

SEQUENCE LISTING

<110> IMCHECK THERAPEUTICS

<120> Anti-BTN3A antibodies and their use in treating cancer or infectious disorders

<130> BEP180083 EP

<160> 23

<170> PatentIn version 3.5

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<212> PRT

<213> Homo sapiens

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

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

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

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

Ser Arg Glu Asp Asp Tyr Asp Gly Thr Pro Phe Ala Met Asp Tyr Trp
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Gly Gln Gly Thr Leu Val Thr Val Ser Ser

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 35 40 45

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

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

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

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

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

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

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

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

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

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

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

Ser Arg Glu Asp Asp Tyr Asp Gly Thr Pro Phe Ala Met Asp Tyr Trp
 100 105 110

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

Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr
 130 135 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
 145 150 155 160

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

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
 180 185 190

Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn
 195 200 205

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

Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu
 225 230 235 240

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

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

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
 275 280 285

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

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
 305 310 315 320

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Ser
 325 330 335

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

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
 355 360 365

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val
 370 375 380

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
 385 390 395 400

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

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

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

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

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

Ser Arg Glu Asp Asp Tyr Asp Gly Thr Pro Phe Ala Met Asp Tyr Trp
 100 105 110

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

Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr
 130 135 140

Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
 145 150 155 160

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

Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr
 180 185 190

Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp
 195 200 205

His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr
 210 215 220

Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Glu Gly Gly Pro
 225 230 235 240

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

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

Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
 275 280 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val
 290 295 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
 305 310 315 320

Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys
 325 330 335

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

Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr
 355 360 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
 370 375 380

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

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys
 405 410 415

Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu
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Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly
 435 440 445

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

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

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

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

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Gly Gln Thr Tyr Pro Tyr

85

90

95

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

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
 115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
 145 150 155 160

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

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
 180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
 195 200 205

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

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

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

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

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Gly Gln Thr Tyr Pro Tyr
 85 90 95

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

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
 115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
 130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
 145 150 155 160

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

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
 180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
 195 200 205

Phe Asn Arg Gly Glu Cys
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 cctggacaag gccttgagtg gattggagag attaatccta acaatgggtg tactaagttc 180
 aatgagaagt tcaagaacag ggccacactg actgtagaca aatccatcag cacagcatac 240
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 acccctgagg tcacatgcgt ggtgggtggac gtgagccacg aagaccctga ggtcaagttc 840
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tacacgcaga agagcctctc cctgtctccg ggttga 1356

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<212> DNA

<213> Homo sapiens

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cctggacaag gccttgagtg gattggagag attaatccta acaatgggtg tactaagttc 180

