SEQUENCE LISTING

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<120> Anti-huTNFR1 therapy of nonalcoholic steatohepatitis

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<170> PatentIn version 3.5

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<223> X at position 3 is any of Y or V

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<222> (5)..(5)

<223> X at position 5 is any of Y, T, S or G

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<222> (6)..(6)

<223> X at position 6 is any of S or Q

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<222> (8)..(8)

<223> X at position 8 is any of H or E

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<222> (10)..(10)

<223> X at position 10 is any of Y or K

<220>

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<222> (13)..(13)

<223> X at position 13 is any of E or D

<400> 2

Glu Ile Xaa Pro Xaa Xaa Gly Xaa Ala Xaa Tyr Asn Xaa Lys Phe Lys
1 5 10 15

Ala

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Trp Asp Phe Leu Asp Tyr
1 5

<210> 4

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<400> 4

Arg Ser Ser Gln Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu His

1 5 10 15

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<211> 7

<212> PRT

<213> Artificial Sequence

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<400> 5

Thr Val Ser Asn Arg Phe Ser

1 5

<210> 6

<211> 9

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<223> X at position 3 is any of S or G

<400> 6

Ser Gln Xaa Thr His Val Pro Tyr Thr

1 5

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<400> 7

His Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser

1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Phe

20 25 30

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile

35 40 45

Gly Glu Ile Val Pro Ser Gln Gly Glu Ala Lys Tyr Asn Asp Lys Phe

50 55 60

Lys Ala Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr

65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Trp Asp Phe Leu Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr

100 105 110

Val Ser Ser

115

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Asp Val 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 Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

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

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

Arg Thr Val Ala Ala

115

<210> 9

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 9

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser

1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Phe

20 25 30

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile

35 40 45

Gly Glu Ile Tyr Pro Tyr Ser Gly His Ala Tyr Tyr Asn Glu Lys Phe

50 55 60

Lys Ala Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr

65 70 75 80

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

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

Val Ser Ser
115

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<212> PRT
<213> Artificial Sequence

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<400> 10

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

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

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

Arg

<210> 11

<211> 218

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain

<400> 11

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

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

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

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

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

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

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

Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro

115 120 125

Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val

130 135 140

Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala

145 150 155 160

Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly

165 170 175

Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly

180 185 190

Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys

195 200 205

Val Asp Lys Lys Val Glu Pro Lys Ser Cys

210 215

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<211> 219

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain

<400> 12

Asp Val 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 Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

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

Thr His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys

100 105 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu

115 120 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe

130 135 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln

145 150 155 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser

165 170 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu

180 185 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser

195 200 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys

210 215

<210> 13

<211> 326

<212> PRT

<213> Artificial Sequence

<220>

<223> Light chain

<400> 13

Asp Val 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 Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

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

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

Gly Thr Gly Gly Gly Ser Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
115 120 125

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

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

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

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

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

195 200 205

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

Pro Arg Glu Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
225 230 235 240

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
245 250 255

Ser Asp Ile Ala Val Glu Trp Glu Ser Gly Ala Leu Thr Ser Gly Val
260 265 270

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
275 280 285

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ser
290 295 300

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

Val Glu Pro Lys Ser Cys

325

<210> 14

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> VL

<400> 14

Asp Val 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 Ser Ser Gln Ser Leu Leu His Ser

20 25 30

Asn Gly Asn Thr Tyr Leu His Trp Tyr Gln Gln Lys Pro Gly Lys Ala

35 40 45

Pro Lys Leu Leu Ile Tyr Thr Val Ser Asn Arg Phe Ser Gly Val Pro

50 55 60

Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile

65 70 75 80

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

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

<210> 15

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Linker

<400> 15

Gly Thr Gly Gly Gly Ser Gly
1 5

<210> 16

<211> 103

<212> PRT

<213> Artificial Sequence

<220>

<223> CH2

<400> 16

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
1 5 10 15

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
20 25 30

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
35 40 45

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
50 55 60

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
65 70 75 80

Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu
85 90 95

Lys Thr Ile Ser Lys Ala Lys
100

<210> 17

<211> 104

<212> PRT

<213> Artificial Sequence

<220>

<223> CH31

<400> 17

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

85 90 95

Lys Ser Val Glu Pro Lys Ser Cys

100

<210> 18

<211> 333

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain

<400> 18

His Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser

1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Phe

20 25 30

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile

35 40 45

Gly Glu Ile Val Pro Ser Gln Gly Glu Ala Lys Tyr Asn Asp Lys Phe

50 55 60

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

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

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

Val Ser Ser Gly Thr Gly Gly Gly Ser Gly Pro Ser Val Phe Leu Phe
115 120 125

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

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
145 150 155 160

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

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

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

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

Lys Gly Gln Pro Arg Glu Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
225 230 235 240

