

## SEQUENCE LISTING

<110> AMGEN RESEARCH (MUNICH) GMBH

<120> ANTIBODY CONSTRUCTS FOR DLL3 AND CD3

<130> AMG15473PCT

<150> US 62/199,930

<151> 2015-07-31

<150> US 62/290,896

<151> 2016-02-03

<160> 554

<170> PatentIn version 3.5

<210> 1

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<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

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Asp Tyr Gly Ile His

1 5

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<213> Artificial Sequence

<220>

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Val Ile Ser Tyr His Gly Ser Asn Lys Tyr Tyr Ala Arg Ser Val Lys

1 5 10 15

Gly

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Glu Ile Pro Phe Gly Met Asp Val  
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Arg Ser Ser Gln Ser Leu Leu His Ser Asp Gly Tyr Asn Tyr Leu Asp  
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Leu Gly Ser Asn Arg Ala Ser  
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Met Gln Ala Leu Gln Thr Pro Leu Thr  
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<400> 7

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

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

Ala Val Ile Ser Tyr His Gly Ser Asn Lys Tyr Tyr Ala Arg Ser Val  
50 55 60

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

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

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

Val Thr Val Ser Ser  
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<400> 8

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

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

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

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

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

Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys  
 100 105 110

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

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

Ala Val Ile Ser Tyr His Gly Ser Asn Lys Tyr Tyr Ala Arg Ser Val  
 50 55 60

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

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

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

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 115 120 125

Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro  
 130 135 140

Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 145 150 155 160

Leu Leu His Ser Asp Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
 165 170 175

Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala  
 180 185 190

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe

195

200

205

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

Val Asp Ile Lys

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

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

Ala Val Ile Ser Tyr His Gly Ser Asn Lys Tyr Tyr Ala Arg Ser Val  
 50 55 60

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

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

7

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

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
115 120 125

Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro  
130 135 140

Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
145 150 155 160

Leu Leu His Ser Asp Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
165 170 175

Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala  
180 185 190

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
195 200 205

Thr Leu Thr Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
210 215 220

Cys Met Gln Ala Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys  
225 230 235 240

Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu  
245 250 255

Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys  
260 265 270

Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg  
275 280 285

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys

290

295

300

Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe  
 305 310 315 320

Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn  
 325 330 335

Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly  
 340 345 350

Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly  
 355 360 365

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 370 375 380

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

Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr  
 405 410 415

Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro  
 420 425 430

Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro  
 435 440 445

Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala  
 450 455 460

Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys  
 465 470 475 480

Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu  
 485 490 495



Thr Val Leu

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Gly Tyr Tyr Met His  
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Trp Ile Asn Pro Asn Ser Gly Asp Thr Asn Tyr Ala Gln Lys Phe Gln  
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Gly

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Asp Ala Asn Ile Ala Ala Leu Asp Ala Phe Glu Ile

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Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn  
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Ala Ala Ser Ser Leu Gln Ser  
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<400> 16

Gln Gln Ser Tyr Ser Thr Pro Leu Thr  
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&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 17

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Ile | Asn | Pro | Asn | Ser | Gly | Asp | Thr | Asn | Tyr | Ala | Gln | Lys | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Ile | Ser | Thr | Ala | Tyr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Asp | Ala | Asn | Ile | Ala | Ala | Leu | Asp | Ala | Phe | Glu | Ile | Trp | Gly |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Thr | Met | Val | Thr | Val | Ser | Ser |
|     |     | 115 |     |     |     |     | 120 |     |

&lt;210&gt; 18

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 18

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ile | Gln | Met | Thr | Gln | Ser | Pro | Ser | Ser | Leu | Ser | Ala | Ser | Val | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

1 5 10 12 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr  
 20 25 30  
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Leu  
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 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr  
 20 25 30  
 Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Trp Ile Asn Pro Asn Ser Gly Asp Thr Asn Tyr Ala Gln Lys Phe  
50 55 60 13

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
130 135 140

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
145 150 155 160

Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
210 215 220

Gln Gln Ser Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
225 230 235 240

Glu Ile Lys

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
 65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
 130 135 140

15  
Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
145 150 155 160

Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
210 215 220

Gln Gln Ser Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
225 230 235 240

Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser  
245 250 255

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala  
260 265 270

Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln  
275 280 285

Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr  
290 295 300

Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr  
305 310 315 320

Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn  
325 330 335

Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn

340

345

350

Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr  
 355 360 365

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 370 375 380

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

Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly  
 405 410 415

Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly  
 420 425 430

Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly  
 435 440 445

Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu  
 450 455 460

Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val  
 465 470 475 480

Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr  
 485 490 495

Val Leu

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<223> Synthetic peptide

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Ser Tyr Gly Met His  
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<212> PRT

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

<210> 23

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Asp Gly Ala Thr Val Thr Ser Tyr Tyr Tyr Ser Gly Met Asp Val  
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<400> 24

Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu Ala  
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Leu Ala Ser Ser Leu Gln Ser  
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<400> 26

Gln Gln Tyr Asn Phe Tyr Pro Phe Thr  
 1 5

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

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

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

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

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

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

Ala Arg Asp Gly Ala Thr Val Thr Ser Tyr Tyr Tyr Ser Gly Met Asp  
                   100                                  105                                  110

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

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<400> 28

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

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

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

Tyr Leu Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly



Ala Arg Asp Gly Ala Thr Val Thr Ser Tyr Tyr Tyr Ser Gly Met Asp  
 100 105 110

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr  
 130 135 140

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile  
 145 150 155 160

Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu Ala Trp Phe Gln  
 165 170 175

Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Leu Ala Ser Ser  
 180 185 190

Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly Thr  
 195 200 205

Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr  
 210 215 220

Tyr Tyr Cys Gln Gln Tyr Asn Phe Tyr Pro Phe Thr Phe Gly Pro Gly  
 225 230 235 240

Thr Lys Val Asp Ile Lys  
 245

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<400> 30

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

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

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

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

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

Ala Arg Asp Gly Ala Thr Val Thr Ser Tyr Tyr Tyr Ser Gly Met Asp  
 100 105 110

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr  
 130 135 140

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile  
 145 150 155 160

Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu Ala Trp Phe Gln  
 165 170 175

Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Leu Ala Ser Ser  
 180 185 190

Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly Thr  
195 200 205 23

Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr  
210 215 220

Tyr Tyr Cys Gln Gln Tyr Asn Phe Tyr Pro Phe Thr Phe Gly Pro Gly  
225 230 235 240

Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu  
245 250 255

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu  
260 265 270

Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp  
275 280 285

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg  
290 295 300

Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp  
305 310 315 320

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln  
325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg  
340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly  
355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro

|     |     |           |     |
|-----|-----|-----------|-----|
| 385 | 390 | 24<br>395 | 400 |
|-----|-----|-----------|-----|

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser  
405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln  
420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu  
435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys  
450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr  
465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr  
485 490 495

Lys Leu Thr Val Leu  
500

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<210> 31
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<220>  
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<400> 31

Ser Tyr Tyr Trp Ser  
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|       |                     |
|-------|---------------------|
| <210> | 32                  |
| <211> | 16                  |
| <212> | PRT                 |
| <213> | Artificial Sequence |



&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 32

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Val | Tyr | Tyr | Ser | Gly | Thr | Thr | Asn | Tyr | Asn | Pro | Ser | Leu | Lys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

&lt;210&gt; 33

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 33

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Val | Thr | Gly | Phe | Tyr | Phe | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

&lt;210&gt; 34

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 34

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Ser | Gln | Arg | Val | Asn | Asn | Asn | Tyr | Leu | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

&lt;210&gt; 35

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 35

Gly Ala Ser Ser Arg Ala Thr

1

5

<210> 36  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 36

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
 1 5

<210> 37  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 37

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser  
 115

<210> 38  
 <211> 108  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 38

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

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

Tyr Leu Ala Trp Tyr Gln Gln Arg 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 Gln Tyr Asp Arg Ser Pro  
 85 90 95

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

<210> 39

<211> 241  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 39

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

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

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys

<210> 40  
<211> 496  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 40

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

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

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

31

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu

450

455

32

460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

&lt;210&gt; 41

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 41

Ser Tyr Tyr Trp Ser  
 1 5

&lt;210&gt; 42

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 42

Tyr Ile Tyr Tyr Ser Gly Arg Thr Asn Tyr Tyr Pro Ser Leu Lys Ser  
 1 5 10 15

&lt;210&gt; 43

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 43



Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr  
 1 5 10

<210> 44  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 44

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

<210> 45  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 45

Gly Ala Ser Ser Arg Ala Thr  
 1 5

<210> 46  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 46

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
 1 5

<210> 47  
 <211> 118  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 47

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser  
115

<210> 48

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 48

35  
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 Ser Val Asn Lys Asn  
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 Gln Tyr Asp Arg Ser Pro  
85 90 95

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

<210> 49  
<211> 241  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 49

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys

<210> 50  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 50

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

39  
Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 51  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 51

Ser Phe Tyr Trp Ser  
1 5

<210> 52  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 52

Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys Ser  
1 5 10 15

<210> 53  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 53

Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr  
1 5 10

<210> 54  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 54

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

<210> 55  
<211> 7



<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 55

Gly Ala Ser Ser Arg Ala Thr  
 1 5

<210> 56  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 56

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
 1 5

<210> 57  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 57

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

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

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

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys

50

55

42

60

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

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

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

Leu Val Thr Val Ser Ser  
115

<210> 58

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 58

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 Ser Val Asn Lys Asn  
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 Gln Tyr Asp Arg Ser Pro  
85 90 95

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

<210> 59  
<211> 241  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 59

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys

<210> 60  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 60

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430 47

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 61  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 61

Ser Phe Tyr Trp Ser  
1 5

<210> 62  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 62

Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys Ser  
1 5 10 15

<210> 63

<211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 63

Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr  
 1 5 10

<210> 64  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 64

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

<210> 65  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 65

Gly Ala Ser Ser Arg Ala Thr  
 1 5

<210> 66  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide



&lt;400&gt; 66

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
 1 5

&lt;210&gt; 67

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 67

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

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

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

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

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

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

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

Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 68

50

<211> 108  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 68

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 Ser Val Asn Lys Asn  
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 Gln Tyr Asp Arg Ser Pro  
85 90 95

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

<210> 69  
<211> 241  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 69

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
       130                  135                  140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
   145                  150                  155                  160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
           165                  170                  175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
           180                  185                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
       195                  200                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys

<210> 70  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 70

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 71  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 71

Ser Phe Tyr Trp Ser  
 1 5

<210> 72  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 72

Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys Ser  
 1 5 10 15

<210> 73  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 73

Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr  
 1 5 10

<210> 74  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 74

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

<210> 75

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 75

Gly Ala Ser Ser Arg Ala Thr  
1 5

<210> 76

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 76

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
1 5

<210> 77

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 77

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



Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
20 25 30 57

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

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

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

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

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

Leu Val Thr Val Ser Ser Lys  
115

<210> 78  
<211> 108  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 78

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 Ser Val Asn Lys Asn  
20 25 30

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

58

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 Gln Tyr Asp Arg Ser Pro  
85 90 95

Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile Lys  
100 105

<210> 79

<211> 241

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 79

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
       130                                  135                                  140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
   145                                  150                                  155                                  160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
                   165                                  170                                  175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
                   180                                  185                                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
           195                                  200                                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
       210                                  215                                  220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile  
   225                                  230                                  235                                  240

Lys

<210> 80  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

&lt;400&gt; 80

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 81  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 81

Ser Phe Tyr Trp Ser  
 1 5

<210> 82  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 82

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ile | Tyr | Tyr | Ser | Gly | Thr | Thr | Asn | Tyr | Asn | Pro | Ser | Leu | Lys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 83

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 83

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Val | Ala | Gly | Phe | Phe | Phe | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

<210> 84

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 84

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Ser | Gln | Ser | Val | Asn | Lys | Asn | Tyr | Leu | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

<210> 85

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 85

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Ser | Ser | Arg | Ala | Thr |
| 1   |     |     |     | 5   |     |     |

<210> 86  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 86

Gln Gln Tyr Asp Arg Ser Pro Leu Thr  
 1 5

<210> 87  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 87

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

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

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

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

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

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



Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110 65

Leu Val Thr Val Ser Ser  
115

<210> 88  
<211> 108  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 88

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

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

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

<210> 89  
<211> 241  
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 89

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Ser Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
                   180                  185                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
                   195                  200                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
           210                  215                  220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Arg Leu Glu Ile  
   225                  230                  235                  240

Lys

<210> 90  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 90

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

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

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

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

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 65  |     | 70  |     | 68  |     | 80  |
|     |     |     |     | 75  |     |     |
| Lys | Leu | Ser | Ser | Val | Thr | Ala |
|     |     |     |     | 85  |     | Ala |
|     |     |     |     |     | Thr | Ala |
|     |     |     |     |     | 90  | Val |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | 95  |
| Ala |     |     |     |     |     |     |
| Arg | Ile | Ala | Val | Ala | Gly | Phe |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | 105 |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 110 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
| Leu | Val | Thr | Val | Ser | Ser | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 120 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 125 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ser |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile |
|     |     |     |     |     |     | 135 |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 140 |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile |
|     |     |     |     |     |     | 135 |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 145 |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | 150 |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 155 |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 160 |
| Ser | Leu | Ser | Pro | Gly | Glu | Ser |
|     |     |     |     |     |     | 150 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 155 |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 160 |
| Ser | Val | Asn | Lys | Asn | Tyr | Leu |
|     |     |     |     |     |     | 165 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 175 |
| Ala | Pro | Arg | Leu | Leu | Ile | Tyr |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | 180 |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 200 |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | 205 |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Thr |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu |
|     |     |     |     |     |     | 215 |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | 220 |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 210 |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr |
|     |     |     |     |     |     | 230 |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 235 |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | 240 |
| Lys | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 250 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 255 |
| Gly | Leu | Val | Gln | Pro | Gly | Gly |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | 265 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 270 |