aatgagaagt tcaagaacag ggccacactg actgtagaca aatccatcag cacagcatac 240

atggagctca gcaggctgag atctgacgac acggcggctct attattgttc aagagaggat 300

gattacgacg ggacccccctt tgctatggac tactgggggtc aaggaaccct ggtcaccgtc 360

tcctcagctt ccaccaaggg cccatccgtc ttccccctgg cgccctgctc caggagcacc 420

tccgagagca cagccgccct gggctgcctg gtcaaggact acttccccga accggtgacg 480

gtgtcgtgga actcaggcgc cctgaccagc ggctgacaca ctttcccggc tgtcctacag 540

tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacg 600

aagacctaca cctgcaatgt agatcacaag cccagcaaca ccaaggtgga caagagagtt 660

gagtccaaat atgggtcccc atgcccacca tgcccagcac ctgagttcga gggggggacca 720

tcagtcttcc tgttcccccc aaaacccaag gacactctca tgatctcccg gaccctgag 780

gtcacgtgcg tgggtggtgga cgtgagccag gaagaccccg aggtccagtt caactggtac 840

gtggatggcg tggaggtgca taatgccaa acaaagccgc gggaggagca gttcaacagc 900

acgtaccgtg tggtcagcgt cctcaccgtc ctgcaccagg actggctgaa cggcaaggag 960

tacaagtgca aggtctccaa caaaggcctc ccgtcctcca tcgagaaaac catctccaaa 1020

gccaaagggc agccccgaga gccacagggtg tacaccctgc ccccatccca ggaggagatg 1080

accaagaacc aggtcagcct gacctgcctg gtcaaaggct tctaccccag cgacatcgcc 1140

gtggagtggg agagcaatgg gcagccggag aacaactaca agaccacgcc tcccgtgctg 1200

gactccgacg gctccttctt cctctacagc aggctaaccg tggacaagag caggtggcag 1260
gaggggaatg tcttctcatg ctccgtgatg catgaggctc tgcacaacca ctacacacag 1320
aagagcctct ccctgtctct gggttga 1347

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<211> 645
<212> DNA
<213> Homo sapiens

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atcacttgcc atgccagtca gaacattaat gtttggttat cttggtacca gcagaaacca 120
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ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gttag 645

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<212> DNA
<213> Homo sapiens

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ggaaaagccc ctaaactctt gatctataag gcttccaact tgcacacagg cgtcccatca 180

14

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gggaccaagc tggagatcaa acgaactgtg gctgcaccat ctgtcttcat cttcccgcc 360
tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420
cccagagagg ccaaagtaca gtggaagggtg gataacgccc tccaatcggg taactcccag 480
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600
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<213> Homo sapiens

<400> 12

Arg Tyr Tyr Met Tyr
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<210> 13
<211> 17
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<400> 13

Glu Ile Asn Pro Asn Asn Gly Gly Thr Lys Phe Asn Glu Lys Phe Lys
1 5 10 15

Asn

<210> 14
<211> 13
<212> PRT
<213> Homo sapiens

<400> 14

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Glu Asp Asp Tyr Asp Gly Thr Pro Phe Ala Met Asp Tyr
1 5 10

<210> 15
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<212> PRT
<213> Homo sapiens

<400> 15

His Ala Ser Gln Asn Ile Asn Val Trp Leu Ser
1 5 10

<210> 16
<211> 7
<212> PRT
<213> Homo sapiens

<400> 16

Lys Ala Ser Asn Leu His Thr
1 5

<210> 17
<211> 9
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<400> 17

Gln Gln Gly Gln Thr Tyr Pro Tyr Thr
1 5

<210> 18
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<400> 18

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Cys Leu Leu Leu Leu Gln Leu Leu Met Pro His Ser Ala Gln Phe Ser
 20 25 30 16

Val Leu Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala
 35 40 45

Asp Leu Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu
 50 55 60

Leu Lys Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala
 65 70 75 80

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

Thr Ser Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg
 100 105 110

Ile His Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe
 115 120 125

Gln Asp Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala
 130 135 140

Ala Leu Gly Ser Asp Leu His Val Asp Val Lys Gly Tyr Lys Asp Gly
 145 150 155 160

Gly Ile His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln
 165 170 175

Ile Gln Trp Ser Asn Asn Lys Gly Glu Asn Ile Pro Thr Val Glu Ala
 180 185 190

Pro Val Val Ala Asp Gly Val Gly Leu Tyr Ala Val Ala Ala Ser Val
 195 200 205

Ile Met Arg Gly Ser Ser Gly Glu Gly Val Ser Cys Thr Ile Arg Ser

210

215

220

Ser Leu Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Ala Asp Pro
 225 230 235 240

