

## SEQUENCE LISTING

<110> Eli Lilly and Company

<120> ANTICUERPOS ANTI-CD19 HUMANO

<130> X22706

<150> 62/983,093

<151> 2020-02-28

<160> 57

<170> PatentIn version 3.5

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<212> PRT

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

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

Gly Gly Ile Ile Pro Ile Phe Gly Thr Ala Asn Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Tyr Asn Tyr Gly Met Asp Val Trp Gly Gln  
100 105 110

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

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

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

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

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

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

Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro

210

215

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Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val  
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Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr  
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Pro Glu Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu  
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Val Gln Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys  
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Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Tyr Arg Val Val Ser  
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Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys  
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Cys Lys Val Ser Asn Lys Gly Leu Pro Ser Ser Ile Glu Lys Thr Ile  
325330335

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro  
340345350

Pro Ser Gln Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu  
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Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn  
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Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser  
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Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg  
405410415

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

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gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
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<400> 11

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

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

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

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

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

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

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys  
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tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc 480  
  
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1 5 10 15  
  
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Gly Val Asn Ser Tyr  
20 25 30  
  
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45  
  
Met Tyr Ala Thr Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60  
  
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80  
  
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Tyr Gly Asn Ser Leu  
85 90 95  
  
Phe Thr Phe Gly Pro Gly Thr Lys Val Glu Ile Lys  
100 105

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gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
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cctgggacca aggtggagat caaa 324

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Lys Ala Ser Gly Gly Thr Ile Ser Ser Tyr Ala Tyr Ser  
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Gly Ile Ile Pro Ile Phe Asp Thr Ala Asn  
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<400> 17

Ala Arg Glu Asp Phe Gly Tyr Asn Tyr Ala Met Asp Val  
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Arg Ala Ser Gln Lys Val Asn Ser Tyr Tyr Leu His  
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Tyr Ala Thr Arg Thr Arg Pro Thr  
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Gln His Tyr Gly Gln Ser Leu Phe Thr  
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<400> 21

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 Gly Thr Ile Ser Ser Tyr  
20 25 30

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

Gly Gly Ile Ile Pro Ile Phe Asp Thr Ala Asn Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Tyr Asn Tyr Ala Met Asp Val Trp Gly Gln  
100 105 110

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

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

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

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

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

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

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

Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe Leu Gly Gly Pro Ser Val  
225 230 235 240

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

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

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

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

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

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

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

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

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

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

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

Trp Gln Glu Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu  
420 425 430

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Leu Gly  
435 440 445

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<400> 23

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

<210> 28  
<211> 324  
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<213> SECUENCIA ARTIFICIAL  
  
<220>  
<223> Construcción sintética  
  
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ctctcctgca gggccagtca gaaagttaac agctactact tacattggta ccagcagaaa 120  
cctggccagg ctcccaggct cctcatctat gctacaagaa ccaggccaac tggcatccca 180  
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
cctgaagatt ttgcagtgta ttactgtcag cactatgggtc agtcactatt cactttcggc 300  
caggggacca aggtggagat caaa 324

<210> 29  
<211> 13  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 29

Lys Ala Ser Gly His Thr Ile Ser Ser Tyr Ala Tyr Ser  
1 5 10

<210> 30  
<211> 10  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 30

Asp Ile Ile Pro Ala Tyr Gly Ser Pro Asn  
1 5 10

<210> 31  
<211> 13  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 31

Ala Arg Glu Asp Phe Gly Lys Asn Tyr Ala Met Asp Val  
1 5 10

<210> 32  
<211> 12  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 32

Arg Ala Ser Gln His Val Ser Ser His Tyr Leu Ala  
1 5 10

<210> 33  
<211> 8  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 33

Tyr Gly Ala Ser Ser Arg Ala Thr  
1 5

<210> 34  
<211> 9  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 34

Gln His Tyr Gly Gln Ser Gln Phe Thr  
1 5

<210> 35  
<211> 446  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 35

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 His Thr Ile Ser Ser Tyr  
20 25 30

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

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

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Lys Asn Tyr Ala Met Asp Val Trp Gly Gln  
100 105 110

