

500002596ENSP_Sequences.txt
LISTA DE SECUENCIAS

<110> Immunocore Limited

<120> Receptores de células T

<130> P101450WO

<150> 1606009.7

<151> 2016-04-08

<160> 81

<170> PatentIn versión 3.5

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Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
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Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
130 135 140

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

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

Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser Phe Leu
85 90 95

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

Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala
115 120 125

Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys Ala Thr
130 135 140

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

Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Ser Thr Asp Pro
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Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Cys Leu
180 185 190

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

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

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Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
115 120 125

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

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser Phe Leu
85 90 95

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

Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu Val Ala
115 120 125

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

Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys Thr Asp Pro
165 170 175

Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr Ala Leu
180 185 190

Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro Arg Asn
195 200 205

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

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Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

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

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
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Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
      20      25      30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
      35      40      45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50      55      60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65      70      75      80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
      85      90      95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
      20      25      30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
      35      40      45

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Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Asn
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Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Asn
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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      20      25      30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
      35      40      45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65      70      75      80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
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Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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      20      25      30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
      35      40      45

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500002596ENSP_Sequences.txt

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

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
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Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Ser
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
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Pro

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Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20     25     30
Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35     40     45
Ile Leu Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50     55     60
Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65     70     75     80
Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gln
85     90     95
Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100    105    110

Pro

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Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu Asn Met
20     25     30
Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35     40     45

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Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

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

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
          35          40          45

Ser Tyr Asp Val Lys Leu Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
          50          55          60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65          70          75          80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
          100          105          110

Leu Thr Val Thr
          115

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

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
          35          40          45

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500002596ENSP_Sequences.txt

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

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

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
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Gly Gly Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
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<223> cadena alfa (a19ka)

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500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
115 120 125

Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
130 135 140

Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys
145 150 155 160

Cys Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val
165 170 175

Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Asn Asn
180 185 190

Ser Ile Ile Pro Glu Asp Thr
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Ala Asn Gln Val Glu Gln Ser Pro Gln Ser Leu Ile Ile Leu Glu Gly
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Página 19

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Asn
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
115 120 125

Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
130 135 140

Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys
145 150 155 160

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

500002596ENSP_Sequences.txt

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gln
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
115 120 125

Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
130 135 140

Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys
145 150 155 160

Cys Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val
165 170 175

Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Asn Asn
180 185 190

Ser Ile Ile Pro Glu Asp Thr
195

<210> 41

<211> 199

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa (a13kaLS)

<400> 41

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

500002596ENSP_Sequences.txt

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Ser
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro Tyr Ile Gln Lys Pro Asp Pro Ala Val Tyr Gln Leu Arg Asp Ser
115 120 125

Lys Ser Ser Asp Lys Ser Val Cys Leu Phe Thr Asp Phe Asp Ser Gln
130 135 140

Thr Asn Val Ser Gln Ser Lys Asp Ser Asp Val Tyr Ile Thr Asp Lys
145 150 155 160

Cys Val Leu Asp Met Arg Ser Met Asp Phe Lys Ser Asn Ser Ala Val
165 170 175

Ala Trp Ser Asn Lys Ser Asp Phe Ala Cys Ala Asn Ala Phe Asn Asn
180 185 190

Ser Ile Ile Pro Glu Asp Thr
195

<210> 42
<211> 504
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta (b14)

<400> 42

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

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

500002596ENSP_Sequences.txt

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

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

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

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

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

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

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

Gln Lys Phe Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn
195 200 205

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

Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe
225 230 235 240

Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
245 250 255

Gly Ser Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg
260 265 270

Thr Gly Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser
275 280 285

500002596ENSP_Sequences.txt

Lys Met Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile
290 295 300

Tyr Phe Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu
305 310 315 320

Gly Tyr Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu
325 330 335

Glu Ser Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser
340 345 350

Ser Asp Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly
355 360 365

Thr Arg Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu
370 375 380

Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys
385 390 395 400

Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu
405 410 415

Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys Thr
420 425 430

Asp Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr
435 440 445

Ala Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro
450 455 460

Arg Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn
465 470 475 480

Asp Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser
485 490 495

Ala Glu Ala Trp Gly Arg Ala Asp
500

<210> 43

<211> 504

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena beta (b14L)