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 91  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 91

Ser Tyr Tyr Trp Ser  
 1 5

<210> 92  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 92

Tyr Ile Phe Tyr Asn Gly Ile Thr Asn Tyr Asn Pro Ser Leu Lys Ser  
 1 5 10 15

<210> 93  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 93

Ile His Ser Gly Ser Phe Ser Phe Asp Tyr  
 1 5 10

<210> 94  
<211> 12  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 94

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

<210> 95  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 95

Gly Ala Ser Ser Arg Ala Thr  
1 5

<210> 96  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 96

Gln Gln Tyr Asp Thr Ser Pro Ile Thr  
1 5

<210> 97  
<211> 118  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 97

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser  
 115

&lt;210&gt; 98

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 98

Glu Ile Val Met 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 Ser Val Ser Arg Gly  
                   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 Asp 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 Gln Tyr Asp Thr Ser Pro  
                   85                                  90                                  95

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

<210> 99

<211> 241

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 99

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
           20                                  25                                  30

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

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

50

55

74

60

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

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
100 105 110

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

Gly Gly Gly Gly Ser Glu Ile Val Met Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Ser Arg Gly Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Asp Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

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

Lys

<210> 100  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 100

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
 100 105 110

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

Gly Gly Gly Gly Ser Glu Ile Val Met Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |            |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|-----|
| 145 |     | 150 |     | 76<br>155  |     | 160 |     |     |     |     |     |     |     |            |     |
| Ser | Val | Ser | Arg | Gly<br>165 | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly<br>175 | Gln |
| Ala | Pro | Arg | Leu | Leu        | Ile | Tyr | Gly | Ala | Ser | Ser | Arg | Ala | Thr | Asp        | Ile |
|     |     |     | 180 |            |     |     |     | 185 |     |     |     |     | 190 |            |     |
| Pro | Asp | Arg | Phe | Ser        | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu        | Thr |
|     |     | 195 |     |            |     |     | 200 |     |     |     |     | 205 |     |            |     |
| Ile | Ser | Arg | Leu | Glu        | Pro | Glu | Asp | Phe | Ala | Val | Tyr | Tyr | Cys | Gln        | Gln |
|     | 210 |     |     |            |     | 215 |     |     |     |     | 220 |     |     |            |     |
| Tyr | Asp | Thr | Ser | Pro        | Ile | Thr | Phe | Gly | Gln | Gly | Thr | Lys | Val | Glu        | Ile |
| 225 |     |     |     |            | 230 |     |     |     |     | 235 |     |     |     |            | 240 |
| Lys | Ser | Gly | Gly | Gly        | Gly | Ser | Glu | Val | Gln | Leu | Val | Glu | Ser | Gly        | Gly |
|     |     |     |     | 245        |     |     |     |     | 250 |     |     |     |     | 255        |     |
| Gly | Leu | Val | Gln | Pro        | Gly | Gly | Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala        | Ser |
|     |     |     | 260 |            |     |     |     | 265 |     |     |     |     | 270 |            |     |
| Gly | Phe | Thr | Phe | Asn        | Lys | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala        | Pro |
|     |     | 275 |     |            |     |     | 280 |     |     |     |     | 285 |     |            |     |
| Gly | Lys | Gly | Leu | Glu        | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn        | Asn |
|     | 290 |     |     |            |     | 295 |     |     |     |     | 300 |     |     |            |     |
| Tyr | Ala | Thr | Tyr | Tyr        | Ala | Asp | Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile        | Ser |
| 305 |     |     |     |            | 310 |     |     |     |     | 315 |     |     |     |            | 320 |
| Arg | Asp | Asp | Ser | Lys        | Asn | Thr | Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu        | Lys |
|     |     |     |     | 325        |     |     |     |     | 330 |     |     |     |     | 335        |     |
| Thr | Glu | Asp | Thr | Ala        | Val | Tyr | Tyr | Cys | Val | Arg | His | Gly | Asn | Phe        | Gly |
|     |     |     | 340 |            |     |     |     | 345 |     |     |     |     | 350 |            |     |

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 101

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 101

Asn Ala Gly Met Ser

1 5

<210> 102  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 102

Arg Ile Lys Asn Lys Ile Asp Gly Gly Thr Thr Asp Phe Ala Ala Pro  
 1 5 10 15

Val Lys Gly

<210> 103  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 103

Arg Gly Trp Tyr Gly Asp Tyr Phe Asp Tyr  
 1 5 10

<210> 104  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 104

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

<210> 105  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 105

Leu Gly Ser Asn Arg Ala Ser  
 1 5

<210> 106  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 106

Met Gln Ala Leu Gln Thr Pro Phe Thr  
 1 5

<210> 107  
 <211> 121  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 107

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

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

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

80

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

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

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

Tyr Cys Thr Ala Arg Gly Trp Tyr Gly Asp Tyr Phe Asp Tyr Trp Gly  
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120

<210> 108

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 108

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

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

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

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

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



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

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

<210> 109  
 <211> 248  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 109

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

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

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

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

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

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

Tyr Cys Thr Ala Arg Gly Trp Tyr Gly Asp Tyr Phe Asp Tyr Trp Gly  
                     100                    105                    110

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly

82

115

120

125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro  
130 135 140

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
145 150 155 160

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp  
165 170 175

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly  
180 185 190

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
195 200 205

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val  
210 215 220

Gly Ile Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly  
225 230 235 240

Pro Gly Thr Lys Val Glu Ile Lys  
245

<210> 110

<211> 503

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 110

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Asn Asn Ala  
20 25 30 83

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

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

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

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

Tyr Cys Thr Ala Arg Gly Trp Tyr Gly Asp Tyr Phe Asp Tyr Trp Gly  
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro  
130 135 140

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
145 150 155 160

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp  
165 170 175

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly  
180 185 190

Ser Asn Arg Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
195 200 205

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val

210

215

220

Gly Ile Tyr Tyr Cys Met Gln Ala Leu Gln Thr Pro Phe Thr Phe Gly  
 225 230 235 240

Pro Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val  
 245 250 255

Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu  
 260 265 270

Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met  
 275 280 285

Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg  
 290 295 300

Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val  
 305 310 315 320

Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr  
 325 330 335

Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys  
 340 345 350

Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr  
 355 360 365

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 370 375 380

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln  
 385 390 395 400

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys  
 405 410 415

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val  
                   420                  425                  430

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys  
           435                  440                  445

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly  
       450                  455                  460

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala  
 465                  470                  475                  480

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly  
                   485                  490                  495

Gly Thr Lys Leu Thr Val Leu  
           500

<210> 111  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 111

Ser Tyr Asp Ile His  
 1                  5

<210> 112  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 112

Val Ile Ser Ser His Gly Ser Asn Lys Asn Tyr Ala Arg Ser Val Lys  
 1                      5                      10                      15

Gly

<210> 113  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 113

Asp Gly Tyr Ser Gly Asn Asp Pro Phe Tyr Tyr Tyr Tyr His Gly Met  
 1                      5                      10                      15

Asp Val

<210> 114  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 114

Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn  
 1                      5                      10

<210> 115  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 115

Ala Ala Ser Ser Leu Gln Ser  
1 5

<210> 116

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 116

Gln Gln Ser Phe Thr Thr Pro Leu Thr  
1 5

<210> 117

<211> 127

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 117

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

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

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

Ala Val Ile Ser Ser His Gly Ser Asn Lys Asn Tyr Ala Arg Ser Val  
50 55 60

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

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

Ala Arg Asp Gly Tyr Ser Gly Asn Asp Pro Phe Tyr Tyr Tyr Tyr His  
100 105 110

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

<210> 118

<211> 107

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Synthetic peptide

<400> 118

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

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

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

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

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

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

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



<210> 119  
 <211> 249  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 119

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

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

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

Ala Val Ile Ser Ser His Gly Ser Asn Lys Asn Tyr Ala Arg Ser Val  
 50 55 60

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

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

Ala Arg Asp Gly Tyr Ser Gly Asn Asp Pro Phe Tyr Tyr Tyr Tyr His  
 100 105 110

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile  
 130 135 140

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg



Ala Val Ile Ser Ser His Gly Ser Asn Lys Asn Tyr Ala Arg Ser Val  
50 55 60 91

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

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

Ala Arg Asp Gly Tyr Ser Gly Asn Asp Pro Phe Tyr Tyr Tyr Tyr His  
100 105 110

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile  
130 135 140

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
145 150 155 160

Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn  
165 170 175

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala  
180 185 190

Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly  
195 200 205

Ser Gly Thr Asp Phe Ser Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp  
210 215 220

Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Phe Thr Thr Pro Leu Thr Phe  
225 230 235 240

Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu

245

250

255

Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser  
 260 265 270

Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala  
 275 280 285

Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala  
 290 295 300

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 305 310 315 320

Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala  
 325 330 335

Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr  
 340 345 350

Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala  
 355 360 365

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly  
 370 375 380

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr  
 385 390 395 400

Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr  
 405 410 415

Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp  
 420 425 430

Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr  
 435 440 445

Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu  
 450 455 460

Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu  
 465 470 475 480

Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly  
 485 490 495

Gly Gly Thr Lys Leu Thr Val Leu  
 500

<210> 121  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 121

Ser Tyr Tyr Met His  
 1 5

<210> 122  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 122

Ile Ile Asn Pro Ser Asp Gly Ser Thr Asn Tyr Ala Gln Asn Phe Gln  
 1 5 10 15

Gly

<210> 123  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 123

Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 1 5 10

<210> 124  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 124

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

<210> 125  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 125

Lys Val Ser Asn Trp Gln Ser  
 1 5

<210> 126  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 126

Met Gln Gly Thr His Trp Pro Pro Thr  
1 5

<210> 127

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 127

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

<210> 128  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 128

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

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

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
 50 55 60

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

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

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

<210> 129  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 129



97

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser

195

200

205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 245 250

&lt;210&gt; 130

&lt;211&gt; 505

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 130

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

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

99

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |  |  |  |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| 290     |         |         |         |         | 295     |         |         |         |         | 100     |         |         |         |         | 300     |  |  |  |  |
| Ala 305 | Arg     | Ile     | Arg     | Ser     | Lys 310 | Tyr     | Asn     | Asn     | Tyr     | Ala 315 | Thr     | Tyr     | Tyr     | Ala     | Asp 320 |  |  |  |  |
| Ser     | Val     | Lys     | Asp     | Arg 325 | Phe     | Thr     | Ile     | Ser     | Arg 330 | Asp     | Asp     | Ser     | Lys     | Asn 335 | Thr     |  |  |  |  |
| Ala     | Tyr     | Leu     | Gln 340 | Met     | Asn     | Asn     | Leu     | Lys 345 | Thr     | Glu     | Asp     | Thr     | Ala 350 | Val     | Tyr     |  |  |  |  |
| Tyr     | Cys     | Val 355 | Arg     | His     | Gly     | Asn     | Phe 360 | Gly     | Asn     | Ser     | Tyr     | Ile 365 | Ser     | Tyr     | Trp     |  |  |  |  |
| Ala     | Tyr     | Trp     | Gly     | Gln     | Gly     | Thr 375 | Leu     | Val     | Thr     | Val     | Ser 380 | Ser     | Gly     | Gly     | Gly     |  |  |  |  |
| Gly 385 | Ser     | Gly     | Gly     | Gly     | Gly 390 | Ser     | Gly     | Gly     | Gly     | Gly 395 | Ser     | Gln     | Thr     | Val     | Val 400 |  |  |  |  |
| Thr     | Gln     | Glu     | Pro     | Ser 405 | Leu     | Thr     | Val     | Ser     | Pro 410 | Gly     | Gly     | Thr     | Val     | Thr 415 | Leu     |  |  |  |  |
| Thr     | Cys     | Gly     | Ser 420 | Ser     | Thr     | Gly     | Ala 425 | Val     | Thr     | Ser     | Gly     | Asn 430 | Tyr     | Pro     | Asn     |  |  |  |  |
| Trp     | Val     | Gln 435 | Gln     | Lys     | Pro     | Gly     | Gln 440 | Ala     | Pro     | Arg     | Gly     | Leu 445 | Ile     | Gly     | Gly     |  |  |  |  |
| Thr     | Lys 450 | Phe     | Leu     | Ala     | Pro     | Gly 455 | Thr     | Pro     | Ala     | Arg     | Phe 460 | Ser     | Gly     | Ser     | Leu     |  |  |  |  |
| Leu 465 | Gly     | Gly     | Lys     | Ala     | Ala 470 | Leu     | Thr     | Leu     | Ser     | Gly 475 | Val     | Gln     | Pro     | Glu     | Asp 480 |  |  |  |  |
| Glu     | Ala     | Glu     | Tyr     | Tyr 485 | Cys     | Val     | Leu     | Trp     | Tyr 490 | Ser     | Asn     | Arg     | Trp     | Val 495 | Phe     |  |  |  |  |