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

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

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

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

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

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

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 225 |     | 230 |     | 235 |     | 240 |     |     |     |     |     |     |     |     |     |
| Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | Gln | Glu | Asp | Pro | Glu |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Val | Gln | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Thr | Lys | Pro | Arg | Glu | Glu | Gln | Phe | Asn | Ser | Thr | Tyr | Arg | Val | Val | Ser |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Cys | Lys | Val | Ser | Asn | Lys | Gly | Leu | Pro | Ser | Ser | Ile | Glu | Lys | Thr | Ile |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Pro | Ser | Gln | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Arg | Leu | Thr | Val | Asp | Lys | Ser | Arg |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Trp | Gln | Glu | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala | Leu |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Leu | Gly |     |     |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |

<210> 36  
 <211> 1338  
 <212> ADN  
 <213> SECUENCIA ARTIFICIAL

<220>  
 <223> Construcción sintética

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 36                                                           |     |
| caggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc  | 60  |
| tcctgcaagg cttctggaca taccattagc agctatgctt acagctgggt gcgacaggcc  | 120 |
| cctggacaag ggcttgagtg gatgggagac atcatccctg cctatggctc accaaactac  | 180 |
| gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac  | 240 |
| atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagaggac  | 300 |
| ttcggcaaga attacgcgat ggacgtctgg ggccaaggga cccttgtcac cgtctcctca  | 360 |
| gcttctacca agggcccatc ggtcttcccg ctagcgccct gctccaggag cacctccgag  | 420 |
| agcacagccg ccctgggctg cctgggtcaag gactacttcc ccgaaccggt gacggtgtcg | 480 |
| tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca  | 540 |

ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacgaagacc 600  
tacacctgca acgtagatca caagcccagc aacaccaagg tggacaagag agttgagtcc 660  
aaatatggtc ccccatgccc accctgccc gcacctgagt ttctgggggg accatcagtc 720  
ttcctgttcc ccccaaaacc caaggacact ctcatgatct cccggacccc tgaggtcacg 780  
tgcggtggtg tggacgtgag ccaggaagac cccgagggtcc agttcaactg gtacgtggat 840  
ggcgtggagg tgcataatgc caagacaaag cgcggggagg agcagttcaa cagcacgtac 900  
cgtgtggtca gcgtcctcac cgtcctgcac caggactggc tgaacggcaa ggagtacaag 960  
tgcaaggtct ccaacaaagg cctcccgtcc tccatcgaga aaaccatctc caaagccaaa 1020  
gggcagcccc gagagccaca ggtgtacacc ctgcccccat cccaggagga gatgaccaag 1080  
aaccaggtca gcctgacctg cctggtcaaa ggcttctacc ccagcgacat cgccgtggag 1140  
tgggaaagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc 1200  
gacggctcct tcttcctcta cagcaggcta accgtggaca agagcaggtg gcaggagggg 1260  
aatgtcttct catgctccgt gatgcatgag gctctgcaca accactacac acagaagagc 1320  
ctctccctgt ctctgggt 1338

<210> 37  
<211> 120  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 37

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 His Thr Ile Ser Ser Tyr  
20 25 30  
  
Ala Tyr Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45  
  
Gly Asp Ile Ile Pro Ala Tyr Gly Ser Pro Asn Tyr Ala Gln Lys Phe  
50 55 60  
  
Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Lys Asn Tyr Ala Met Asp Val Trp Gly Gln  
100 105 110  
  
Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 38  
<211> 360  
<212> ADN  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 38

caggtgcagc tgggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60  
tcctgcaagg cttctggaca taccattagc agctatgctt acagctgggt gcgacaggcc 120  
cctggacaag ggcttgagtg gatgggagac atcatccctg cctatggctc accaaactac 180  
gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagaggac 300  
ttcggcaaga attacgcgat ggacgtctgg ggccaaggga cccttgtcac cgtctcctca 360

<210> 39  
<211> 215  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 39

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

<210> 40  
<211> 645

<212> ADN  
<213> SECUENCIA ARTIFICIAL  
  
<220>  
<223> Construcción sintética  
  
<400> 40  
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ctctcctgca gggccagtca gcatgttagc agccactact tagcttggtta ccagcagaaa 120  
cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatccca 180  
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
cctgaagatt ttgcagtgtta ttactgtcag cactatgggtc agtcacagtt cactttcggc 300  
caggggacca aggtggagat caaacggacc gtggctgcac catctgtctt catcttcccg 360  
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc 420  
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc 480  
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcacctg 540  
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt cacccatcag 600  
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgc 645