<400> 43

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

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

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

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

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

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

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

Gln Lys Phe Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn
195 200 205

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

Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe
225 230 235 240

500002596ENSP_Sequences.txt

Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
 245 250 255
 Gly Ser Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg
 260 265 270
 Thr Gly Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser
 275 280 285
 Lys Met Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile
 290 295 300
 Tyr Phe Ser Tyr Asp Val Lys Leu Lys Glu Lys Gly Asp Ile Pro Glu
 305 310 315 320
 Gly Tyr Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu
 325 330 335
 Glu Ser Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser
 340 345 350
 Ser Asp Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly
 355 360 365
 Thr Arg Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu
 370 375 380
 Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys
 385 390 395 400
 Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu
 405 410 415
 Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys Thr
 420 425 430
 Asp Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr
 435 440 445
 Ala Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro
 450 455 460
 Arg Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn
 465 470 475 480
 Asp Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser
 485 490 495

500002596ENSP_Sequences.txt

Ala Glu Ala Trp Gly Arg Ala Asp
500

<210> 44
<211> 504
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta (b21)

<400> 44

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

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

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

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

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

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

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

500002596ENSP_Sequences.txt

Gln Lys Phe Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn
195 200 205

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

Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe
225 230 235 240

Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
245 250 255

Gly Ser Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg
260 265 270

Thr Gly Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu
275 280 285

Asn Met Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile
290 295 300

Tyr Phe Ser Arg Phe Ala Thr Gly Lys Glu Lys Gly Asp Ile Pro Glu
305 310 315 320

Gly Tyr Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu
325 330 335

Glu Ser Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser
340 345 350

Ser Asp Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly
355 360 365

Thr Arg Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu
370 375 380

Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys
385 390 395 400

Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu
405 410 415

Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys Thr
420 425 430

Asp Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr
435 440 445

500002596ENSP_Sequences.txt

Ala Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro
450 455 460

Arg Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn
465 470 475 480

Asp Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser
485 490 495

Ala Glu Ala Trp Gly Arg Ala Asp
500

<210> 45
<211> 504
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta (b21L)

<400> 45

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Gly Asn Thr Leu Pro Trp
85 90 95

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

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

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

500002596ENSP_Sequences.txt

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

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

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

Gln Lys Phe Lys Asp Arg Phe Thr Ile Ser Val Asp Lys Ser Lys Asn
195 200 205

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

Tyr Tyr Cys Ala Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe
225 230 235 240

Asp Val Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly
245 250 255

Gly Ser Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg
260 265 270

Thr Gly Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu
275 280 285

Asn Met Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile
290 295 300

Tyr Phe Ser Arg Phe Ala Thr Gly Lys Glu Lys Gly Asp Ile Pro Glu
305 310 315 320

Gly Tyr Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu
325 330 335

Glu Ser Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser
340 345 350

Ser Asp Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly
355 360 365

Thr Arg Leu Thr Val Thr Glu Asp Leu Lys Asn Val Phe Pro Pro Glu
370 375 380

Val Ala Val Phe Glu Pro Ser Glu Ala Glu Ile Ser His Thr Gln Lys
385 390 395 400

500002596ENSP_Sequences.txt

Ala Thr Leu Val Cys Leu Ala Thr Gly Phe Tyr Pro Asp His Val Glu
405 410 415

Leu Ser Trp Trp Val Asn Gly Lys Glu Val His Ser Gly Val Cys Thr
420 425 430

Asp Pro Gln Pro Leu Lys Glu Gln Pro Ala Leu Asn Asp Ser Arg Tyr
435 440 445

Ala Leu Ser Ser Arg Leu Arg Val Ser Ala Thr Phe Trp Gln Asp Pro
450 455 460

Arg Asn His Phe Arg Cys Gln Val Gln Phe Tyr Gly Leu Ser Glu Asn
465 470 475 480

Asp Glu Trp Thr Gln Asp Arg Ala Lys Pro Val Thr Gln Ile Val Ser
485 490 495

Ala Glu Ala Trp Gly Arg Ala Asp
500

<210> 46
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a36)

<400> 46

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gln
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 47
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a37)

<400> 47

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Leu Thr Tyr Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gln
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 48
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a38)

<400> 48

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ala Gln
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 49

<211> 113

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa mutante (a39)

<400> 49

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ser Gln
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 50
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a40)

<400> 50

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gly
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 51
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a41)

<400> 51

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Ser Ala Gln
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 52

<211> 113

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa mutante (a30)

<400> 52

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Asp Tyr Ala Ile Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 53
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a42)

<400> 53

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 54
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a31)