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 500 505

<210> 131  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 131

Asn Tyr Tyr Met His  
 1 5

<210> 132  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 132

Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe Gln  
 1 5 10 15

Gly

<210> 133  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 133

Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val

1 5 10

<210> 134  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 134

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

<210> 135  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 135

Lys Val Ser Asn Trp Gln Ser  
1 5

<210> 136  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 136

Met Gln Gly Thr His Trp Pro Pro Thr  
1 5

<210> 137  
<211> 123  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 137

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

&lt;210&gt; 138

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 138

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

104  
 1                      5                      10                      15  
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
                     20                      25                      30  
 Asp Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
                     35                      40                      45  
 Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
                     50                      55                      60  
 Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65                      70                      75                      80  
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
                     85                      90                      95  
 Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
                     100                      105                      110

<210> 139  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 139

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1                      5                      10                      15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
                     20                      25                      30  
 Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
                     35                      40                      45



Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60 105

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys

245

106  
250

<210> 140  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 140

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

107  
Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr

108

340

345

350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 141

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 141

Gly Tyr Tyr Ile His  
1 5

<210> 142

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 142

Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Gly Gln Asn Phe Gln  
1 5 10 15

Gly

<210> 143

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 143

Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
1 5 10

<210> 144

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 144

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

<210> 145  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 145

Lys Val Ser Asn Trp Gln Ser  
 1 5

<210> 146  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 146

Met Gln Gly Thr His Trp Pro Pro Thr  
 1 5

<210> 147  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 147

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                   100                          105                          110

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

<210> 148

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 148

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Ala Tyr Arg  
           20                          25                          30

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

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro

50

55

112

60

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

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

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

&lt;210&gt; 149

&lt;211&gt; 250

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 149

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110 113

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Ala Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 150  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 150

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Ala Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 115 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val



&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 152

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ile | Asn | Pro | Ser | Asp | Gly | Ser | Thr | Asn | Tyr | Ala | Gln | Lys | Phe | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Gly

&lt;210&gt; 153

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 153

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Thr | Val | Val | His | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     |

&lt;210&gt; 154

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 154

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Asp | Gly | Asn | Thr | Tyr | Leu | Thr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

&lt;210&gt; 155

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

<400> 155

Lys Val Ser Asn Trp Gln Ser  
1 5

<210> 156

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 156

Met Gln Gly Thr His Trp Pro Pro Thr  
1 5

<210> 157

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 157

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
65 70 75 80

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

Thr Arg Gly Thr Thr Val Val His Tyr Ser Tyr Tyr Asp Met Asp Val  
                     100                    105                    110

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

<210> 158  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 158

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
                     20                    25                    30

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

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
                     50                    55                    60

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

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

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

|  |     |     |     |     |
|--|-----|-----|-----|-----|
|  | 100 | 105 | 120 | 110 |
|--|-----|-----|-----|-----|

<210> 159  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 159

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Gly | His |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Tyr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | Ile | Ile | Asn | Pro | Ser | Asp | Gly | Ser | Thr | Asn | Tyr | Ala | Gln | Lys | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln | Gly | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Ser | Thr | Val | Tyr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Met | Glu | Leu | Arg | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Thr | Arg | Gly | Thr | Thr | Val | Val | His | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Trp | Gly | Gln | Gly | Thr | Thr | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Asp | Val | Val | Met | Thr | Gln |
|     |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Leu | Ser | Leu | Pro | Val | Thr | Leu | Gly | Gln | Pro | Ala | Ser | Ile | Ser |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Asp | Gly | Asn | Thr | Tyr | Leu |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Trp | Phe | Gln | Gln | Arg | Pro | Gly | Gln | Ser | Pro | Arg | Arg | Leu | Ile | Tyr |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Val | Ser | Asn | Trp | Gln | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Ser |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |
|     | 210 |     |     |     |     |     | 215 |     |     |     | 220 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Gly | Gly | Thr | Lys | Val | Glu | Ile | Lys |
|     |     |     |     | 245 |     |     |     |     | 250 |

<210> 160  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 160

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Gly | His |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
 65 70 75 80

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

Thr Arg Gly Thr Thr Val Val His Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Thr Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255 123

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly

435

440

124

445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 500 505

<210> 161  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 161

Asn Tyr Phe Met His  
 1 5

<210> 162  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 162

Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Asn Phe Gln  
 1 5 10 15

Gly

<210> 163  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 163

Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 1 5 10

<210> 164  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 164

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

<210> 165  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 165

Arg Val Ser Asn Trp Gln Ser  
 1 5

<210> 166  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 166

Met Gln Gly Thr Tyr Trp Pro Pro Thr  
 1 5

&lt;210&gt; 167

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 167

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

<210> 168  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 168

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

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

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

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

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

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

Thr Tyr Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Asp Ile Lys  
 100 105 110

<210> 169  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 169

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190



Arg Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205 129

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr Tyr Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Asp Ile Lys  
245 250

<210> 170  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 170

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

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

130

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Arg Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr Tyr Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300 131

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe

485

490

132

495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 171  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 171

Asn Tyr Gly Met His  
1 5

<210> 172  
<211> 17  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 172

Val Ile Ser His His Gly Ser Ser Lys Tyr Tyr Ala Arg Ser Val Lys  
1 5 10 15

Gly

<210> 173  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 173

Asp Trp Trp Glu Leu Val Phe Asp Tyr  
1 5

<210> 174  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 174

Lys Ser Ser Gln Ser Leu Leu His Ser Asp Gly Lys Thr Phe Leu Tyr  
1 5 10 15

<210> 175  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 175

Glu Val Ser Asn Arg Phe Ser  
1 5

<210> 176  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 176

Leu Gln Gly Ile His Leu Pro Phe Thr  
1 5

<210> 177  
<211> 118  
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 177

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

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

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

Ala Val Ile Ser His His Gly Ser Ser Lys Tyr Tyr Ala Arg Ser Val  
50 55 60

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

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

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

Leu Val Thr Val Ser Ser  
115

<210> 178

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 178

135  
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu His Ser  
 20 25 30

Asp Gly Lys Thr Phe Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Pro  
 35 40 45

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

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

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

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

<210> 179  
 <211> 245  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 179

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

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

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

136

Ala Val Ile Ser His His Gly Ser Ser Lys Tyr Tyr Ala Arg Ser Val  
50 55 60

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

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

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

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

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu  
130 135 140

Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln  
145 150 155 160

Ser Leu Leu His Ser Asp Gly Lys Thr Phe Leu Tyr Trp Tyr Leu Gln  
165 170 175

Lys Pro Gly Gln Pro Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg  
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp  
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr  
210 215 220

Tyr Cys Leu Gln Gly Ile His Leu Pro Phe Thr Phe Gly Pro Gly Thr  
225 230 235 240



Lys Val Glu Ile Lys  
245

<210> 180  
<211> 500  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 180

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

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

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

Ala Val Ile Ser His His Gly Ser Ser Lys Tyr Tyr Ala Arg Ser Val  
50 55 60

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

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

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

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

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu  
130 135 140

Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln  
 145 150 155 160

Ser Leu Leu His Ser Asp Gly Lys Thr Phe Leu Tyr Trp Tyr Leu Gln  
 165 170 175

Lys Pro Gly Gln Pro Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg  
 180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp  
 195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr  
 210 215 220

Tyr Cys Leu Gln Gly Ile His Leu Pro Phe Thr Phe Gly Pro Gly Thr  
 225 230 235 240

Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val  
 245 250 255

Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser  
 260 265 270

Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val  
 275 280 285

Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser  
 290 295 300

Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg  
 305 310 315 320

Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met  
 325 330 335

Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His  
340 345 350 139

Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln  
355 360 365

Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser  
385 390 395 400

Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser  
405 410 415

Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys  
420 425 430

Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala  
435 440 445

Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala  
450 455 460

Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr  
465 470 475 480

Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys  
485 490 495

Leu Thr Val Leu  
500

<210> 181  
<211> 7  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 181

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Arg | Met | Gly | Val | Ser |
| 1   |     |     |     | 5   |     |     |

&lt;210&gt; 182

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 182

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ile | Phe | Ser | Asn | Asp | Gly | Lys | Ser | Tyr | Ser | Thr | Ser | Leu | Lys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

&lt;210&gt; 183

&lt;211&gt; 15

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 183

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Tyr | Asp | Ser | Ser | Gly | Tyr | Tyr | Tyr | Ser | Phe | Phe | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

&lt;210&gt; 184

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 184

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Ser | Gln | Ser | Ile | Ser | Ser | Tyr | Leu | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 185  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 185

Ala Ala Ser Ser Leu Gln Ser  
 1 5

<210> 186  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 186

Gln Gln Gly Tyr Ser Ser Pro Phe Thr  
 1 5

<210> 187  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 187

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

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

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

35 40 142 45

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
85 90 95

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

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

<210> 188  
<211> 107  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 188

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

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

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

Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80 143

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

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

<210> 189  
<211> 247  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 189

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

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

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

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
85 90 95

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

144

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
130 135 140

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
145 150 155 160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr  
165 170 175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser  
180 185 190

Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
195 200 205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
210 215 220

Thr Tyr Tyr Cys Gln Gln Gly Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
225 230 235 240

Gly Thr Lys Val Glu Ile Lys  
245

<210> 190  
<211> 502  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 190

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



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

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

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
                   85                                  90                                  95

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

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
       130                                  135                                  140

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
   145                                  150                                  155                                  160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr  
           165                                  170                                  175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser  
           180                                  185                                  190

Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
       195                                  200                                  205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
 210 215 220

Thr Tyr Tyr Cys Gln Gln Gly Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
 225 230 235 240

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln  
 245 250 255

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys  
 260 265 270

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn  
 275 280 285

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile  
 290 295 300

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys  
 305 310 315 320

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu  
 325 330 335

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val  
 340 345 350

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp  
 355 360 365

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly  
 370 375 380

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu  
 385 390 395 400

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly  
405 410 415

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln  
420 425 430

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe  
435 440 445

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly  
450 455 460

Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu  
465 470 475 480

Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly  
485 490 495

Thr Lys Leu Thr Val Leu  
500

<210> 191  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 191

Asn Ala Arg Met Gly Val Ser  
1 5

<210> 192  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 192

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ile | Phe | Ser | Thr | Asp | Glu | Lys | Ser | Tyr | Ser | Thr | Ser | Leu | Lys | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 193

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 193

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Tyr | Asp | Ser | Ser | Gly | Tyr | Tyr | Tyr | Ser | Phe | Phe | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |

<210> 194

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 194

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Ser | Gln | Ser | Ile | Arg | Ser | Tyr | Leu | Asn |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |

<210> 195

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 195

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ala | Ser | Asn | Leu | Gln | Ser |
| 1   |     |     |     | 5   |     |     |

<210> 196  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 196

Gln Gln Ser Tyr Ser Ser Pro Phe Thr  
 1 5

<210> 197  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 197

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

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

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

Trp Leu Ala His Ile Phe Ser Thr Asp Glu Lys Ser Tyr Ser Thr Ser  
 50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala Arg Tyr Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Ser Phe Phe



&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 199

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

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

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

Trp Leu Ala His Ile Phe Ser Thr Asp Glu Lys Ser Tyr Ser Thr Ser  
 50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala Arg Tyr Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Ser Phe Phe  
 100 105 110

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
 130 135 140

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
 145 150 155 160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser Tyr Leu Asn Trp Tyr  
 165 170 175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly Ala Ser  
 180 185 190

Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
 195 200 205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
 210 215 220

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
 225 230 235 240

Gly Thr Lys Val Glu Ile Lys  
 245

<210> 200  
 <211> 502  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 200

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

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

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

Trp Leu Ala His Ile Phe Ser Thr Asp Glu Lys Ser Tyr Ser Thr Ser  
 50 55 60

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



Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
                     85                    90                    95

Cys Ala Arg Tyr Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Ser Phe Phe  
                     100                    105                    110

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
                     130                    135                    140

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
                     145                    150                    155                    160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser Tyr Leu Asn Trp Tyr  
                     165                    170                    175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly Ala Ser  
                     180                    185                    190

Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
                     195                    200                    205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
                     210                    215                    220

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
                     225                    230                    235                    240

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln  
                     245                    250                    255

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys  
                     260                    265                    270

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn  
 275 280 285

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile  
 290 295 300

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys  
 305 310 315 320

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu  
 325 330 335

Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val  
 340 345 350

Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp  
 355 360 365

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly  
 370 375 380

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu  
 385 390 395 400

Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly  
 405 410 415

Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln  
 420 425 430

Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe  
 435 440 445

Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly  
 450 455 460

|     |     |     |     |     |     |     |     |     |     |            |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|
| Lys | Ala | Ala | Leu | Thr | Leu | Ser | Gly | Val | Gln | Pro        | Glu | Asp | Glu | Ala | Glu |
| 465 |     |     |     |     | 470 |     |     |     |     | 155<br>475 |     |     |     |     | 480 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Cys | Val | Leu | Trp | Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| Thr | Lys | Leu | Thr | Val | Leu |
|     |     |     |     |     | 500 |

<210> 201  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 201

|     |     |     |     |     |
|-----|-----|-----|-----|-----|
| Ser | Tyr | Tyr | Ile | His |
| 1   |     |     |     | 5   |

<210> 202  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 202

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ile | Asn | Pro | Ser | Gly | Gly | Ser | Lys | Ser | Tyr | Ala | Gln | Lys | Phe | Arg |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

Gly

<210> 203  
 <211> 12  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 203

|     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Met | Ser | Thr | Val | Thr | Ser | Asp | Ala | Phe | Asp | Ile |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |

&lt;210&gt; 204

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 204

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Ser | Gln | Ser | Ile | Ser | Asn | Tyr | Leu | Asn |
| 1   |     |     | 5   |     |     |     |     |     | 10  |     |

&lt;210&gt; 205

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 205

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Ser | Ser | Leu | Gln | Ser |
| 1   |     |     | 5   |     |     |     |

&lt;210&gt; 206

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 206

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Ser | Tyr | Ser | Ala | Pro | Leu | Thr |
| 1   |     |     | 5   |     |     |     |     |     |

<210> 207  
 <211> 121  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 207

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

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

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

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

Arg Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
 65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser  
 115 120

<210> 208  
 <211> 107  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 208

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Val | Thr | Ile | Thr | Cys | Arg | Ala | Ser | Gln | Ser | Ile | Ser | 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 | Ala | Ala | Ser | Ser | Leu | Gln | Ser | Gly | Val | Pro | Ser | Arg | Phe | Ser | Gly |
|     | 50  |     |     |     |     | 55  |     |     |     | 60  |     |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ser | Gly | Thr | Glu | Phe | Thr | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Pro |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     | 80  |     |

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

|     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Phe | Gly | Gly | Gly | Thr | Lys | Val | Asp | Ile | Lys |
|     |     |     | 100 |     |     |     | 105 |     |     |     |

&lt;210&gt; 209

&lt;211&gt; 243

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 209

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

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

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

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

Arg Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
 65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
 130 135 140

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
 145 150 155 160

Ala Ser Gln Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
 165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
 180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr  
 195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
 210 215 220

160

Gln Gln Ser Tyr Ser Ala Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
225 230 235 240

Asp Ile Lys

<210> 210  
<211> 498  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 210

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

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

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

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

Arg Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
115 120 125



Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
 130 135 140

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
 145 150 155 160

Ala Ser Gln Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
 165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
 180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr  
 195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
 210 215 220

Gln Gln Ser Tyr Ser Ala Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
 225 230 235 240

Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser  
 245 250 255

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala  
 260 265 270

Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln  
 275 280 285

Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr  
 290 295 300

Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr  
 305 310 315 320

Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn  
325 330 335

Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn  
340 345 350

Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr  
355 360 365

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
370 375 380

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

Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly  
405 410 415

Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly  
420 425 430

Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly  
435 440 445

Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu  
450 455 460

Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val  
465 470 475 480

Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr  
485 490 495

Val Leu

<210> 211  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 211

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

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

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
                                   180                                  185                                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
                                   195                                  200                                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
                                   210                                  215                                  220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
                                   225                                  230                                  235                                  240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
                                   245                                  250                                  255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
                                   260                                  265                                  270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
                                   275                                  280                                  285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
                                   290                                  295                                  300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
                                   325                                  330                                  335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
                                   340                                  345                                  350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 165 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 212  
<211> 496  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 212

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
                   20                  25                  30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
       130                  135                  140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
   145                  150                  155                  160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
           165                  170                  175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
           180                  185                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
       195                  200                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220 167

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

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

|       |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|       |                     |     |     |     |     |     |     |     | 168 |     |     |     |     |     |     |
|       |                     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Thr   | Ser                 | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala |
|       |                     | 420 |     |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Pro   | Arg                 | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala | Pro | Gly | Thr | Pro |
|       |                     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ala   | Arg                 | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Leu |
|       |                     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Ser   | Gly                 | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr | Cys | Val | Leu | Trp |
| 465   |                     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Tyr   | Ser                 | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |
|       |                     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| <210> | 213                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <211> | 496                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <212> | PRT                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <213> | Artificial Sequence |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <220> |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <223> | Synthetic peptide   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <400> | 213                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln   | Val                 | Gln | Leu | Gln | Glu | Ser | Gly | Pro | Gly | Leu | Val | Lys | Pro | Ser | Glu |
| 1     |                     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Thr   | Leu                 | Ser | Leu | Thr | Cys | Thr | Val | Ser | Gly | Ala | Ser | Ile | Ser | Ser | Phe |
|       |                     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Tyr   | Trp                 | Ser | Trp | Ile | Arg | Gln | Pro | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Ile |
|       |                     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly   | Tyr                 | Ile | Tyr | Tyr | Ser | Gly | Thr | Thr | Asn | Tyr | Asn | Pro | Ser | Leu | Lys |
|       | 50                  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |



169  
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|-----|--|--|--|-----|--|--|--|
| 260 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 265 |  |  |  | 170 |  |  |  | 270 |  |  |  |
| Gly | Phe | Thr | Phe | Asn | Ser | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 275 |     |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asp |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val | Lys | Gly | Arg | Phe | Thr | Ile | Ser |     |  |  |  |     |  |  |  |     |  |  |  |
| 305 |     |     |     |     |     | 310 |     |     |     | 315 |     |     |     |     |     | 320 |  |  |  |     |  |  |  |     |  |  |  |
| Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr | Leu | Gln | Met | Asn | Ser | Leu | Lys |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     |     |     | 325 |     |     |     |     |     | 330 |     |     |     | 335 |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     | 350 |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Asn | Ser | Tyr | Val | Ser | Trp | Trp | Ala | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly |     |  |  |  |     |  |  |  |     |  |  |  |
| 370 |     |     |     |     |     | 375 |     |     |     | 380 |     |     |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu | Pro | Ser | Leu | Thr | Val | Ser |     |  |  |  |     |  |  |  |     |  |  |  |
| 385 |     |     |     | 390 |     |     |     |     |     | 395 |     |     |     |     |     | 400 |  |  |  |     |  |  |  |     |  |  |  |
| Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly | Ser | Ser | Thr | Gly | Ala | Val |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     |     |     | 405 |     |     |     | 410 |     |     |     |     |     | 415 |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 420 |     |     |     |     |     | 425 |     |     |     | 430 |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala | Pro | Gly | Thr | Pro |     |  |  |  |     |  |  |  |     |  |  |  |
|     |     | 435 |     |     |     | 440 |     |     |     | 445 |     |     |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |
| Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Leu |     |  |  |  |     |  |  |  |     |  |  |  |
| 450 |     |     |     |     |     | 455 |     |     |     | 460 |     |     |     |     |     |     |  |  |  |     |  |  |  |     |  |  |  |

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 214  
 <211> 496  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 214

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

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

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

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

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

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

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

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     |     |     |     |     |     | 172 |     |     |     |     |     |
|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|     | 115 |     |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile | Val | Leu | Thr | Gln | Ser | Pro | Gly | Thr | Leu |
| 130 |     |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Ser | Leu | Ser | Pro | Gly | Glu | Arg | Ala | Thr | Leu | Ser | Cys | Arg | Ala | Ser | Gln |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Ser | Val | Asn | Lys | Asn | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Gln |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Ala | Pro | Arg | Leu | Leu | Ile | Tyr | Gly | Ala | Ser | Ser | Arg | Ala | Thr | Gly | Ile |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     | 190 |     |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu | Asp | Phe | Ala | Val | Tyr | Tyr | Cys | Gln | Gln |
| 210 |     |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr | Phe | Gly | Gly | Gly | Thr | Lys | Val | Glu | Ile |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Lys | Ser | Gly | Gly | Gly | Gly | Ser | Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser | Leu | Arg | Leu | Ser | Cys | Ala | Ala | Ser |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Gly | Phe | Thr | Phe | Asn | Ser | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn |
| 290 |     |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val | Lys | Gly | Arg | Phe | Thr | Ile | Ser |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
                   325                                  330                                  335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
                   340                                  345                                  350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
                   355                                  360                                  365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
                   370                                  375                                  380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
                   405                                  410                                  415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
                   420                                  425                                  430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
                   435                                  440                                  445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
                   450                                  455                                  460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
                   465                                  470                                  475                                  480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
                   485                                  490                                  495

<210> 215

<211> 496

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 215

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

176

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 216  
<211> 496  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 216

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

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



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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Ser Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Arg Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

179  
Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 217  
<211> 496  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 217

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

180

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
100 105 110

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

Gly Gly Gly Gly Ser Glu Ile Val Met Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Ser Arg Gly Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Asp Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

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

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

181  
Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp

|     |     |     |     |  |
|-----|-----|-----|-----|--|
|     |     |     | 182 |  |
| 465 | 470 | 475 | 480 |  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |

<210> 218  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 218

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Gln | Gly | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Ile | Asn | Pro | Ser | Asp | Gly | Ser | Thr | Asn | Tyr | Ala | Gln | Asn | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Asn | Thr | Val | 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 | Gly | Gly | Asn | Ser | Ala | Phe | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | Gln | Gly | Thr | Thr | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 183 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr





&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 219

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 186 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 165 |     |     |     |     |     | 170 |     |     |     |     |     | 175 |     |     |     |     |
| Ser | Trp | Phe | Gln | Gln | Arg | Pro | Gly | Gln | Ser | Pro | Arg | Arg | Leu | Ile | Tyr |     |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |
| Lys | Val | Ser | Asn | Trp | Gln | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Gly |     |
|     |     | 195 |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     |
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |     |
| 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |     |
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |     |
| 225 |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     |     |     | 240 |
| Phe | Gly | Gln | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser |     |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |     |
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |     |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |
| Ser | Leu | Arg | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Ser | Tyr |     |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |     |
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |     |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |     |
| 305 |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     |     |     | 320 |
| Ser | Val | Lys | Gly | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |     |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |     |
| Ala | Tyr | Leu | Gln | Met | Asn | Ser | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |     |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Val | Ser | Trp | Trp |     |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 500 505

<210> 220  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 220

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

1 5 10 15 188  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Gly Tyr  
 20 25 30  
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45  
 Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Gly Gln Asn Phe  
 50 55 60  
 Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110  
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140  
 Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160  
 Cys Arg Ser Ser Gln Ser Leu Ala Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175  
 Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190  
 Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

190

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 221  
<211> 1096  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 221

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

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

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

Ala Val Ile Ser Tyr His Gly Ser Asn Lys Tyr Tyr Ala Arg Ser Val  
 50 55 60

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

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

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

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly  
 115 120 125

Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro  
 130 135 140

Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser  
 145 150 155 160

Leu Leu His Ser Asp Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys  
 165 170 175

Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala  
 180 185 190

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe  
 195 200 205

Thr Leu Thr Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr  
 210 215 220

Cys Met Gln Ala Leu Gln Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys  
 225 230 235 240

Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu  
                   245                                  250                                  255

Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys  
                   260                                  265                                  270

Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg  
                   275                                  280                                  285

Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys  
                   290                                  295                                  300

Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe  
   305                                  310                                  315                                  320

Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn  
                   325                                  330                                  335

Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly  
                   340                                  345                                  350

Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly  
                   355                                  360                                  365

Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
   370                                  375                                  380

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

Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr  
                   405                                  410                                  415

Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro  
                   420                                  425                                  430



193  
Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro  
435 440 445

Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala  
450 455 460

Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys  
465 470 475 480

Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu  
485 490 495

Thr Val Leu Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val  
500 505 510

Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val  
515 520 525

Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His  
530 535 540

Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala  
545 550 555 560

Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly  
565 570 575

Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met  
580 585 590

Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu  
595 600 605

Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu  
610 615 620

Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|-----|
| 625 |     |     |     |     |     |     |     |     | 194 |     |     |     |     |     |     |  |  |  |  |     |
|     |     |     |     |     |     |     |     |     | 635 |     |     |     |     |     |     |  |  |  |  | 640 |
| Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg | Arg | His | Pro | Tyr | Phe | Tyr | Ala |  |  |  |  |     |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     |     | 655 |  |  |  |  |     |
| Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg | Tyr | Lys | Ala | Ala | Phe | Thr | Glu |  |  |  |  |     |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     |     | 670 |     |  |  |  |  |     |
| Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala | Cys | Leu | Leu | Pro | Lys | Leu | Asp |  |  |  |  |     |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |  |  |  |  |     |
| Glu | Leu | Arg | Asp | Glu | Gly | Lys | Ala | Ser | Ser | Ala | Lys | Gln | Arg | Leu | Lys |  |  |  |  |     |
|     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |  |  |  |  |     |
| Cys | Ala | Ser | Leu | Gln | Lys | Phe | Gly | Glu | Arg | Ala | Phe | Lys | Ala | Trp | Ala |  |  |  |  |     |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |  |  |  |  |     |
| Val | Ala | Arg | Leu | Ser | Gln | Arg | Phe | Pro | Lys | Ala | Glu | Phe | Ala | Glu | Val |  |  |  |  |     |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |  |  |  |  |     |
| Ser | Lys | Leu | Val | Thr | Asp | Leu | Thr | Lys | Val | His | Thr | Glu | Cys | Cys | His |  |  |  |  |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |  |  |  |  |     |
| Gly | Asp | Leu | Leu | Glu | Cys | Ala | Asp | Asp | Arg | Ala | Asp | Leu | Ala | Lys | Tyr |  |  |  |  |     |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |  |  |  |  |     |
| Ile | Cys | Glu | Asn | Gln | Asp | Ser | Ile | Ser | Ser | Lys | Leu | Lys | Glu | Cys | Cys |  |  |  |  |     |
|     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |  |  |  |     |
| Glu | Lys | Pro | Leu | Leu | Glu | Lys | Ser | His | Cys | Ile | Ala | Glu | Val | Glu | Asn |  |  |  |  |     |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |  |  |  |  |     |
| Asp | Glu | Met | Pro | Ala | Asp | Leu | Pro | Ser | Leu | Ala | Ala | Asp | Phe | Val | Glu |  |  |  |  |     |
|     |     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |  |  |  |  |     |
| Ser | Lys | Asp | Val | Cys | Lys | Asn | Tyr | Ala | Glu | Ala | Lys | Asp | Val | Phe | Leu |  |  |  |  |     |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |  |  |  |  |     |

Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val  
           835                                  840                                  845

Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys  
       850                                  855                                  860

Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp  
 865                                  870                                  875                                  880

Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn  
                                   885                                  890                                  895

Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu  
                                   900                                  905                                  910

Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu  
           915                                  920                                  925

Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys  
       930                                  935                                  940

His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val  
 945                                  950                                  955                                  960

Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp  
                                   965                                  970                                  975

Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys  
           980                                  985                                  990

Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn  
       995                                  1000                                  1005

Ala Gly Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu  
       1010                                  1015                                  1020

Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val  
 1025 1030 1035

Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Ala Met  
 1040 1045 1050

Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp  
 1055 1060 1065

Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala  
 1070 1075 1080

Ser Gln Ala Ala Leu Gly Leu His His His His His His  
 1085 1090 1095

<210> 222  
 <211> 1095  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 222

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr  
 65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
                     115                    120                    125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
                     130                    135                    140

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
                     145                    150                    155                    160

Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
                     165                    170                    175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
                     180                    185                    190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
                     195                    200                    205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
                     210                    215                    220

Gln Gln Ser Tyr Ser Thr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
                     225                    230                    235                    240

Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser  
                     245                    250                    255

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala  
                     260                    265                    270

Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln  
 275 280 285

Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr  
 290 295 300

Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr  
 305 310 315 320

Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn  
 325 330 335

Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn  
 340 345 350

Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr  
 355 360 365

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 370 375 380

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

Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly  
 405 410 415

Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly  
 420 425 430

Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly  
 435 440 445

Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu  
 450 455 460

199  
Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val  
465 470 475 480

Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr  
485 490 495

Val Leu Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala  
500 505 510

His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu  
515 520 525

Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val  
530 535 540

Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp  
545 550 555 560

Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp  
565 570 575

Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala  
580 585 590

Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln  
595 600 605

His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val  
610 615 620

Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys  
625 630 635 640

Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro  
645 650 655

Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys

200  
 660 665 670  
 Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu  
 675 680 685  
 Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys  
 690 695 700  
 Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val  
 705 710 715 720  
 Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser  
 725 730 735  
 Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly  
 740 745 750  
 Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile  
 755 760 765  
 Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu  
 770 775 780  
 Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp  
 785 790 795 800  
 Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser  
 805 810 815  
 Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly  
 820 825 830  
 Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val  
 835 840 845  
 Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys  
 850 855 860



Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu  
865 870 875 880

Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys  
885 890 895

Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu  
900 905 910

Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val  
915 920 925

Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His  
930 935 940

Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val  
945 950 955 960

Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg  
965 970 975

Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe  
980 985 990

Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala  
995 1000 1005

Gly Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys  
1010 1015 1020

Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys  
1025 1030 1035

His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Ala Met Asp  
1040 1045 1050

Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys  
 1055 1060 1065

Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser  
 1070 1075 1080

Gln Ala Ala Leu Gly Leu His His His His His His  
 1085 1090 1095

<210> 223

<211> 1098

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 223

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

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

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

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

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

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

Ala Arg Asp Gly Ala Thr Val Thr Ser Tyr Tyr Tyr Ser Gly Met Asp  
 100 105 110

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr  
 130 135 140

Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile  
 145 150 155 160

Thr Cys Arg Ala Ser Gln Gly Ile Ser Asn Tyr Leu Ala Trp Phe Gln  
 165 170 175

Gln Lys Pro Gly Lys Ala Pro Lys Ser Leu Ile Tyr Leu Ala Ser Ser  
 180 185 190

Leu Gln Ser Gly Val Pro Ser Lys Phe Ser Gly Ser Gly Ser Gly Thr  
 195 200 205

Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr  
 210 215 220

Tyr Tyr Cys Gln Gln Tyr Asn Phe Tyr Pro Phe Thr Phe Gly Pro Gly  
 225 230 235 240

Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu  
 245 250 255

Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu  
 260 265 270

Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp  
 275 280 285

Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg  
 290 295 300

Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp  
 305 310 315 320

Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln  
 325 330 335

Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg  
 340 345 350

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly  
 355 360 365

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro  
 385 390 395 400

Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser  
 405 410 415

Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln  
 420 425 430

Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu  
 435 440 445

Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys  
 450 455 460

Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr  
 465 470 475 480

Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr  
 485 490 495

Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser  
500 505 510

Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala  
515 520 525

Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu  
530 535 540

Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys  
545 550 555 560

Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu  
565 570 575

Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly  
580 585 590

Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys  
595 600 605

Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg  
610 615 620

Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr  
625 630 635 640

Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe  
645 650 655

Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe  
660 665 670

Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys  
675 680 685

Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 690        |            |            |            |            | 695        |            |            |            |            | 206        |            |            |            |            | 700        |  |  |  |  |
| Leu<br>705 | Lys        | Cys        | Ala        | Ser        | Leu<br>710 | Gln        | Lys        | Phe        | Gly        | Glu<br>715 | Arg        | Ala        | Phe        | Lys        | Ala<br>720 |  |  |  |  |
| Trp        | Ala        | Val        | Ala        | Arg<br>725 | Leu        | Ser        | Gln        | Arg        | Phe<br>730 | Pro        | Lys        | Ala        | Glu        | Phe<br>735 | Ala        |  |  |  |  |
| Glu        | Val        | Ser        | Lys<br>740 | Leu        | Val        | Thr        | Asp        | Leu<br>745 | Thr        | Lys        | Val        | His        | Thr<br>750 | Glu        | Cys        |  |  |  |  |
| Cys        | His        | Gly<br>755 | Asp        | Leu        | Leu        | Glu<br>760 | Cys        | Ala        | Asp        | Asp        | Arg        | Ala<br>765 | Asp        | Leu        | Ala        |  |  |  |  |
| Lys        | Tyr<br>770 | Ile        | Cys        | Glu        | Asn        | Gln<br>775 | Asp        | Ser        | Ile        | Ser        | Ser<br>780 | Lys        | Leu        | Lys        | Glu        |  |  |  |  |
| Cys<br>785 | Cys        | Glu        | Lys        | Pro        | Leu<br>790 | Leu        | Glu        | Lys        | Ser        | His<br>795 | Cys        | Ile        | Ala        | Glu        | Val<br>800 |  |  |  |  |
| Glu        | Asn        | Asp        | Glu        | Met<br>805 | Pro        | Ala        | Asp        | Leu        | Pro<br>810 | Ser        | Leu        | Ala        | Ala        | Asp<br>815 | Phe        |  |  |  |  |
| Val        | Glu        | Ser        | Lys<br>820 | Asp        | Val        | Cys        | Lys        | Asn<br>825 | Tyr        | Ala        | Glu        | Ala        | Lys<br>830 | Asp        | Val        |  |  |  |  |
| Phe        | Leu        | Gly<br>835 | Met        | Phe        | Leu        | Tyr        | Glu<br>840 | Tyr        | Ala        | Arg        | Arg        | His<br>845 | Pro        | Asp        | Tyr        |  |  |  |  |
| Ser<br>850 | Val        | Val        | Leu        | Leu        | Leu        | Arg<br>855 | Leu        | Ala        | Lys        | Thr        | Tyr<br>860 | Glu        | Thr        | Thr        | Leu        |  |  |  |  |
| Glu<br>865 | Lys        | Cys        | Cys        | Ala        | Ala<br>870 | Ala        | Asp        | Pro        | His        | Glu<br>875 | Cys        | Tyr        | Ala        | Lys        | Val<br>880 |  |  |  |  |
| Phe        | Asp        | Glu        | Phe        | Lys<br>885 | Pro        | Leu        | Val        | Glu        | Glu<br>890 | Pro        | Gln        | Asn        | Leu        | Ile<br>895 | Lys        |  |  |  |  |

Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn  
 900 905 910

Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro  
 915 920 925

Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys  
 930 935 940

Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu  
 945 950 955 960

Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val  
 965 970 975

Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg  
 980 985 990

Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu  
 995 1000 1005

Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu  
 1010 1015 1020

Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu  
 1025 1030 1035

Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala  
 1040 1045 1050

Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala  
 1055 1060 1065

Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
 1070 1075 1080

Ala Ala Ser Gln Ala Ala Leu Gly Leu His His His His His His  
 1085 1090 1095

<210> 224  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 224

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140



Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

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

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
530 535 211 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 212 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 725 |     |     |     |     |     | 730 |     |     |     |     |     | 735 |     |     |     |
| Val | Thr | Asp | Leu | Thr | Lys | Val | His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu |
|     |     |     | 740 |     |     |     |     |     | 745 |     |     | 750 |     |     |     |
| Leu | Glu | Cys | Ala | Asp | Asp | Arg | Ala | Asp | Leu | Ala | Lys | Tyr | Ile | Cys | Glu |
|     |     |     | 755 |     |     |     |     |     | 760 |     |     | 765 |     |     |     |
| Asn | Gln | Asp | Ser | Ile | Ser | Ser | Lys | Leu | Lys | Glu | Cys | Cys | Glu | Lys | Pro |
|     |     |     | 770 |     |     |     |     |     | 775 |     |     | 780 |     |     |     |
| Leu | Leu | Glu | Lys | Ser | His | Cys | Ile | Ala | Glu | Val | Glu | Asn | Asp | Glu | Met |
|     |     |     | 785 |     |     |     |     |     | 790 |     |     | 795 |     |     |     |
| Pro | Ala | Asp | Leu | Pro | Ser | Leu | Ala | Ala | Asp | Phe | Val | Glu | Ser | Lys | Asp |
|     |     |     | 805 |     |     |     |     |     | 810 |     |     | 815 |     |     |     |
| Val | Cys | Lys | Asn | Tyr | Ala | Glu | Ala | Lys | Asp | Val | Phe | Leu | Gly | Met | Phe |
|     |     |     | 820 |     |     |     |     |     | 825 |     |     | 830 |     |     |     |
| Leu | Tyr | Glu | Tyr | Ala | Arg | Arg | His | Pro | Asp | Tyr | Ser | Val | Val | Leu | Leu |
|     |     |     | 835 |     |     |     |     |     | 840 |     |     | 845 |     |     |     |
| Leu | Arg | Leu | Ala | Lys | Thr | Tyr | Glu | Thr | Thr | Leu | Glu | Lys | Cys | Cys | Ala |
|     |     |     | 850 |     |     |     |     |     | 855 |     |     | 860 |     |     |     |
| Ala | Ala | Asp | Pro | His | Glu | Cys | Tyr | Ala | Lys | Val | Phe | Asp | Glu | Phe | Lys |
|     |     |     | 865 |     |     |     |     |     | 870 |     |     | 875 |     |     |     |
| Pro | Leu | Val | Glu | Glu | Pro | Gln | Asn | Leu | Ile | Lys | Gln | Asn | Cys | Glu | Leu |
|     |     |     | 885 |     |     |     |     |     | 890 |     |     | 895 |     |     |     |
| Phe | Glu | Gln | Leu | Gly | Glu | Tyr | Lys | Phe | Gln | Asn | Ala | Leu | Leu | Val | Arg |
|     |     |     | 900 |     |     |     |     |     | 905 |     |     | 910 |     |     |     |
| Tyr | Thr | Lys | Lys | Val | Pro | Gln | Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val |
|     |     |     | 915 |     |     |     |     |     | 920 |     |     | 925 |     |     |     |

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
 965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
 980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
 995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
 1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
 1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
 1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
 1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
 1070 1075 1080

Ala Leu Gly Leu His His His His His His  
 1085 1090

<210> 225

<211> 1093

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 225

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560



Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu

218

755

760

765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
                   965                                  970                                  975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
                   980                                  985                                  990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
                   995                                  1000                                  1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
           1010                                  1015                                  1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
           1025                                  1030                                  1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
           1040                                  1045                                  1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
           1055                                  1060                                  1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
           1070                                  1075                                  1080

Ala Leu Gly Leu His His His His His His  
           1085                                  1090