<210> 41  
<211> 108  
<212> PRT  
<213> SECUENCIA ARTIFICIAL  
  
<220>  
<223> Construcción sintética  
  
<400> 41  
  
Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15  
  
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln His Val Ser Ser His  
20 25 30  
  
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
35 40 45  
  
Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile Pro Asp Arg Phe Ser  
50 55 60  
  
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu  
65 70 75 80  
  
Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln His Tyr Gly Gln Ser Gln  
85 90 95  
  
Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 42  
<211> 324  
<212> ADN  
<213> SECUENCIA ARTIFICIAL  
  
<220>  
<223> Construcción sintética  
  
<400> 42  
gaaattgtgt tgacacagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60  
ctctcctgca gggccagtca gcatgttagc agccactact tagcttggtta ccagcagaaa 120

cctggccagg ctcccaggct cctcatctat ggtgcatcca gcagggccac tggcatcca 180  
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
cctgaagatt ttgcagtgta ttactgtcag cactatgggtc agtcacagtt cactttcggc 300  
caggggacca aggtggagat caaa 324

<210> 43  
<211> 12  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 43

Arg Ala Ser Gln His Val Asn Ser His Tyr Leu Ala  
1 5 10

<210> 44  
<211> 8  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 44

Tyr Ala Thr Arg Thr Arg Pro Thr  
1 5

<210> 45  
<211> 9  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 45

Gln His Tyr Gly Gln Ser Gln Phe Thr  
1 5

<210> 46  
<211> 215  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 46

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

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

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

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

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

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

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys  
210 215

<210> 47  
<211> 645  
<212> ADN  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 47  
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ctctcctgca gggccagtca gcatgttaac agccactact tagcttggtta ccagcagaaa 120  
cctggccagg ctcccaggct cctcatctat gctacaagaa ccaggccaac tggcatccca 180  
gacagggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
cctgaagatt ttgcagtgta ttactgtcag cactatgggtc agtcacagtt cactttcggc 300  
caggggacca aggtggagat caaacggacc gtggctgcac catctgtctt catcttcccg 360  
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc 420  
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggttaactcc 480  
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg 540  
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag 600  
ggcctgagct cgcccgtcac aaagagcttc aacagggggag agtgc 645

<210> 48  
<211> 108  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 48

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

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

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

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

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

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

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

<210> 49  
<211> 324  
<212> ADN  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 49  
gaaattgtgt tgacacagtc tccaggcacc ctgtctttgt ctccagggga aagagccacc 60  
  
ctctcctgca gggccagtca gcatgttaac agccactact tagcttggtta ccagcagaaa 120  
  
cctggccagg ctcccaggct cctcatctat gctacaagaa ccaggccaac tggcatccca 180  
  
gacaggttca gtggcagtgg gtctgggaca gacttcactc tcaccatcag cagactggag 240  
  
cctgaagatt ttgcagtgta ttactgtcag cactatgggc agtcacagtt cactttcggc 300  
  
caggggacca aggtggagat caaa 324

<210> 50  
<211> 449  
<212> PRT  
<213> SECUENCIA ARTIFICIAL

<220>  
<223> Construcción sintética

<400> 50

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 His Thr Ile Ser Ser Tyr  
20 25 30