<400> 54

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 55

<211> 113

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa mutante (a43)

<400> 55

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 56
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a32)

<400> 56

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Leu Asp Tyr Ala Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 57
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a44)

<400> 57

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ala Asp
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 58

<211> 113

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa mutante (a33)

<400> 58

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ser Asp
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 59
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a45)

<400> 59

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Gly
85 90 95

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 60
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (a34)

<400> 60

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn Arg Ala Asp
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 61
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (awTka)

<400> 61

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
85 90 95

500002596ENSP_Sequences.txt

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 62
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (aM50L)

<400> 62

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

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

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 63
<211> 113
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena alfa mutante (aS95A)

<400> 63

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

500002596ENSP_Sequences.txt

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ala Gly
85 90 95

Gly Ser Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 64

<211> 113

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena alfa mutante (aS98L)

<400> 64

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

Lys Asn Val Thr Leu Gln Cys Asn Tyr Thr Val Ser Pro Phe Ser Asn
20 25 30

Leu Arg Trp Tyr Lys Gln Asp Thr Gly Arg Gly Pro Val Ser Leu Thr
35 40 45

Ile Met Thr Phe Ser Glu Asn Thr Lys Ser Asn Gly Arg Tyr Thr Ala
50 55 60

Thr Leu Asp Ala Asp Thr Lys Gln Ser Ser Leu His Ile Thr Ala Ser
65 70 75 80

Gln Leu Ser Asp Ser Ala Ser Tyr Ile Cys Val Val Asn His Ser Gly
85 90 95

500002596ENSP_Sequences.txt

Gly Leu Tyr Ile Pro Thr Phe Gly Arg Gly Thr Ser Leu Ile Val His
100 105 110

Pro

<210> 65
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b41)

<400> 65

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 66
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b42)

<400> 66

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 67
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b43)

<400> 67

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

500002596ENSP_Sequences.txt

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 68
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b44)

<400> 68

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 69
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b45)

<400> 69

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 70

<211> 116

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena beta mutante (b46)

<400> 70

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Leu Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

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

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

500002596ENSP_Sequences.txt

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 71
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b32)

<400> 71

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Pro Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 72
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b33)

<400> 72

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Asp Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 73

<211> 116

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena beta mutante (b34)

<400> 73

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro His Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

500002596ENSP_Sequences.txt

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 74
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b35)

<400> 74

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Glu Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 75
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b36)

<400> 75

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 76

<211> 116

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena beta mutante (b37)

<400> 76

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

500002596ENSP_Sequences.txt

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 77
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b38)

<400> 77

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Gln Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 78
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (b39)

<400> 78

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

Met Asn Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 79

<211> 116

<212> PRT

<213> Secuencia artificial

<220>

<223> cadena beta mutante (b40)

<400> 79

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Ala Pro Leu Ser Lys Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

500002596ENSP_Sequences.txt

Gln Thr Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
100 105 110

Leu Thr Val Thr
115

<210> 80
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (bL96D)

<400> 80

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu Asn Met
20 25 30

Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
35 40 45

Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
50 55 60

Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
65 70 75 80

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

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

Leu Thr Val Thr
115

<210> 81
<211> 116
<212> PRT
<213> Secuencia artificial

<220>
<223> cadena beta mutante (bm97Q)

<400> 81

Asp Val Lys Val Thr Gln Ser Ser Arg Tyr Leu Val Lys Arg Thr Gly
1 5 10 15

500002596ENSP_Sequences.txt

Glu Lys Val Phe Leu Glu Cys Val Gln Asp Met Asp His Glu Asn Met
 20 25 30
 Phe Trp Tyr Arg Gln Asp Pro Gly Leu Gly Leu Arg Leu Ile Tyr Phe
 35 40 45
 Ser Tyr Asp Val Lys Met Lys Glu Lys Gly Asp Ile Pro Glu Gly Tyr
 50 55 60
 Ser Val Ser Arg Glu Lys Lys Glu Arg Phe Ser Leu Ile Leu Glu Ser
 65 70 75 80
 Ala Ser Thr Asn Gln Thr Ser Met Tyr Leu Cys Ala Ser Ser Phe Leu
 85 90 95
 Gln Thr Ser Gly Asp Pro Tyr Glu Gln Tyr Phe Gly Pro Gly Thr Arg
 100 105 110
 Leu Thr Val Thr
 115