Phe Phe Arg Ser Ala Gln Arg Trp Ile Ala Ala Leu Ala Gly Thr Leu
 245 250 255

Pro Val Leu Leu Leu Leu Leu Gly Gly Ala Gly Tyr Phe Leu Trp Gln
 260 265 270

Gln Gln Glu Glu Lys Lys Thr Gln Phe Arg Lys Lys Lys Arg Glu Gln
 275 280 285

Glu Leu Arg Glu Met Ala Trp Ser Thr Met Lys Gln Glu Gln Ser Thr
 290 295 300

Arg Val Lys Leu Leu Glu Glu Leu Arg Trp Arg Ser Ile Gln Tyr Ala
 305 310 315 320

Ser Arg Gly Glu Arg His Ser Ala Tyr Asn Glu Trp Lys Lys Ala Leu
 325 330 335

Phe Lys Pro Ala Asp Val Ile Leu Asp Pro Lys Thr Ala Asn Pro Ile
 340 345 350

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

Gln Asp Leu Pro Asp Asn Pro Glu Arg Phe Asn Trp His Tyr Cys Val
 370 375 380

Leu Gly Cys Glu Ser Phe Ile Ser Gly Arg His Tyr Trp Glu Val Glu
 385 390 395 400

Val Gly Asp Arg Lys Glu Trp His Ile Gly Val Cys Ser Lys Asn Val
 405 410 415

Gln Arg Lys Gly Trp Val Lys Met Thr Pro Glu Asn Gly Phe Trp Thr
420 425 430

Met Gly Leu Thr Asp Gly Asn Lys Tyr Arg Thr Leu Thr Glu Pro Arg
435 440 445

Thr Asn Leu Lys Leu Pro Lys Pro Pro Lys Lys Val Gly Val Phe Leu
450 455 460

Asp Tyr Glu Thr Gly Asp Ile Ser Phe Tyr Asn Ala Val Asp Gly Ser
465 470 475 480

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

Val Phe Arg Ile Leu Thr Leu Glu Pro Thr Ala Leu Thr Ile Cys Pro
500 505 510

Ala

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<212> PRT
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<400> 19

Met Lys Met Ala Ser Ser Leu Ala Phe Leu Leu Leu Asn Phe His Val
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20 25 30

Val Leu Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala
35 40 45

Asp Leu Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu
 50 55 60 19

Leu Lys Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala
 65 70 75 80

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

Thr Ser Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg
 100 105 110

Ile His Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe
 115 120 125

Gln Asp Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala
 130 135 140

Ala Leu Gly Ser Asn Leu His Val Glu Val Lys Gly Tyr Glu Asp Gly
 145 150 155 160

Gly Ile His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln
 165 170 175

Ile Gln Trp Ser Asn Ala Lys Gly Glu Asn Ile Pro Ala Val Glu Ala
 180 185 190

Pro Val Val Ala Asp Gly Val Gly Leu Tyr Glu Val Ala Ala Ser Val
 195 200 205

Ile Met Arg Gly Gly Ser Gly Glu Gly Val Ser Cys Ile Ile Arg Asn
 210 215 220

Ser Leu Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Ala Asp Pro
 225 230 235 240

Phe Phe Arg Ser Ala Gln Pro Trp Ile Ala Ala Leu Ala Gly Thr Leu

245 250 20 255
 Pro Ile Leu Leu Leu Leu Leu Ala Gly Ala Ser Tyr Phe Leu Trp Arg
 260 265 270
 Gln Gln Lys Glu Ile Thr Ala Leu Ser Ser Glu Ile Glu Ser Glu Gln
 275 280 285
 Glu Met Lys Glu Met Gly Tyr Ala Ala Thr Glu Arg Glu Ile Ser Leu
 290 295 300
 Arg Glu Ser Leu Gln Glu Glu Leu Lys Arg Lys Lys Ile Gln Tyr Leu
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 Thr Arg Gly Glu Glu Ser Ser Ser Asp Thr Asn Lys Ser Ala
 325 330
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 Val Leu Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala
 35 40 45
 Asp Leu Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu
 50 55 60
 Leu Arg Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala
 65 70 75 80

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

Thr Ser Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg
 100 105 110

Ile His Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe
 115 120 125

Gln Asp Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala
 130 135 140

Ala Leu Gly Ser Asp Leu His Ile Glu Val Lys Gly Tyr Glu Asp Gly
 145 150 155 160

Gly Ile His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln
 165 170 175

Ile Lys Trp Ser Asp Thr Lys Gly Glu Asn Ile Pro Ala Val Glu Ala
 180 185 190

Pro Val Val Ala Asp Gly Val Gly Leu Tyr Ala Val Ala Ala Ser Val
 195 200 205

Ile Met Arg Gly Ser Ser Gly Gly Gly Val Ser Cys Ile Ile Arg Asn
 210 215 220

Ser Leu Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Ala Asp Pro
 225 230 235 240