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

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

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 | Glu | Asp | Phe | Gly | Lys | Asn | Tyr | Ala | Met | Asp | Val | Trp | Gly | Gln |  |
|     |     |     | 100 |     |     |     | 105 |     |     |     |     |     | 110 |     |     |  |
| Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Ala | Ser | Thr | Lys | Gly | Pro | Ser | Val |  |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |  |
| Phe | Pro | Leu | Ala | Pro | Ser | Ser | Lys | Ser | Thr | Ser | Gly | Gly | Thr | Ala | Ala |  |
|     |     | 130 |     |     |     | 135 |     |     |     |     |     | 140 |     |     |     |  |
| Leu | Gly | Cys | Leu | Val | Lys | Asp | Tyr | Phe | Pro | Glu | Pro | Val | Thr | Val | Ser |  |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     | 160 |     |     |  |
| Trp | Asn | Ser | Gly | Ala | Leu | Thr | Ser | Gly | Val | His | Thr | Phe | Pro | Ala | Val |  |
|     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |     |  |
| Leu | Gln | Ser | Ser | Gly | Leu | Tyr | Ser | Leu | Ser | Ser | Val | Val | Thr | Val | Pro |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ser | Ser | Ser | Leu | Gly | Thr | Gln | Thr | Tyr | Ile | Cys | Asn | Val | Asn | His | Lys |  |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |  |
| Pro | Ser | Asn | Thr | Lys | Val | Asp | Lys | Lys | Val | Glu | Pro | Lys | Ser | Cys | Asp |  |
|     |     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |  |
| Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | Gly |  |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     | 240 |     |     |  |
| Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile |  |
|     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |     |  |
| Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |
| Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His |  |
|     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |  |
| Asn | Ala | Lys | Thr | Lys | Pro | Arg | Glu | Glu | Gln | Tyr | Asn | Ser | Thr | Tyr | Arg |  |
|     |     | 290 |     |     |     | 295 |     |     |     |     |     | 300 |     |     |     |  |
| Val | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys |  |
| 305 |     |     |     | 310 |     |     |     |     |     | 315 |     |     | 320 |     |     |  |
| Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu |  |
|     |     |     | 325 |     |     |     | 330 |     |     |     |     |     | 335 |     |     |  |
| Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |  |
| Thr | Leu | Pro | Pro | Ser | Arg | Asp | Glu | Leu | Thr | Lys | Asn | Gln | Val | Ser | Leu |  |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |  |
| Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp |  |
|     |     | 370 |     |     |     | 375 |     |     |     |     |     | 380 |     |     |     |  |
| Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     | 400 |     |     |  |
| Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp |  |
|     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |     |  |
| Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His |  |

420

425

430

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro

435440445

Gly

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120

cctggacaag ggcttgagtg gatgggagac atcatccctg cctatggctc accaaactac

180

gcacagaagt tccagggcag agtcacgatt accgcggacg aatccacgag cacagcctac

240

atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagagaggac

300

ttcggcaaga attacgcgat ggacgtctgg ggccaaggga cccttgtcac cgtctcctca

360

gctttacca agggcccatc ggtcttcccg ctagcaccct cctccaagag cacctctggg

420

ggcacagcgg ccctgggctg cctggtaag gactacttcc ccgaaccggt gacggtgtcg

480

tggaaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca

540

ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg caccagacc

600

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660

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720

ccgtcagtct tcctcttccc cccaaaaccc aaggacacc tcctgatctc ccggaccct

780

gaggtcacat gcgtgggtgt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg

840

tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac

900

agcacgtacc gtgtgggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag

960

gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc

1020

aaagccaaag ggcagccccc agaaccacag gtgtacaccc tgccccatc ccgggacgag

1080

ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc

1140

gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcccccggtg

1200

ctggactccg acggctcctt cttcctctat agcaagctca ccgtggacaa gagcaggtgg

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1320

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1347

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151015

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

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

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Lys Asn Tyr Ala Met Asp Val Trp Gly Gln  
100 105 110

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

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

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

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

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

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

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

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly  
225 230 235 240

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

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Ser Val Ser His Glu  
260 265 270

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

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

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

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

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

340

345

350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
355360365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
370375380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
385390395400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
405410415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
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Gly Lys  
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120

ccaggccagg gattggaatg gatgggagac ataatcccag catacggatc acctaactac

180

gcacagaagt ttcaggggag agtgacaatt acagccgacg agtctactag cactgcttac

240

atggagttgt cttcacttcg gtcagaggat acagcagttt actattgtgc cagggaggat

300

ttcgggaaaa attatgctat ggatgtatgg ggtcagggca ccctggttac tgtatcatct

360

gctagcacca agggcccatc ggtcttcccc ctggcaccct cctccaagag cacctctggg

420

ggcacagcgg ccctgggctg cctggtcaag gactacttcc ccgaaccggt gacggtgtcg

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600

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660

aaatcttggt acaaaactca cacatgcca ccgtgcccag cacctgaagc cgccggggga

720

ccgtcagtct tcctcttccc cccaaaaccc aaggacacc tcatgatctc ccggaccct

780

gaggtcacat gcgtggtggt gtccgtgagc cacgaagacc ctgaggtcaa gttcaactgg

840

tatgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac

900

agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aagactggct gaatggcaag

960

gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc

1020

aaagccaaag ggcagccccg agaaccacag gtgtacaccc tgccccatc ccgggaggag

1080

atgaccaaga accaagtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc

1140

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1200

ctggactccg acggctcctt cttcctctat tccaagctca ccgtggacaa gagcaggtgg

1260

cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 1320  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Ile Ser Ser Tyr  
20 25 30  
  