<210> 226

<211> 1093

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 226

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

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

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590

223  
Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 785 |     | 790 |     | 224<br>795 |     | 800 |     |     |     |     |     |     |     |     |     |
| Pro | Ala | Asp | Leu | Pro        | Ser | Leu | Ala | Ala | Asp | Phe | Val | Glu | Ser | Lys | Asp |
|     |     |     |     | 805        |     |     |     |     | 810 |     |     |     |     | 815 |     |
| Val | Cys | Lys | Asn | Tyr        | Ala | Glu | Ala | Lys | Asp | Val | Phe | Leu | Gly | Met | Phe |
|     |     |     | 820 |            |     |     |     | 825 |     |     |     |     | 830 |     |     |
| Leu | Tyr | Glu | Tyr | Ala        | Arg | Arg | His | Pro | Asp | Tyr | Ser | Val | Val | Leu | Leu |
|     |     | 835 |     |            |     |     | 840 |     |     |     |     | 845 |     |     |     |
| Leu | Arg | Leu | Ala | Lys        | Thr | Tyr | Glu | Thr | Thr | Leu | Glu | Lys | Cys | Cys | Ala |
|     | 850 |     |     |            |     | 855 |     |     |     |     | 860 |     |     |     |     |
| Ala | Ala | Asp | Pro | His        | Glu | Cys | Tyr | Ala | Lys | Val | Phe | Asp | Glu | Phe | Lys |
| 865 |     |     |     |            | 870 |     |     |     |     | 875 |     |     |     |     | 880 |
| Pro | Leu | Val | Glu | Glu        | Pro | Gln | Asn | Leu | Ile | Lys | Gln | Asn | Cys | Glu | Leu |
|     |     |     |     | 885        |     |     |     |     | 890 |     |     |     |     | 895 |     |
| Phe | Glu | Gln | Leu | Gly        | Glu | Tyr | Lys | Phe | Gln | Asn | Ala | Leu | Leu | Val | Arg |
|     |     |     | 900 |            |     |     |     | 905 |     |     |     |     | 910 |     |     |
| Tyr | Thr | Lys | Lys | Val        | Pro | Gln | Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val |
|     |     | 915 |     |            |     |     | 920 |     |     |     |     | 925 |     |     |     |
| Ser | Arg | Asn | Leu | Gly        | Lys | Val | Gly | Ser | Lys | Cys | Cys | Lys | His | Pro | Glu |
|     | 930 |     |     |            |     | 935 |     |     |     |     | 940 |     |     |     |     |
| Ala | Lys | Arg | Met | Pro        | Cys | Ala | Glu | Asp | Tyr | Leu | Ser | Val | Val | Leu | Asn |
| 945 |     |     |     |            | 950 |     |     |     |     | 955 |     |     |     |     | 960 |
| Gln | Leu | Cys | Val | Leu        | His | Glu | Lys | Thr | Pro | Val | Ser | Asp | Arg | Val | Thr |
|     |     |     |     | 965        |     |     |     |     | 970 |     |     |     |     | 975 |     |
| Lys | Cys | Cys | Thr | Glu        | Ser | Leu | Val | Asn | Arg | Arg | Pro | Cys | Phe | Ser | Ala |
|     |     |     | 980 |            |     |     |     | 985 |     |     |     |     | 990 |     |     |



Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
 995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
 1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
 1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
 1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
 1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
 1070 1075 1080

Ala Leu Gly Leu His His His His His His  
 1085 1090

<210> 227  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 227

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

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

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile

35

40

45

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe

[illegible]

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
 1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
 1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
 1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
 1070 1075 1080

Ala Leu Gly Leu His His His His His His  
 1085 1090

<210> 228  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 228

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

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

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

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

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Leu Ser Leu

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 65  |     | 70  |     | 232 |     | 80  |
|     |     |     |     | 75  |     |     |
| Lys | Leu | Ser | Ser | Val | Thr | Ala |
|     |     |     |     | 85  |     | Ala |
|     |     |     |     |     | Thr | Ala |
|     |     |     |     |     | 90  | Val |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | 95  |
| Ala |     |     |     |     |     |     |
| Arg | Ile | Ala | Val | Ala | Gly | Phe |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | 105 |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 110 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
| Leu | Val | Thr | Val | Ser | Ser | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 120 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 125 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ser |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile |
|     |     |     |     |     |     | 135 |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 140 |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
| Gly | Gly | Gly | Gly | Ser | Glu | Arg |
|     |     |     |     |     |     | 150 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 155 |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 160 |
| Ser | Leu | Ser | Pro | Gly | Glu | Arg |
|     |     |     |     |     |     | 150 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 155 |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 160 |
| Ser | Val | Asn | Lys | Asn | Tyr | Leu |
|     |     |     |     |     |     | 165 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 175 |
| Ala | Pro | Arg | Leu | Leu | Ile | Tyr |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 180 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | 190 |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 200 |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | 205 |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Thr |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu |
|     |     |     |     |     |     | 215 |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | 220 |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 210 |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr |
|     |     |     |     |     |     | 230 |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 235 |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | 240 |
| Lys | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | 245 |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | 250 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 255 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |
| Gly | Leu | Val | Gln | Pro | Gly | Gly |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 260 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | 265 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Cys |
|     |     |     |     |     |     | 270 |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Ser |



Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
           275                                  280                                  285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
       290                                  295                                  300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
   305                                  310                                  315                                  320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
                                   325                                  330                                  335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
                                   340                                  345                                  350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
                                   355                                  360                                  365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
       370                                  375                                  380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
                                   405                                  410                                  415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
                                   420                                  425                                  430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
                                   435                                  440                                  445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
       450                                  455                                  460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670 235

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala

|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
|-----|------|-----|-----|-----|-----|------|------|-----|-----|-----|------|------|-----|-----|-----|--|--|--|--|-----|--|--|--|--|
|     |      |     |     |     | 850 |      |      |     |     | 855 |      |      |     |     | 236 |  |  |  |  | 860 |  |  |  |  |
| Ala | Ala  | Asp | Pro | His | Glu | Cys  | Tyr  | Ala | Lys | Val | Phe  | Asp  | Glu | Phe | Lys |  |  |  |  |     |  |  |  |  |
| 865 |      |     |     |     | 870 |      |      |     |     | 875 |      |      |     |     | 880 |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Pro | Leu  | Val | Glu | Glu | Pro | Gln  | Asn  | Leu | Ile | Lys | Gln  | Asn  | Cys | Glu | Leu |  |  |  |  |     |  |  |  |  |
|     |      |     |     | 885 |     |      |      |     | 890 |     |      |      |     | 895 |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Phe | Glu  | Gln | Leu | Gly | Glu | Tyr  | Lys  | Phe | Gln | Asn | Ala  | Leu  | Leu | Val | Arg |  |  |  |  |     |  |  |  |  |
|     |      |     | 900 |     |     |      |      | 905 |     |     |      |      |     | 910 |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Tyr | Thr  | Lys | Lys | Val | Pro | Gln  | Val  | Ser | Thr | Pro | Thr  | Leu  | Val | Glu | Val |  |  |  |  |     |  |  |  |  |
|     |      | 915 |     |     |     |      | 920  |     |     |     |      |      | 925 |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Ser | Arg  | Asn | Leu | Gly | Lys | Val  | Gly  | Ser | Lys | Cys | Cys  | Lys  | His | Pro | Glu |  |  |  |  |     |  |  |  |  |
|     | 930  |     |     |     |     | 935  |      |     |     |     | 940  |      |     |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Ala | Lys  | Arg | Met | Pro | Cys | Ala  | Glu  | Asp | Tyr | Leu | Ser  | Val  | Val | Leu | Asn |  |  |  |  |     |  |  |  |  |
| 945 |      |     |     |     | 950 |      |      |     |     | 955 |      |      |     |     | 960 |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Gln | Leu  | Cys | Val | Leu | His | Glu  | Lys  | Thr | Pro | Val | Ser  | Asp  | Arg | Val | Thr |  |  |  |  |     |  |  |  |  |
|     |      |     |     | 965 |     |      |      |     | 970 |     |      |      |     | 975 |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Lys | Cys  | Cys | Thr | Glu | Ser | Leu  | Val  | Asn | Arg | Arg | Pro  | Cys  | Phe | Ser | Ala |  |  |  |  |     |  |  |  |  |
|     |      |     | 980 |     |     |      |      | 985 |     |     |      |      | 990 |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Leu | Glu  | Val | Asp | Glu | Thr | Tyr  | Val  | Pro | Lys | Glu | Phe  | Asn  | Ala | Glu | Thr |  |  |  |  |     |  |  |  |  |
|     |      | 995 |     |     |     |      | 1000 |     |     |     |      | 1005 |     |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Phe | Thr  | Phe | His | Ala | Asp | Ile  | Cys  | Thr | Leu | Ser | Glu  | Lys  | Glu | Arg |     |  |  |  |  |     |  |  |  |  |
|     | 1010 |     |     |     |     | 1015 |      |     |     |     | 1020 |      |     |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Gln | Ile  | Lys | Lys | Gln | Thr | Ala  | Leu  | Val | Glu | Leu | Val  | Lys  | His | Lys |     |  |  |  |  |     |  |  |  |  |
|     | 1025 |     |     |     |     | 1030 |      |     |     |     | 1035 |      |     |     |     |  |  |  |  |     |  |  |  |  |
|     |      |     |     |     |     |      |      |     |     |     |      |      |     |     |     |  |  |  |  |     |  |  |  |  |
| Pro | Lys  | Ala | Thr | Lys | Glu | Gln  | Leu  | Lys | Ala | Val | Met  | Asp  | Asp | Phe |     |  |  |  |  |     |  |  |  |  |
|     | 1040 |     |     |     |     | 1045 |      |     |     |     | 1050 |      |     |     |     |  |  |  |  |     |  |  |  |  |

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
 1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
 1070 1075 1080

Ala Leu Gly Leu His His His His His His  
 1085 1090

<210> 229  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 229

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

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

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

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

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

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 238 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 100 |     |     |     |     |     | 105 |     |     |     |     |     | 110 |     |     |     |
| Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     | 115 |     |     |     | 120 |     |     |     |     |     | 125 |     |     |     |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile | Val | Leu | Thr | Gln | Ser | Pro | Gly | Thr | Leu |
| 130 |     |     |     |     |     | 135 |     |     |     | 140 |     |     |     |     |     |
| Ser | Leu | Ser | Pro | Gly | Glu | Ser | Ala | Thr | Leu | Ser | Cys | Arg | Ala | Ser | Gln |
| 145 |     |     |     | 150 |     |     |     |     |     | 155 |     |     |     | 160 |     |
| Ser | Val | Asn | Lys | Asn | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Gln |
|     |     |     |     | 165 |     |     |     | 170 |     |     |     |     |     | 175 |     |
| Ala | Pro | Arg | Leu | Leu | Ile | Tyr | Gly | Ala | Ser | Ser | Arg | Ala | Thr | Gly | Ile |
|     |     | 180 |     |     |     |     |     | 185 |     |     |     | 190 |     |     |     |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu | Asp | Phe | Ala | Val | Tyr | Tyr | Cys | Gln | Gln |
| 210 |     |     |     |     |     | 215 |     |     |     | 220 |     |     |     |     |     |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr | Phe | Gly | Gly | Gly | Thr | Arg | Leu | Glu | Ile |
| 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |
| Lys | Ser | Gly | Gly | Gly | Gly | Ser | Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly |
|     |     |     |     | 245 |     |     |     | 250 |     |     |     |     |     | 255 |     |
| Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser |
|     |     | 260 |     |     |     |     |     | 265 |     |     |     | 270 |     |     |     |
| Gly | Phe | Thr | Phe | Asn | Lys | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro |
|     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn |
| 290 |     |     |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
                   500                                  505                                  510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
                   515                                  520                                  525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
                   530                                  535                                  540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545                                  550                                  555                                  560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
                                   565                                  570                                  575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
                   580                                  585                                  590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
                   595                                  600                                  605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610                                  615                                  620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625                                  630                                  635                                  640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
                                   645                                  650                                  655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
                   660                                  665                                  670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
                   675                                  680                                  685



Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700 241

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu

242

885

890

895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
 965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
 980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
 995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
 1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
 1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
 1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
 1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
 1070 1075 1080

Ala Leu Gly Leu His His His His His His  
 1085 1090

<210> 230  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 230

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
 100 105 110

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

Gly Gly Gly Gly Ser Glu Ile Val Met Thr Gln Ser Pro Gly Thr Leu

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 130        |            |            |            |            | 135        |            |            |            |            | 244        |            |            |            |            | 140        |  |  |  |  |
| Ser<br>145 | Leu        | Ser        | Pro        | Gly        | Glu<br>150 | Arg        | Ala        | Thr        | Leu        | Ser<br>155 | Cys        | Arg        | Ala        | Ser        | Gln<br>160 |  |  |  |  |
| Ser        | Val        | Ser        | Arg        | Gly<br>165 | Tyr        | Leu        | Ala        | Trp        | Tyr<br>170 | Gln        | Gln        | Lys        | Pro        | Gly<br>175 | Gln        |  |  |  |  |
| Ala        | Pro        | Arg        | Leu<br>180 | Leu        | Ile        | Tyr        | Gly        | Ala<br>185 | Ser        | Ser        | Arg        | Ala        | Thr<br>190 | Asp        | Ile        |  |  |  |  |
| Pro        | Asp        | Arg<br>195 | Phe        | Ser        | Gly        | Ser        | Gly<br>200 | Ser        | Gly        | Thr        | Asp        | Phe<br>205 | Thr        | Leu        | Thr        |  |  |  |  |
| Ile        | Ser<br>210 | Arg        | Leu        | Glu        | Pro        | Glu<br>215 | Asp        | Phe        | Ala        | Val        | Tyr<br>220 | Tyr        | Cys        | Gln        | Gln        |  |  |  |  |
| Tyr<br>225 | Asp        | Thr        | Ser        | Pro        | Ile<br>230 | Thr        | Phe        | Gly        | Gln        | Gly<br>235 | Thr        | Lys        | Val        | Glu        | Ile<br>240 |  |  |  |  |
| Lys        | Ser        | Gly        | Gly        | Gly<br>245 | Gly        | Ser        | Glu        | Val        | Gln<br>250 | Leu        | Val        | Glu        | Ser        | Gly<br>255 | Gly        |  |  |  |  |
| Gly        | Leu        | Val<br>260 | Gln        | Pro        | Gly        | Gly        | Ser        | Leu<br>265 | Lys        | Leu        | Ser        | Cys        | Ala<br>270 | Ala        | Ser        |  |  |  |  |
| Gly        | Phe        | Thr<br>275 | Phe        | Asn        | Lys        | Tyr        | Ala<br>280 | Met        | Asn        | Trp        | Val        | Arg<br>285 | Gln        | Ala        | Pro        |  |  |  |  |
| Gly<br>290 | Lys        | Gly        | Leu        | Glu        | Trp        | Val<br>295 | Ala        | Arg        | Ile        | Arg        | Ser<br>300 | Lys        | Tyr        | Asn        | Asn        |  |  |  |  |
| Tyr<br>305 | Ala        | Thr        | Tyr        | Tyr        | Ala<br>310 | Asp        | Ser        | Val        | Lys        | Asp<br>315 | Arg        | Phe        | Thr        | Ile        | Ser<br>320 |  |  |  |  |
| Arg        | Asp        | Asp        | Ser        | Lys<br>325 | Asn        | Thr        | Ala        | Tyr        | Leu<br>330 | Gln        | Met        | Asn        | Asn        | Leu<br>335 | Lys        |  |  |  |  |

