Leu Thr Ile Ala Asn Leu Gly
420 425 430

Thr Ser Glu Gly Arg Phe Met Gln Val Val Val Ser Arg Ser Gly Pro
435 440 445

Ser Thr Pro His Val Asn Phe Leu Leu Asp Ser His Pro Val Ser Pro
450 455 460

Glu Val Ile Val Glu His Thr Leu Asn Gln Asn Gly Tyr Thr Leu Val
465 470 475 480

Ile Thr Gly Lys Lys Ile Thr Lys Ile Pro Leu Asn Gly Leu Gly Cys
485 490 495

Arg His Phe Gln Ser Cys Ser Gln Cys Leu Ser Ala Pro Pro Phe Val
500 505 510

Gln Cys Gly Trp Cys His Asp Lys Cys Val Arg Ser Glu Glu Cys Leu
515 520 525

Ser Gly Thr Trp Thr Gln Gln Ile Cys Leu Pro Ala Ile Tyr Lys Val
530 535 540

Phe Pro Asn Ser Ala Pro Leu Glu Gly Gly Thr Arg Leu Thr Ile Cys
545 550 555 560

Gly Trp Asp Phe Gly Phe Arg Arg Asn Asn Lys Phe Asp Leu Lys Lys
565 570 575

Thr Arg Val Leu Leu Gly Asn Glu Ser Cys Thr Leu Thr Leu Ser Glu
580 585 590

Ser Thr Met Asn Thr Leu Lys Cys Thr Val Gly Pro Ala Met Asn Lys
595 600 605

His Phe Asn Met Ser Ile Ile Ile Ser Asn Gly His Gly Thr Thr Gln
610 615 620

Tyr Ser Thr Phe Ser Tyr Val Asp Pro Val Ile Thr Ser Ile Ser Pro
625 630 635 640

Lys Tyr Gly Pro Met Ala Gly Gly Thr Leu Leu Thr Leu Thr Gly Asn
645 650 655

Tyr Leu Asn Ser Gly Asn Ser Arg His Ile Ser Ile Gly Gly Lys Thr
660 665 670

Cys Thr Leu Lys Ser Val Ser Asn Ser Ile Leu Glu Cys Tyr Thr Pro

675

680

685

Ala Gln Thr Ile Ser Thr Glu Phe Ala Val Lys Leu Lys Ile Asp Leu
 690 695 700

Ala Asn Arg Glu Thr Ser Ile Phe Ser Tyr Arg Glu Asp Pro Ile Val
 705 710 715 720

Tyr Glu Ile His Pro Thr Lys Ser Phe Ile Ser Gly Gly Ser Thr Ile
 725 730 735

Thr Gly Val Gly Lys Asn Leu Asn Ser Val Ser Val Pro Arg Met Val
 740 745 750

Ile Asn Val His Glu Ala Gly Arg Asn Phe Thr Val Ala Cys Gln His
 755 760 765

Arg Ser Asn Ser Glu Ile Ile Cys Cys Thr Thr Pro Ser Leu Gln Gln
 770 775 780

Leu Asn Leu Gln Leu Pro Leu Lys Thr Lys Ala Phe Phe Met Leu Asp
 785 790 795 800

Gly Ile Leu Ser Lys Tyr Phe Asp Leu Ile Tyr Val His Asn Pro Val
 805 810 815

Phe Lys Pro Phe Glu Lys Pro Val Met Ile Ser Met Gly Asn Glu Asn
 820 825 830

Val Leu Glu Ile Lys Gly Asn Asp Ile Asp Pro Glu Ala Val Lys Gly
 835 840 845

Glu Val Leu Lys Val Gly Asn Lys Ser Cys Glu Asn Ile His Leu His
 850 855 860

Ser Glu Ala Val Leu Cys Thr Val Pro Asn Asp Leu Leu Lys Leu Asn
 865 870 875 880

Ser Glu Leu Asn Ile Glu Trp Lys Gln Ala Ile Ser Ser Thr Val Leu
 885 890 895

Gly Lys Val Ile Val Gln Pro Asp Gln Asn Phe Thr Glu Gln Lys Leu
 900 905 910

Ile Ser Glu Glu Asp Leu Gly Gly Glu Gln Lys Leu Ile Ser Glu Glu
 915 920 925

Asp Leu His His His His His His
 930 935

<210> 156
 <211> 13
 <212> PRT
 <213> Homo sapiens

<400> 156

Val Arg Arg Leu Lys Glu Thr Lys Asp Gly Phe Met Phe
 1 5 10

<210> 157
 <211> 11
 <212> PRT
 <213> Homo sapiens

<400> 157

Leu Ala Arg Gln Ile Gly Ala Ser Leu Asn Asp
 1 5 10

<210> 158
 <211> 35
 <212> PRT
 <213> Homo sapiens

<400> 158

Phe Ile Lys Gly Asp Leu Thr Ile Ala Asn Leu Gly Thr Ser Glu Gly
 1 5 10 15

Arg Phe Met Gln Val Val Val Ser Arg Ser Gly Pro Ser Thr Pro His
 20 25 30

Val Asn Phe
 35