Ala Tyr Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45  
  
Gly Gly Ile Ile Pro Ile Phe Asp Thr Ala Asn Tyr Ala Gln Lys Phe  
50 55 60  
  
Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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 Glu Asp Phe Gly Tyr Asn Tyr Ala Met Asp Val Trp Gly Gln  
100 105 110  
  
Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val  
115 120 125  
  
Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala  
130 135 140  
  
Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser  
145 150 155 160  
  
Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val  
165 170 175  
  
Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro  
180 185 190  
  
Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys  
195 200 205  
  
Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp  
210 215 220  
  
Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly  
225 230 235 240  
  
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
245 250 255  
  
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Ser Val Ser His Glu

260

265

270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
275280285

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
290295300

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
305310315320

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
325330335

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
340345350

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
355360365

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
370375380

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
385390395400

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
405410415

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
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Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
435440445

Gly Lys  
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ccaggacagg gcttggaatg gatgggcggc ataataccca tattcgacac agccaactac 180  
gctcaaaaat ttcaggggag agtgactata actgcagacg agagcactag caccgcttac 240  
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gctagcacca agggcccatc ggtcttcccc ctggcaccct cctccaagag cacctctggg 420  
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ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg caccagacc 600  
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aaatcttgtg acaaaactca cacatgcccc ccgtgcccag cacctgaagc cgccggggga 720  
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggaccct 780  
gaggtcacat gcgtggtggt gtccgtgagc cacgaagacc ctgaggtcaa gttcaactgg 840  
tatgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 900  
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aagactggct gaatggcaag 960  
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 1020  
aaagccaaag ggcagccccc agaaccacag gtgtacaccc tgccccatc ccgggaggag 1080  
atgaccaaga accaagtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 1140  
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ctggactccg acggctcctt cttcctctat tccaagctca ccgtggacaa gagcaggtgg 1260  
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<400> 56

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Glu Val Arg Pro Glu Glu Pro Leu Val Val Lys Val Glu Glu Gly Asp  
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Asn Ala Val Leu Gln Cys Leu Lys Gly Thr Ser Asp Gly Pro Thr Gln  
35 40 45  
  
Gln Leu Thr Trp Ser Arg Glu Ser Pro Leu Lys Pro Phe Leu Lys Leu  
50 55 60  
  
Ser Leu Gly Leu Pro Gly Leu Gly Ile His Met Arg Pro Leu Ala Ile  
65 70 75 80  
  
Trp Leu Phe Ile Phe Asn Val Ser Gln Gln Met Gly Gly Phe Tyr Leu  
85 90 95  
  
Cys Gln Pro Gly Pro Pro Ser Glu Lys Ala Trp GlnPro Gly Trp Thr  
100 105 110  
  
Val Asn Val Glu Gly Ser Gly Glu Leu Phe Arg Trp Asn Val Ser Asp  
115 120 125  
  
Leu Gly Gly Leu Gly Cys Gly Leu Lys Asn Arg Ser Ser Glu Gly Pro  
130 135 140  
  
Ser Ser Pro Ser Gly Lys Leu Met Ser Pro Lys Leu Tyr Val Trp Ala  
145 150 155 160  
  