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Val Asn Asn
245 250 255

Phe Tyr Pro Arg Asp Ile Ala Val Glu Trp Glu Val Asp Asn Ala Leu
260 265 270

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp
275 280 285

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr
290 295 300

Glu Lys His Lys Val Tyr Ser Cys Ser Val Met His Glu Ala Leu His
305 310 315 320

Asn His Tyr Thr Gln Lys Ser Phe Asn Arg Gly Glu Cys
325 330

<210> 19
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> VH

<400> 19

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

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

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Val Pro Ser Gln Gly Glu Ala Lys Tyr Asn Asp Lys Phe

50 55 60

Lys Ala Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr

65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Trp Asp Phe Leu Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr

100 105 110

Val Ser Ser

115

<210> 20

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> CH3k

<400> 20

Gly Gln Pro Arg Glu Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu

1 5 10 15

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

Tyr Pro Arg Asp Ile Ala Val Glu Trp Glu Val Asp Asn Ala Leu Gln
35 40 45

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

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

Lys His Lys Val Tyr Ser Cys Ser Val Met His Glu Ala Leu His Asn
85 90 95

His Tyr Thr Gln Lys Ser Phe Asn Arg Gly Glu Cys
100 105

<210> 21

<211> 978

<212> DNA

<213> Artificial Sequence

<220>

<223> Light chain

<400> 21

gatgtgcaga tgacccagag ccccagcagc ctgtctgcca gcgtgggcga cagagtgacc 60

atcacctgtc ggagcagcca gagcctgctg cacagcaacg gcaacaccta cctgcattgg 120

tatcagcaga agcccggcaa ggcccccaag ctgctgatct acaccgtgtc caacagattc 180

agcggcgtgc cctctagatt ctccggctct ggcagcggca ccgacttcac cctgaccatc 240

tctagcctgc agcccgagga cttcgccacc tactactgca gccagtccac ccacgtgccg 300

tataccttg gcggaggcac caaggtggaa atcaaaggta ccggcggagg atctggccct 360

agcgtgttcc tgttcccccc aaagcccaag gacaccctga tgatctcccg gacccccgaa 420

gtgacctgcg tggtggtgga tgtgtcccac gaggaccctg aagtgaagtt taattggtac 480

gtggacggcg tggaagtgca taacgccaag accaagccca gagaggaaca gtacaacagc 540

acctaccggg tggtgtccgt gctgaccgtg ctgcaccagg actggctgaa cggcaaagag 600

tacaagtgca aggtgtccaa caagggcctg cccagcagca tcgagaaaac catcagcaag 660

gccaagggcc agcctcggga accctccgtg tttcctctgg cccctagcag caagagcacc 720

tctggcggaa cagccgccct gggctgcctc gtgaaggact acttccccag cgacattgcc 780

gtggaatggg agtctggcgc cctgaccagc ggagtgcata cctttccagc agtgctccag 840

agcagcggcc tgtacagcct gagcagcgtc gtgacagtgc ccagctctag cctgggcacc 900

cagacctact cttgcagcgt gatgcacgag gccctgcaca accactacac ccagaaaagc 960

gtggaaccca agagctgc 978

<210> 22

<211> 999

<212> DNA

<213> Artificial Sequence

<220>

<223> Heavy chain

<400> 22

cacgtgcagc tggtgcagtc tggcgccgaa gtgaagaaac ccggcagcag cgtgaaggtg 60

tcctgcaagg ccagcggcta caccttcacc gacttctaca tcaactgggt gcgccaggct 120

ccaggacagg gcctggaatg gatcggcgag atcgtgccta gccagggcga ggccaagtac 180

aacgacaagt tcaaggccag agtgaccatc accgccgaca agagcaccag caccgcctac 240

atggaactga gcagcctgcg gagcgaggac accgccgtgt actactgcgc cagatgggac 300

ttcctggact actggggcca gggcaccacc gtgacagtct cgagcggtac cggcggagga 360

tctggcccta gcgtgttcct gttcccccca aagcccaagg acaccctgat gatcagccgg 420

acccccgaag tgacctgcgt ggtggtggat gtgtcccacg aggaccctga agtgaagttc 480

aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcccag agaggaacag 540

tacaacagca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ctggctgaac 600

ggcaaagagt acaagtgcaa ggtgtccaac aagggcctgc ccagcagcat cgagaaaacc 660

atcagcaagg ccaagggcca gcctcgggaa cccagcgtgt tcatcttccc accctccgac 720

gagcagctga agtctggcac agccagcgtc gtgtgcctcg tgaacaactt ctaccccaga 780

gacattgccg tggaatggga ggtggacaac gccctccaga gcggcaacag ccaggaaagc 840

gtgaccgagc aggacagcaa ggactccacc tacagcctga gcagcaccct gaccctgagc 900

aaggccgact acgagaaaca taaggtgtac agctgctccg tgatgcacga ggccctgcac 960

aaccactaca cccagaagtc cttcaaccgg ggcgagtgc 999

<210> 23

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 23

Asp Phe Tyr Ile Asn

1 5

<210> 24

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 24

Glu Ile Tyr Pro Tyr Ser Gly His Ala Tyr Tyr Asn Glu Lys Phe Lys

1 5 10 15

Ala

<210> 25

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 25

Trp Asp Phe Leu Asp Tyr
1 5

<210> 26
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 26

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

<210> 27
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 27

Thr Val Ser Asn Arg Phe Ser

1 5

<210> 28

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 28

Ser Gln Ser Thr His Val Pro Tyr Thr

1 5

<210> 29

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 29

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser

1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Phe

20 25 30

Tyr Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile

35 40 45

Gly Glu Ile Tyr Pro Tyr Ser Gly His Ala Tyr Tyr Asn Glu Lys Phe

50 55 60

Lys Ala Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr

65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg Trp Asp Phe Leu Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr

100 105 110

Val Ser Ser

115

<210> 30

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> VL

<400> 30

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

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

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

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

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

Thr His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys

100 105 110

Arg

<210> 31

<211> 223

<212> PRT

<213> Homo sapiens

<400> 31

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val

1 5 10 15

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr

20 25 30

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu

35 40 45

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys

50 55 60

Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
65 70 75 80

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
85 90 95

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile
100 105 110

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro
115 120 125

Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu
130 135 140

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

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
165 170 175

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
180 185 190

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu

195 200 205

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys

210 215 220

<210> 32

<211> 455

<212> PRT

<213> Homo sapiens

<400> 32

Met Gly Leu Ser Thr Val Pro Asp Leu Leu Leu Pro Leu Val Leu Leu

1 5 10 15

Glu Leu Leu Val Gly Ile Tyr Pro Ser Gly Val Ile Gly Leu Val Pro

20 25 30

His Leu Gly Asp Arg Glu Lys Arg Asp Ser Val Cys Pro Gln Gly Lys

35 40 45

Tyr Ile His Pro Gln Asn Asn Ser Ile Cys Cys Thr Lys Cys His Lys

50 55 60

Gly Thr Tyr Leu Tyr Asn Asp Cys Pro Gly Pro Gly Gln Asp Thr Asp
65 70 75 80

Cys Arg Glu Cys Glu Ser Gly Ser Phe Thr Ala Ser Glu Asn His Leu
85 90 95

Arg His Cys Leu Ser Cys Ser Lys Cys Arg Lys Glu Met Gly Gln Val
100 105 110

Glu Ile Ser Ser Cys Thr Val Asp Arg Asp Thr Val Cys Gly Cys Arg
115 120 125

Lys Asn Gln Tyr Arg His Tyr Trp Ser Glu Asn Leu Phe Gln Cys Phe
130 135 140

Asn Cys Ser Leu Cys Leu Asn Gly Thr Val His Leu Ser Cys Gln Glu
145 150 155 160

Lys Gln Asn Thr Val Cys Thr Cys His Ala Gly Phe Phe Leu Arg Glu
165 170 175

Asn Glu Cys Val Ser Cys Ser Asn Cys Lys Lys Ser Leu Glu Cys Thr
180 185 190

Lys Leu Cys Leu Pro Gln Ile Glu Asn Val Lys Gly Thr Glu Asp Ser

195 200 205

Gly Thr Thr Val Leu Leu Pro Leu Val Ile Phe Phe Gly Leu Cys Leu

210 215 220

Leu Ser Leu Leu Phe Ile Gly Leu Met Tyr Arg Tyr Gln Arg Trp Lys

225 230 235 240

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

245 250 255

Gly Glu Leu Glu Gly Thr Thr Thr Lys Pro Leu Ala Pro Asn Pro Ser

260 265 270

Phe Ser Pro Thr Pro Gly Phe Thr Pro Thr Leu Gly Phe Ser Pro Val

275 280 285

Pro Ser Ser Thr Phe Thr Ser Ser Ser Thr Tyr Thr Pro Gly Asp Cys

290 295 300

Pro Asn Phe Ala Ala Pro Arg Arg Glu Val Ala Pro Pro Tyr Gln Gly

305 310 315 320

Ala Asp Pro Ile Leu Ala Thr Ala Leu Ala Ser Asp Pro Ile Pro Asn
325 330 335

Pro Leu Gln Lys Trp Glu Asp Ser Ala His Lys Pro Gln Ser Leu Asp
340 345 350

Thr Asp Asp Pro Ala Thr Leu Tyr Ala Val Val Glu Asn Val Pro Pro
355 360 365

Leu Arg Trp Lys Glu Phe Val Arg Arg Leu Gly Leu Ser Asp His Glu
370 375 380

Ile Asp Arg Leu Glu Leu Gln Asn Gly Arg Cys Leu Arg Glu Ala Gln
385 390 395 400

Tyr Ser Met Leu Ala Thr Trp Arg Arg Arg Thr Pro Arg Arg Glu Ala
405 410 415

Thr Leu Glu Leu Leu Gly Arg Val Leu Arg Asp Met Asp Leu Leu Gly
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Cys Leu Glu Asp Ile Glu Glu Ala Leu Cys Gly Pro Ala Ala Leu Pro

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Pro Ala Pro Ser Leu Leu Arg

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<213> Homo sapiens

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Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly

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Gly