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
 500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
 660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720

247  
Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val

248

915

920

925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 231

<211> 1100



&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 231

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

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

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

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

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

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

Tyr Cys Thr Ala Arg Gly Trp Tyr Gly Asp Tyr Phe Asp Tyr Trp Gly  
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro  
 130 135 140

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
 145 150 155 160

Ser Ser Gln Ser Leu Leu His Ser Asn Gly Tyr Asn Tyr Leu Asp Trp

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 250 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 165 |     |     |     |     |     |     |     | 170 |     |     |     | 175 |     |     |     |  |
| Tyr | Leu | Gln | Lys | Pro | Gly | Gln | Ser | Pro | Gln | Leu | Leu | Ile | Tyr | Leu | Gly |  |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |  |
| Ser | Asn | Arg | Ala | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Ser |  |
|     |     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |  |
| Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu | Asp | Val |  |
|     |     | 210 |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |
| Gly | Ile | Tyr | Tyr | Cys | Met | Gln | Ala | Leu | Gln | Thr | Pro | Phe | Thr | Phe | Gly |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Pro | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser | Glu | Val |  |
|     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |  |
| Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser | Leu |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr | Ala | Met |  |
|     |     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |  |
| Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg |  |
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |  |
| Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |  |
| Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr |  |
|     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |  |

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 370 375 380

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr Gln  
 385 390 395 400

Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr Cys  
 405 410 415

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp Val  
 420 425 430

Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr Lys  
 435 440 445

Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu Gly  
 450 455 460

Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu Ala  
 465 470 475 480

Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly  
 485 490 495

Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp Ala His  
 500 505 510

Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe  
 515 520 525

Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro  
 530 535 540

Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys  
 545 550 555 560

Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His  
 565 570 575

Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr  
 580 585 590

Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn  
 595 600 605

Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu  
 610 615 620

Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu  
 625 630 635 640

Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro  
 645 650 655

Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala  
 660 665 670

Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu  
 675 680 685

Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys  
 690 695 700

Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe  
 705 710 715 720

Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu  
 725 730 735

Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His Thr  
 740 745 750

253  
Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp  
755 760 765

Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu  
770 775 780

Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala  
785 790 795 800

Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala  
805 810 815

Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys  
820 825 830

Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro  
835 840 845

Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr  
850 855 860

Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala  
865 870 875 880

Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu  
885 890 895

Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe  
900 905 910

Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser  
915 920 925

Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser  
930 935 940

Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp

|     |      |     |     |            |     |      |      |     |     |     |      |     |      |     |     |
|-----|------|-----|-----|------------|-----|------|------|-----|-----|-----|------|-----|------|-----|-----|
| 945 |      | 950 |     | 254<br>955 |     | 960  |      |     |     |     |      |     |      |     |     |
| Tyr | Leu  | Ser | Val | Val        | Leu | Asn  | Gln  | Leu | Cys | Val | Leu  | His | Glu  | Lys | Thr |
|     |      |     | 965 |            |     |      |      |     | 970 |     |      |     |      | 975 |     |
| Pro | Val  | Ser | Asp | Arg        | Val | Thr  | Lys  | Cys | Cys | Thr | Glu  | Ser | Leu  | Val | Asn |
|     |      |     | 980 |            |     |      |      | 985 |     |     |      |     |      | 990 |     |
| Arg | Arg  | Pro | Cys | Phe        | Ser | Ala  | Leu  | Glu | Val | Asp | Glu  | Thr | Tyr  | Val | Pro |
|     |      | 995 |     |            |     |      | 1000 |     |     |     |      |     | 1005 |     |     |
| Lys | Glu  | Phe | Asn | Ala        | Glu | Thr  | Phe  | Thr | Phe | His | Ala  | Asp | Ile  | Cys |     |
|     | 1010 |     |     |            |     | 1015 |      |     |     |     | 1020 |     |      |     |     |
| Thr | Leu  | Ser | Glu | Lys        | Glu | Arg  | Gln  | Ile | Lys | Lys | Gln  | Thr | Ala  | Leu |     |
|     | 1025 |     |     |            |     | 1030 |      |     |     |     | 1035 |     |      |     |     |
| Val | Glu  | Leu | Val | Lys        | His | Lys  | Pro  | Lys | Ala | Thr | Lys  | Glu | Gln  | Leu |     |
|     | 1040 |     |     |            |     | 1045 |      |     |     |     | 1050 |     |      |     |     |
| Lys | Ala  | Val | Met | Asp        | Asp | Phe  | Ala  | Ala | Phe | Val | Glu  | Lys | Cys  | Cys |     |
|     | 1055 |     |     |            |     | 1060 |      |     |     |     | 1065 |     |      |     |     |
| Lys | Ala  | Asp | Asp | Lys        | Glu | Thr  | Cys  | Phe | Ala | Glu | Glu  | Gly | Lys  | Lys |     |
|     | 1070 |     |     |            |     | 1075 |      |     |     |     | 1080 |     |      |     |     |
| Leu | Val  | Ala | Ala | Ser        | Gln | Ala  | Ala  | Leu | Gly | Leu | His  | His | His  | His |     |
|     | 1085 |     |     |            |     | 1090 |      |     |     |     | 1095 |     |      |     |     |
| His | His  |     |     |            |     |      |      |     |     |     |      |     |      |     |     |
|     | 1100 |     |     |            |     |      |      |     |     |     |      |     |      |     |     |

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 <211> 1101  
 <212> PRT  
 <213> Artificial Sequence

<220>

&lt;223&gt; Synthetic peptide

&lt;400&gt; 232

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

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

Ala Val Ile Ser Ser His Gly Ser Asn Lys Asn Tyr Ala Arg Ser Val  
 50 55 60

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

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

Ala Arg Asp Gly Tyr Ser Gly Asn Asp Pro Phe Tyr Tyr Tyr Tyr His  
 100 105 110

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

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile  
 130 135 140

Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg  
 145 150 155 160

Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn  
 165 170 175

Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 180 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 185 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 256 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 190 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ala | Ser | Ser | Leu | Gln | Ser | Gly | Val | Pro | Ser | Arg | Phe | Ser | Gly | Ser | Gly |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 195 |     |     |     |     |     | 200 |     |     |     | 205 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ser | Gly | Thr | Asp | Phe | Ser | Leu | Thr | Ile | Ser | Ser | Leu | Gln | Pro | Glu | Asp |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 210 |     |     |     | 215 |     |     |     | 220 |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phe | Ala | Thr | Tyr | Tyr | Cys | Gln | Gln | Ser | Phe | Thr | Thr | Pro | Leu | Thr | Phe |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     | 240 |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gly | Gly | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser | Glu |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     |     | 250 |     |     |     | 255 |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 260 |     |     |     | 265 |     |     |     | 270 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr | Ala |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 275 |     |     |     |     |     | 280 |     |     |     | 285 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 290 |     |     |     | 295 |     |     |     | 300 |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 305 |     | 310 |     |     |     |     |     | 315 |     |     |     | 320 |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 325 |     |     |     | 330 |     |     |     | 335 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 340 |     |     |     |     |     | 345 |     |     |     | 350 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cys | Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 355 |     |     |     | 360 |     |     |     |     |     | 365 |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|     |     | 370 |     |     |     | 375 |     |     |     | 380 |     |     |     |     |     |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val Thr  
 385 390 395 400

Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu Thr  
 405 410 415

Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn Trp  
 420 425 430

Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly Thr  
 435 440 445

Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu Leu  
 450 455 460

Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp Glu  
 465 470 475 480

Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly  
 485 490 495

Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp Ala  
 500 505 510

His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn  
 515 520 525

Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys  
 530 535 540

Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala  
 545 550 555 560

Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu  
 565 570 575

His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu  
 580 585 590

Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg  
 595 600 605

Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg  
 610 615 620

Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn  
 625 630 635 640

Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His  
 645 650 655

Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys  
 660 665 670

Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu  
 675 680 685

Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala  
 690 695 700

Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala  
 705 710 715 720

Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala  
 725 730 735

Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His  
 740 745 750

Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala  
 755 760 765

259  
Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys  
770 775 780

Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile  
785 790 795 800

Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala  
805 810 815

Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala  
820 825 830

Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His  
835 840 845

Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu  
850 855 860

Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr  
865 870 875 880

Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn  
885 890 895

Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys  
900 905 910

Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val  
915 920 925

Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly  
930 935 940

Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu  
945 950 955 960

Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys

965 260 970 975

Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val  
980 985 990

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

Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile  
1010 1015 1020

Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
1025 1030 1035

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln  
1040 1045 1050

Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys  
1055 1060 1065

Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys  
1070 1075 1080

Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His His  
1085 1090 1095

His His His  
1100

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<211> 1102  
<212> PRT  
<213> Artificial Sequence

<220>  
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<400> 233

261

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     | 195 |     |     | 200 |     |     | 262 |     |     | 205 |     |     |     |  |  |
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |  |  |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |  |  |
| Asp | Val | Gly | Val | Tyr | Phe | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |
| Phe | Gly | Gln | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |  |
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |  |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |  |
| Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr |  |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |  |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |
| Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |
| Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |
| Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |
| Ala | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |
| Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
 610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
 645 650 655

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
 660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
 675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
 690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
 705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
 725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
 740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
 755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
 770 775 780



Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu <sup>265</sup> Leu Glu Lys Ser His Cys  
 785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
 805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
 820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
 835 840 845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
 850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
 865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
 885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
 900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
 915 920 925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
 930 935 940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
 945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
 965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu

266

980

985

990

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
 1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
 1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
 1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
 1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
 1085 1090 1095

His His His His  
 1100

<210> 234  
 <211> 1102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 234

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

267

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 210        |            |            |            |            | 215        |            |            |            |            | 268        |            |            |            |            | 220        |  |  |  |  |
| Asp<br>225 | Val        | Gly        | Val        | Tyr        | Tyr<br>230 | Cys        | Met        | Gln        | Gly        | Thr<br>235 | His        | Trp        | Pro        | Pro        | Thr<br>240 |  |  |  |  |
| Phe        | Gly        | Gln        | Gly        | Thr<br>245 | Lys        | Val        | Glu        | Ile        | Lys<br>250 | Ser        | Gly        | Gly        | Gly        | Gly        | Ser        |  |  |  |  |
| Glu        | Val        | Gln        | Leu<br>260 | Val        | Glu        | Ser        | Gly        | Gly<br>265 | Gly        | Leu        | Val        | Gln        | Pro<br>270 | Gly        | Gly        |  |  |  |  |
| Ser        | Leu        | Lys<br>275 | Leu        | Ser        | Cys        | Ala<br>280 | Ala        | Ser        | Gly        | Phe        | Thr<br>285 | Phe        | Asn        | Lys        | Tyr        |  |  |  |  |
| Ala        | Met<br>290 | Asn        | Trp        | Val        | Arg        | Gln<br>295 | Ala        | Pro        | Gly        | Lys        | Gly<br>300 | Leu        | Glu        | Trp        | Val        |  |  |  |  |
| Ala<br>305 | Arg        | Ile        | Arg        | Ser        | Lys<br>310 | Tyr        | Asn        | Asn        | Tyr        | Ala<br>315 | Thr        | Tyr        | Tyr        | Ala        | Asp<br>320 |  |  |  |  |
| Ser        | Val        | Lys        | Asp        | Arg<br>325 | Phe        | Thr        | Ile        | Ser        | Arg<br>330 | Asp        | Asp        | Ser        | Lys        | Asn<br>335 | Thr        |  |  |  |  |
| Ala        | Tyr        | Leu        | Gln<br>340 | Met        | Asn        | Asn        | Leu        | Lys<br>345 | Thr        | Glu        | Asp        | Thr        | Ala<br>350 | Val        | Tyr        |  |  |  |  |
| Tyr        | Cys        | Val<br>355 | Arg        | His        | Gly        | Asn        | Phe<br>360 | Gly        | Asn        | Ser        | Tyr        | Ile<br>365 | Ser        | Tyr        | Trp        |  |  |  |  |
| Ala        | Tyr<br>370 | Trp        | Gly        | Gln        | Gly        | Thr<br>375 | Leu        | Val        | Thr        | Val        | Ser<br>380 | Ser        | Gly        | Gly        | Gly        |  |  |  |  |
| Gly<br>385 | Ser        | Gly        | Gly        | Gly        | Gly<br>390 | Ser        | Gly        | Gly        | Gly        | Gly<br>395 | Ser        | Gln        | Thr        | Val        | Val<br>400 |  |  |  |  |
| Thr        | Gln        | Glu        | Pro        | Ser<br>405 | Leu        | Thr        | Val        | Ser        | Pro<br>410 | Gly        | Gly        | Thr        | Val        | Thr<br>415 | Leu        |  |  |  |  |