Lys Asp Arg Pro Glu Ile Trp Glu Gly Glu Pro Pro Cys Leu Pro Pro  
165 170 175  
  
Arg Asp Ser Leu Asn Gln Ser Leu Ser Gln Asp Leu Thr Met Ala Pro  
180 185 190

|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |        |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|
| Gly 195 | Ser 200 | Thr 205 | Leu 210 | Trp 215 | Leu 220 | Ser 225 | Thr 230 | His 235 | Val 240 | His 245 | Pro 250 | Lys 255 | Gly 260 | Pro 265 | Lys 270 | Ser 275 | Val 280 | Ser 285 | Leu 290 | Trp 295 | Ala 300 | Arg 305 | His 310 | Leu 315 | Gln 320 | Thr 325 | Pro 330 | Asn 335 | Gly 340 | Val 345 | Arg 350 | Leu 355 | Trp 360 | Ala 365 | Pro 370 | Thr 375 | Gly 380 | Ala 385 | Leu 390 | Asp 395 | Gly 400 | Glu 405 | Gly 410 | Tyr 415 | Ser 420 | Asp 425 | Asn 430 | Leu 435 | Gly 440 | Asp 445 | Glu 450 | Ser 455 | Ala 460 | Thr 465 | Met 470 | Arg 475 | Val 480 | Pro 485 | Asp 490 | Met 495 | Arg 500 | Gly 505 | Ile 510 | Leu 515 | Tyr 520 | Ala 525 | Ala 530 | Pro 535 | Asp 540 | Glu 545 | Gly 550 | His 555 | Asn 560 | Pro 565 | Gly 570 | Pro 575 | Gly 580 | Pro 585 | Val 590 | Ala 595 | Arg 600 | Ser 605 | Asn 610 | Met 615 | Val 620 | Pro 625 | Asp 630 | Gly 635 | Trp 640 | Ala 645 | Ser 650 | Thr 655 | Gln 660 | Pro 665 | Asp 670 | Leu 675 | Ser 680 | Val 685 | Met 690 | Arg 695 | His 700 | Pro 705 | Ala 710 | Val 715 | Leu 720 | Ser 725 | Thr 730 | Ala 735 | Arg 740 | Pro 745 | Val 750 | Met 755 | Leu 760 | Ser 765 | Thr 770 | Ala 775 | Val 780 | Pro 785 | Arg 790 | His 795 | Pro 800 | Val 805 | Leu 810 | Ser 815 | Thr 820 | Ala 825 | Arg 830 | Pro 835 | Val 840 | Met 845 | Leu 850 | Ser 855 | Thr 860 | Ala 865 | Val 870 | Pro 875 | Arg 880 | His 885 | Pro 890 | Val 895 | Leu 900 | Ser 905 | Thr 910 | Ala 915 | Val 920 | Pro 925 | Arg 930 | His 935 | Pro 940 | Val 945 | Leu 950 | Ser 955 | Thr 960 | Ala 965 | Val 970 | Pro 975 | Arg 980 | His 985 | Pro 990 | Val 995 | Leu 1000 | Ser 1005 | Thr 1010 | Ala 1015 | Val 1020 | Pro 1025 | Arg 1030 | His 1035 | Pro 1040 | Val 1045 | Leu 1050 | Ser 1055 | Thr 1060 | Ala 1065 | Val 1070 | Pro 1075 | Arg 1080 | His 1085 | Pro 1090 | Val 1095 | Leu 1100 | Ser 1105 | Thr 1110 | Ala 1115 | Val 1120 | Pro 1125 | Arg 1130 | His 1135 | Pro 1140 | Val 1145 | Leu 1150 | Ser 1155 | Thr 1160 | Ala 1165 | Val 1170 | Pro 1175 | Arg 1180 | His 1185 | Pro 1190 | Val 1195 | Leu 1200 | Ser 1205 | Thr 1210 | Ala 1215 | Val 1220 | Pro 1225 | Arg 1230 | His 1235 | Pro 1240 | Val 1245 | Leu 1250 | Ser 1255 | Thr 1260 | Ala 1265 | Val 1270 | Pro 1275 | Arg 1280 | His 1285 | Pro 1290 | Val 1295 | Leu 1300 | Ser 1305 | Thr 1310 | Ala 1315 | Val 1320 | Pro 1325 | Arg 1330 | His 1335 | Pro 1340 | Val 1345 | Leu 1350 | Ser 1355 | Thr 1360 | Ala 1365 | Val 1370 | Pro 1375 | Arg 1380 | His 1385 | Pro 1390 | Val 1395 | Leu 1400 | Ser 1405 | Thr 1410 | Ala 1415 | Val 1420 | Pro 1425 | Arg 1430 | His 1435 | Pro 1440 | Val 1445 | Leu 1450 | Ser 1455 | Thr 1460 | Ala 1465 | Val 1470 | Pro 1475 | Arg 1480 | His 1485 | Pro 1490 | Val 1495 | Leu 1500 | Ser 1505 | Thr 1510 | Ala 1515 | Val 1520 | Pro 1525 | Arg 1530 | His 1535 | Pro 1540 | Val 1545 | Leu 1550 | Ser 1555 | Thr 1560 | Ala 1565 | Val 1570 | Pro 1575 | Arg 1580 | His 1585 | Pro 1590 | Val 1595 | Leu 1600 | Ser 1605 | Thr 1610 | Ala 1615 | Val 1620 | Pro 1625 | Arg 1630 | His 1635 | Pro 1640 | Val 1645 | Leu 1650 | Ser 1655 | Thr 1660 | Ala 1665 | Val 1670 | Pro 1675 | Arg 1680 | His 1685 | Pro 1690 | Val 1695 | Leu 1700 | Ser 1705 | Thr 1710 | Ala 1715 | Val 1720 | Pro 1725 | Arg 1730 | His 1735 | Pro 1740 | Val 1745 | Leu 1750 | Ser 1755 | Thr 1760 | Ala 1765 | Val 1770 | Pro 1775 | Arg 1780 | His 1785 | Pro 1790 | Val 1795 | Leu 1800 | Ser 1805 | Thr 1810 | Ala 1815 | Val 1820 | Pro 1825 | Arg 1830 | His 1835 | Pro 1840 | Val 1845 | Leu 1850 | Ser 1855 | Thr 1860 | Ala 1865 | Val 1870 | Pro 1875 | Arg 1880 | His 1885 | Pro 1890 | Val 1895 | Leu 1900 | Ser 1905 | Thr 1910 | Ala 1915 | Val 1920 | Pro 1925 | Arg 1930 | His 1935 | Pro 1940 | Val 1945 | Leu 1950 | Ser 1955 | Thr 1960 | Ala 1965 | Val 1970 | Pro 1975 | Arg 1980 | His 1985 | Pro 1990 | Val 1995 | Leu 2000 | Ser 2005 | Thr 2010 | Ala 2015 | Val 2020 | Pro 2025 | Arg 2030 | His 2035 | Pro 2040 | Val 2045 | Leu 2050 | Ser 2055 | Thr 2060 | Ala 2065 | Val 2070 | Pro 2075 | Arg 2080 | His 20 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|