Phe Phe Arg Ser Ala Gln Pro Trp Ile Ala Ala Leu Ala Gly Thr Leu
 245 250 255

Pro Ile Ser Leu Leu Leu Leu Ala Gly Ala Ser Tyr Phe Leu Trp Arg
 260 265 270

Gln Gln Lys Glu Lys Ile Ala Leu Ser Arg Glu Thr Glu Arg Glu Arg
275 280 285 22

Glu Met Lys Glu Met Gly Tyr Ala Ala Thr Glu Gln Glu Ile Ser Leu
290 295 300

Arg Glu Lys Leu Gln Glu Glu Leu Lys Trp Arg Lys Ile Gln Tyr Met
305 310 315 320

Ala Arg Gly Glu Lys Ser Leu Ala Tyr His Glu Trp Lys Met Ala Leu
325 330 335

Phe Lys Pro Ala Asp Val Ile Leu Asp Pro Asp Thr Ala Asn Ala Ile
340 345 350

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

Arg Asp Leu Pro Asp Asn Pro Glu Arg Phe Glu Trp Arg Tyr Cys Val
370 375 380

Leu Gly Cys Glu Asn Phe Thr Ser Gly Arg His Tyr Trp Glu Val Glu
385 390 395 400

Val Gly Asp Arg Lys Glu Trp His Ile Gly Val Cys Ser Lys Asn Val
405 410 415

Glu Arg Lys Lys Gly Trp Val Lys Met Thr Pro Glu Asn Gly Tyr Trp
420 425 430

Thr Met Gly Leu Thr Asp Gly Asn Lys Tyr Arg Ala Leu Thr Glu Pro
435 440 445

Arg Thr Asn Leu Lys Leu Pro Glu Pro Pro Arg Lys Val Gly Ile Phe
450 455 460

Leu Asp Tyr Glu Thr Gly Glu Ile Ser Phe Tyr Asn Ala Thr Asp Gly

465	470	23 475	480
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Ser His Ile Tyr Thr Phe Pro His Ala Ser Phe Ser Glu Pro Leu Tyr
485 490 495

Pro Val Phe Arg Ile Leu Thr Leu Glu Pro Thr Ala Leu Thr Ile Cys
500 505 510

Pro Ile Pro Lys Glu Val Glu Ser Ser Pro Asp Pro Asp Leu Val Pro
515 520 525

Asp His Ser Leu Glu Thr Pro Leu Thr Pro Gly Leu Ala Asn Glu Ser
530 535 540

Gly Glu Pro Gln Ala Glu Val Thr Ser Leu Leu Leu Pro Ala His Pro
545 550 555 560

Gly Ala Glu Val Ser Pro Ser Ala Thr Thr Asn Gln Asn His Lys Leu
565 570 575

Gln Ala Arg Thr Glu Ala Leu Tyr
580

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<210> 21
<211> 243
<212> PRT
<213> Macaca fascicularis
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<400> 21

Met Gly Ser Ser Leu Ala Phe Leu Leu Leu Ser Phe His Val Cys Val
1 5 10 15

Leu Leu Leu Gln Leu Leu Met Pro His Ser Ala Gln Phe Ala Val Val
20 25 30

Gly Pro Pro Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala Asp Leu
35 40 45

Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu Leu Arg
 50 55 60

Trp Val Ser Ser Asn Leu Arg Gln Val Val Asn Val Tyr Ala Asp Gly
 65 70 75 80

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

Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg Ile His
 100 105 110

Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe Gln Asp
 115 120 125

Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala Ala Leu
 130 135 140

Gly Ser Asp Leu His Ile Asp Val Lys Gly Tyr Glu Asp Gly Gly Ile
 145 150 155 160

His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln Ile Arg
 165 170 175

Trp Ser Asn Asp Lys Gly Glu Asn Ile Pro Ala Val Glu Ala Pro Val
 180 185 190

Phe Val Asp Gly Val Gly Leu Tyr Ala Val Ala Ala Ser Val Ile Leu
 195 200 205

Arg Gly Ser Ser Gly Glu Gly Val Ser Cys Thr Ile Arg Ser Ser Leu
 210 215 220

Leu Gly Leu Glu Lys Thr Thr Ser Ile Ser Ile Ala Gly His His His
 225 230 235 240

His His His

<210> 22
 <211> 243
 <212> PRT
 <213> Macaca fascicularis

<400> 22

Met Gly Ser Ser Leu Ala Phe Leu Leu Leu Asn Phe His Val Ser Phe
 1 5 10 15

Phe Leu Val Gln Leu Leu Thr Pro Cys Ser Ala Gln Phe Ser Val Leu
 20 25 30

Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala Asp Leu
 35 40 45

Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu Leu Arg
 50 55 60

Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala Asp Gly
 65 70 75 80

Lys Glu Val Glu Asp Arg Gln Ser Ala Pro Tyr Arg Gly Arg Thr Ser
 85 90 95

Ile Leu Arg Asp Asp Ile Ala Ala Gly Lys Ala Ala Leu Arg Ile His
 100 105 110

Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe Gln Asp
 115 120 125

Ala Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala Ala Leu
 130 135 140

Gly Ser Asn Leu His Val Glu Val Lys Gly Tyr Glu Asp Gly Gly Ile
 145 150 155 160

His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Lys Ile Gln
 165 170 175

Trp Ser Asn Ala Lys Gly Gln Asn Ile Pro Ala Val Glu Ala Pro Val
 180 185 190

Val Ala Asp Gly Val Gly Leu Tyr Ala Val Ala Ala Ser Val Ile Met
 195 200 205

Arg Gly Gly Ser Gly Glu Ser Val Ser Cys Ile Ile Arg Asn Ser Val
 210 215 220

Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Ala Asp His His His
 225 230 235 240

His His His

<210> 23
 <211> 243
 <212> PRT
 <213> *Macaca fascicularis*

<400> 23

Met Ala Asn Phe Leu Ala Phe Leu Leu Leu Asn Phe Arg Val Cys Leu
 1 5 10 15

Leu Leu Val Gln Leu Leu Thr Pro Cys Ser Ala Gln Phe Ala Val Leu
 20 25 30

Gly Pro His Gly Pro Ile Leu Ala Met Val Gly Glu Asp Val Asp Leu
 35 40 45

Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu Leu Arg
 50 55 60

Trp Val Ser Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ser Asp Gly
65 70 75 80

Lys Glu Val Glu Asp Arg Gln Ser Ala Pro Tyr Arg Gly Arg Thr Ser
85 90 95

Ile Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg Ile His
100 105 110

Asn Val Thr Ala Ser Asp Ser Gly Lys Tyr Leu Cys Tyr Phe Gln Asp
115 120 125

Gly Asp Phe Tyr Glu Lys Ala Leu Val Glu Leu Lys Val Ala Ala Leu
130 135 140

Gly Ser Asp Leu His Ile Glu Val Lys Gly Tyr Glu Asp Gly Gly Ile
145 150 155 160

His Leu Glu Cys Arg Ser Thr Gly Trp Tyr Pro Gln Pro Gln Ile Gln
165 170 175

Trp Ser Asn Thr Lys Gly Gln His Ile Pro Ala Val Lys Ala Pro Val
180 185 190

Val Ala Asp Gly Val Gly Leu Tyr Ala Val Ala Ala Ser Val Ile Met
195 200 205

Arg Gly Ser Ser Gly Glu Gly Val Ser Cys Ile Ile Arg Asn Ser Leu
210 215 220

Leu Gly Leu Glu Lys Thr Ala Ser Ile Ser Ile Thr Asp His His His
225 230 235 240

His His His