|       |              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| 515   | 520          | 525 |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Ala   | Asp          | Ser | Tyr | Glu | Asn | Met | Asp | Asn | Pro | Asp | Gly | Pro | Asp | Pro | Ala |  |  |  |  |
| 530   |              |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |  |  |
| Trp   | Gly          | Gly | Gly | Gly | Arg | Met | Gly | Thr | Trp | Ser | Thr | Arg |     |     |     |  |  |  |  |
| 545   |              |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     |     |  |  |  |  |
| <210> | 57           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| <211> | 556          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| <212> | PRT          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| <213> | Homo sapiens |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| <400> | 57           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Met   | Pro          | Pro | Pro | Arg | Leu | Leu | Phe | Phe | Leu | Leu | Phe | Leu | Thr | Pro | Met |  |  |  |  |
| 1     |              |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |  |  |  |  |
| Glu   | Val          | Arg | Pro | Glu | Glu | Pro | Leu | Val | Val | Lys | Val | Glu | Glu | Gly | Asp |  |  |  |  |
|       |              |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |  |  |  |  |
| Asn   | Ala          | Val | Leu | Gln | Cys | Leu | Lys | Gly | Thr | Ser | Asp | Gly | Pro | Thr | Gln |  |  |  |  |
|       |              | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |  |  |  |  |
| Gln   | Leu          | Thr | Trp | Ser | Arg | Glu | Ser | Pro | Leu | Lys | Pro | Phe | Leu | Lys | Leu |  |  |  |  |
|       | 50           |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |  |  |  |  |
| Ser   | Leu          | Gly | Leu | Pro | Gly | Leu | Gly | Ile | His | Met | Arg | Pro | Leu | Ala | Ile |  |  |  |  |
| 65    |              |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |  |  |  |  |
| Trp   | Leu          | Phe | Ile | Phe | Asn | Val | Ser | Gln | Gln | Met | Gly | Gly | Phe | Tyr | Leu |  |  |  |  |
|       |              |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |  |  |  |  |
| Cys   | Gln          | Pro | Gly | Pro | Pro | Ser | Glu | Lys | Ala | Trp | Gln | Pro | Gly | Trp | Thr |  |  |  |  |
|       |              |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |  |  |  |  |
| Val   | Asn          | Val | Glu | Gly | Ser | Gly | Glu | Leu | Phe | Arg | Trp | Asn | Val | Ser | Asp |  |  |  |  |
|       |              | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |  |  |  |  |
| Leu   | Gly          | Gly | Leu | Gly | Cys | Gly | Leu | Lys | Asn | Arg | Ser | Ser | Glu | Gly | Pro |  |  |  |  |
|       | 130          |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |  |  |  |  |
| Ser   | Ser          | Pro | Ser | Gly | Lys | Leu | Met | Ser | Pro | Lys | Leu | Tyr | Val | Trp | Ala |  |  |  |  |
| 145   |              |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |  |  |
| Lys   | Asp          | Arg | Pro | Glu | Ile | Trp | Glu | Gly | Glu | Pro | Pro | Cys | Leu | Pro | Pro |  |  |  |  |
|       |              |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |  |  |  |  |
| Arg   | Asp          | Ser | Leu | Asn | Gln | Ser | Leu | Ser | Gln | Asp | Leu | Thr | Met | Ala | Pro |  |  |  |  |
|       |              |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |  |  |  |  |
| Gly   | Ser          | Thr | Leu | Trp | Leu | Ser | Cys | Gly | Val | Pro | Pro | Asp | Ser | Val | Ser |  |  |  |  |
|       |              | 195 |     |     |     |     | 200 |     |     |     |     |     | 205 |     |     |  |  |  |  |
| Arg   | Gly          | Pro | Leu | Ser | Trp | Thr | His | Val | His | Pro | Lys | Gly | Pro | Lys | Ser |  |  |  |  |
|       | 210          |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |  |  |
| Leu   | Leu          | Ser | Leu | Glu | Leu | Lys | Asp | Asp | Arg | Pro | Ala | Arg | Asp | Met | Trp |  |  |  |  |
| 225   |              |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |  |
| Val   | Met          | Glu | Thr | Gly | Leu | Leu | Leu | Pro | Arg | Ala | Thr | Ala | Gln | Asp | Ala |  |  |  |  |
|       |              |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |  |  |

Gly Lys Tyr Tyr Cys His Arg Gly Asn Leu Thr Met Ser Phe His Leu  
 260 265 270

Glu Ile Thr Ala Arg Pro Val Leu Trp His Trp Leu Leu Arg Thr Gly  
 275 280 285

Gly Trp Lys Val Ser Ala Val Thr Leu Ala Tyr Leu Ile Phe Cys Leu  
 290 295 300

Cys Ser Leu Val Gly Ile Leu His Leu Gln Arg Ala Leu Val Leu Arg  
 305 310 315 320

Arg Lys Arg Lys Arg Met Thr Asp Pro Thr Arg Arg Phe Phe Lys Val  
 325 330 335

Thr Pro Pro Pro Gly Ser Gly Pro Gln Asn Gln Tyr Gly Asn Val Leu  
 340 345 350

Ser Leu Pro Thr Pro Thr Ser Gly Leu Gly Arg Ala Gln Arg Trp Ala  
 355 360 365

Ala Gly Leu Gly Gly Thr Ala Pro Ser Tyr Gly Asn Pro Ser Ser Asp  
 370 375 380

Val Gln Ala Asp Gly Ala Leu Gly Ser Arg Ser Pro Pro Gly Val Gly  
 385 390 395 400

Pro Glu Glu Glu Glu Gly Glu Gly Tyr Glu Glu Pro Asp Ser Glu Glu  
 405 410 415

Asp Ser Glu Phe Tyr Glu Asn Asp Ser Asn Leu Gly Gln Asp Gln Leu  
 420 425 430

Ser Gln Asp Gly Ser Gly Tyr Glu Asn Pro Glu Asp Glu Pro Leu Gly  
 435 440 445

Pro Glu Asp Glu Asp Ser Phe Ser Asn Ala Glu Ser Tyr Glu Asn Glu  
 450 455 460

Asp Glu Glu Leu Thr Gln Pro Val Ala Arg Thr Met Asp Phe Leu Ser  
 465 470 475 480

Pro His Gly Ser Ala Trp Asp Pro Ser Arg Glu Ala Thr Ser Leu Gly  
 485 490 495

Ser Gln Ser Tyr Glu Asp Met Arg Gly Ile Leu Tyr Ala Ala Pro Gln  
 500 505 510

Leu Arg Ser Ile Arg Gly Gln Pro Gly Pro Asn His Glu Glu Asp Ala  
 515 520 525

Asp Ser Tyr Glu Asn Met Asp Asn Pro Asp Gly Pro Asp Pro Ala Trp  
 530 535 540

Gly Gly Gly Gly Arg Met Gly Thr Trp Ser Thr Arg  
 545 550 555