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

270

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
645 650 655

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
770 775 780

Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
 805 810 271 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
 820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
 835 840 845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
 850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
 865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
 885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
 900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
 915 920 925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
 930 935 940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
 945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
 965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
 980 985 990

Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr

272

995

1000

1005

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
1085 1090 1095

His His His His  
1100

<210> 235  
<211> 1102  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 235

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

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



Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45 273

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Ala Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr

|     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|
| 225 |     | 230 |     | 274 |     | 240 |
|     |     |     |     | 235 |     |     |
| Phe | Gly | Gln | Gly | Thr | Lys | Val |
|     |     |     |     | 245 |     |     |
|     |     |     |     |     | Ile | Lys |
|     |     |     |     |     | 250 |     |
|     |     |     |     |     | Ser | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | 255 |
| Glu | Val | Gln | Leu | Val | Glu | Ser |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 265 |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 270 |
| Ser | Leu | Lys | Leu | Ser | Cys | Ala |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | 280 |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | 285 |
| Ala | Met | Asn | Trp | Val | Arg | Gln |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | 295 |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | 300 |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     |     |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | 320 |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | 315 |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     |     |
| Ser | Val | Lys | Asp | Arg | Phe | Thr |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Arg |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | 335 |
| Ala | Tyr | Leu | Gln | Met | Asn | Asn |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Lys |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Glu |
|     |     |     |     |     |     | Asp |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     |     |
| Tyr | Cys | Val | Arg | His | Gly | Asn |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Phe |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Ile |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Trp |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | 360 |
|     |     |     |     |     |     | 365 |
| Ala | Tyr | Trp | Gly | Gln | Gly | Thr |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | 375 |
|     |     |     |     |     |     | 380 |
| Gly | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Gln |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | 390 |
|     |     |     |     |     |     | 395 |
|     |     |     |     |     |     | 400 |
| Thr | Gln | Glu | Pro | Ser | Leu | Thr |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Leu |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | 410 |
|     |     |     |     |     |     | 415 |
| Thr | Cys | Gly | Ser | Ser | Thr | Gly |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | Ala |
|     |     |     |     |     |     | Val |
|     |     |     |     |     |     | Thr |
|     |     |     |     |     |     | Ser |
|     |     |     |     |     |     | Gly |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     | Tyr |
|     |     |     |     |     |     | Pro |
|     |     |     |     |     |     | Asn |
|     |     |     |     |     |     |     |
|     |     |     |     |     |     | 420 |
|     |     |     |     |     |     | 425 |
|     |     |     |     |     |     | 430 |

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
 610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
 645 650 655

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
 660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
 675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
 690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
 705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
 725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
 740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
 755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
 770 775 780

Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
 785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
 805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
820 825 830 277

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
835 840 845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
915 920 925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
930 935 940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
980 985 990

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp

278

1010

1015

1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
1085 1090 1095

His His His His  
1100

<210> 236  
<211> 1102  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 236

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

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

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

279  
Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Asn Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
65 70 75 80

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

Thr Arg Gly Thr Thr Val Val His Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Thr Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser

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



Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
 610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
645 650 655

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
770 775 780

Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
835 840 283 845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
915 920 925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
930 935 940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
980 985 990

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr

284

1025

1030

1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
1085 1090 1095

His His His His  
1100

<210> 237  
<211> 1102  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 237

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

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

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

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

285  
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Arg Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr Tyr Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Asp Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Ser        | Leu        | Lys<br>275 | Leu        | Ser        | Cys        | Ala        | Ala<br>280 | Ser        | Gly        | Phe        | Thr        | Phe<br>285 | Asn        | Lys        | Tyr        |
| Ala        | Met<br>290 | Asn        | Trp        | Val        | Arg        | Gln<br>295 | Ala        | Pro        | Gly        | Lys        | Gly<br>300 | Leu        | Glu        | Trp        | Val        |
| Ala<br>305 | Arg        | Ile        | Arg        | Ser        | Lys<br>310 | Tyr        | Asn        | Asn        | Tyr        | Ala<br>315 | Thr        | Tyr        | Tyr        | Ala        | Asp<br>320 |
| Ser        | Val        | Lys        | Asp        | Arg<br>325 | Phe        | Thr        | Ile        | Ser        | Arg<br>330 | Asp        | Asp        | Ser        | Lys        | Asn<br>335 | Thr        |
| Ala        | Tyr        | Leu        | Gln<br>340 | Met        | Asn        | Asn        | Leu        | Lys<br>345 | Thr        | Glu        | Asp        | Thr        | Ala<br>350 | Val        | Tyr        |
| Tyr        | Cys        | Val<br>355 | Arg        | His        | Gly        | Asn        | Phe<br>360 | Gly        | Asn        | Ser        | Tyr        | Ile<br>365 | Ser        | Tyr        | Trp        |
| Ala        | Tyr        | Trp        | Gly        | Gln        | Gly        | Thr<br>375 | Leu        | Val        | Thr        | Val        | Ser<br>380 | Ser        | Gly        | Gly        | Gly        |
| Gly<br>385 | Ser        | Gly        | Gly        | Gly        | Gly<br>390 | Ser        | Gly        | Gly        | Gly        | Gly<br>395 | Ser        | Gln        | Thr        | Val        | Val<br>400 |
| Thr        | Gln        | Glu        | Pro        | Ser<br>405 | Leu        | Thr        | Val        | Ser        | Pro<br>410 | Gly        | Gly        | Thr        | Val        | Thr<br>415 | Leu        |
| Thr        | Cys        | Gly        | Ser<br>420 | Ser        | Thr        | Gly        | Ala<br>425 | Val        | Thr        | Ser        | Gly        | Asn<br>430 | Tyr        | Pro        | Asn        |
| Trp        | Val        | Gln<br>435 | Gln        | Lys        | Pro        | Gly        | Gln<br>440 | Ala        | Pro        | Arg        | Gly        | Leu<br>445 | Ile        | Gly        | Gly        |
| Thr        | Lys<br>450 | Phe        | Leu        | Ala        | Pro        | Gly<br>455 | Thr        | Pro        | Ala        | Arg        | Phe<br>460 | Ser        | Gly        | Ser        | Leu        |

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
 610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
 645 650 655

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
 660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
 675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
 690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
 705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
 725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
 740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
 755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
 770 775 780

Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
 785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
 805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
 820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
 835 840 845



289  
His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
915 920 925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
930 935 940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
980 985 990

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu

290

1040

1045

1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
1085 1090 1095

His His His His  
1100

<210> 238  
<211> 1097  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 238

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

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

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

Ala Val Ile Ser His His Gly Ser Ser Lys Tyr Tyr Ala Arg Ser Val  
50 55 60

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

Leu Glu Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95 291

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

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

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu  
130 135 140

Ser Val Thr Pro Gly Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln  
145 150 155 160

Ser Leu Leu His Ser Asp Gly Lys Thr Phe Leu Tyr Trp Tyr Leu Gln  
165 170 175

Lys Pro Gly Gln Pro Pro Gln Leu Leu Ile Tyr Glu Val Ser Asn Arg  
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp  
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr  
210 215 220

Tyr Cys Leu Gln Gly Ile His Leu Pro Phe Thr Phe Gly Pro Gly Thr  
225 230 235 240

Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val  
245 250 255

Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser  
260 265 270

Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| 275 |     |     |     |     | 280 |     |     |     |     | 292 |     |     |     |     | 285 |  |  |  |  |
| Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser |  |  |  |  |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |  |  |  |
| Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val | Lys | Asp | Arg |  |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |  |
| Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr | Leu | Gln | Met |  |  |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |  |  |  |
| Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val | Arg | His |  |  |  |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |  |  |  |
| Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp | Gly | Gln |  |  |  |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |  |  |  |
| Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly |  |  |  |  |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |  |  |  |
| Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu | Pro | Ser |  |  |  |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |  |  |  |
| Leu | Thr | Val | Ser | Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly | Ser | Ser |  |  |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |  |  |  |  |
| Thr | Gly | Ala | Val | Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys |  |  |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |  |  |
| Pro | Gly | Gln | Ala | Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala |  |  |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |  |  |
| Pro | Gly | Thr | Pro | Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala |  |  |  |  |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |  |  |
| Ala | Leu | Thr | Leu | Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr |  |  |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |  |  |

Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys  
                     485                    490                    495

Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu  
                     500                    505                    510

Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu  
                     515                    520                    525

Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp  
                     530                    535                    540

His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val  
 545                    550                    555                    560

Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe  
                     565                    570                    575

Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu  
                     580                    585                    590

Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe  
                     595                    600                    605

Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro  
                     610                    615                    620

Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe  
 625                    630                    635                    640

Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr  
                     645                    650                    655

Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr  
                     660                    665                    670

Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu  
675 680 685

Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu  
690 695 700

Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp  
705 710 715 720

Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu  
725 730 735

Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys  
740 745 750

His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys  
755 760 765

Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys  
770 775 780

Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu  
785 790 795 800

Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val  
805 810 815

Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe  
820 825 830

Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser  
835 840 845

Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu  
850 855 860

295  
Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe  
865 870 875 880

Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln  
885 890 895

Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala  
900 905 910

Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr  
915 920 925

Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys  
930 935 940

Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser  
945 950 955 960

Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser  
965 970 975

Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro  
980 985 990

Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe  
995 1000 1005

Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser  
1010 1015 1020

Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu  
1025 1030 1035

Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val  
1040 1045 1050

Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp

296

1055

1060

1065

Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala  
1070 1075 1080

Ala Ser Gln Ala Ala Leu Gly Leu His His His His His His  
1085 1090 1095

<210> 239  
<211> 1099  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 239

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

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

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

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

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
85 90 95

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



Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 115 120 125 297

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
 130 135 140

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
 145 150 155 160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp Tyr  
 165 170 175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser  
 180 185 190

Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
 195 200 205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
 210 215 220

Thr Tyr Tyr Cys Gln Gln Gly Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
 225 230 235 240

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln  
 245 250 255

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys  
 260 265 270

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn  
 275 280 285

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile  
 290 295 300

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

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     | 310 |     | 298<br>315 |     | 320 |     |     |     |     |     |     |     |     |     |
| Asp | Arg | Phe | Thr | Ile        | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr | Leu |
|     |     |     |     | 325        |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Gln | Met | Asn | Asn | Leu        | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val |
|     |     |     | 340 |            |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Arg | His | Gly | Asn | Phe        | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp |
|     |     | 355 |     |            |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Gly | Gln | Gly | Thr | Leu        | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly |
|     | 370 |     |     |            |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Gly | Gly | Ser | Gly        | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu |
| 385 |     |     |     |            | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Pro | Ser | Leu | Thr | Val        | Ser | Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly |
|     |     |     |     | 405        |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ser | Ser | Thr | Gly | Ala        | Val | Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln |
|     |     |     | 420 |            |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gln | Lys | Pro | Gly | Gln        | Ala | Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe |
|     |     | 435 |     |            |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Leu | Ala | Pro | Gly | Thr        | Pro | Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly |
|     | 450 |     |     |            |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Lys | Ala | Ala | Leu | Thr        | Leu | Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu |
| 465 |     |     |     |            | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Tyr | Tyr | Cys | Val | Leu        | Trp | Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly |
|     |     |     |     | 485        |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Thr | Lys | Leu | Thr | Val        | Leu | Pro | Gly | Gly | Gly | Gly | Ser | Asp | Ala | His | Lys |
|     |     |     | 500 |            |     |     |     | 505 |     |     |     |     | 510 |     |     |

Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys  
 515 520 525

Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe  
 530 535 540

Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr  
 545 550 555 560

Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr  
 565 570 575

Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr  
 580 585 590

Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu  
 595 600 605

Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val  
 610 615 620

Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu  
 625 630 635 640

Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr  
 645 650 655

Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala  
 660 665 670

Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro  
 675 680 685

Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln  
 690 695 700

300

Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys  
705 710 715 720

Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe  
725 730 735

Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu  
740 745 750

Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu  
755 760 765

Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys  
770 775 780

Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu  
785 790 795 800

Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp  
805 810 815

Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp  
820 825 830

Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp  
835 840 845

Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr  
850 855 860

Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys  
865 870 875 880

Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile  
885 890 895

301

Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln  
 900 905 910

Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr  
 915 920 925

Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys  
 930 935 940

Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr  
 945 950 955 960

Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro  
 965 970 975

Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg  
 980 985 990

Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys  
 995 1000 1005

Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr  
 1010 1015 1020

Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val  
 1025 1030 1035

Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys  
 1040 1045 1050

Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 1055 1060 1065

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu  
 1070 1075 1080

Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His His His His

1085

1090

302

1095

His

&lt;210&gt; 240

&lt;211&gt; 1099

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 240

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

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

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

Trp Leu Ala His Ile Phe Ser Thr Asp Glu Lys Ser Tyr Ser Thr Ser  
 50 55 60

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

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala Arg Tyr Tyr Tyr Asp Ser Ser Gly Tyr Tyr Tyr Ser Phe Phe  
 100 105 110

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met  
130 135 140 303

Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr  
145 150 155 160

Ile Thr Cys Arg Ala Ser Gln Ser Ile Arg Ser Tyr Leu Asn Trp Tyr  
165 170 175

Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly Ala Ser  
180 185 190

Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly  
195 200 205

Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala  
210 215 220

Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Ser Pro Phe Thr Phe Gly Gly  
225 230 235 240

Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln  
245 250 255

Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys  
260 265 270

Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn  
275 280 285

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile  
290 295 300

Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys  
305 310 315 320

Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 304 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 325 |     |     |     |     |     |     |     | 330 |     |     |     | 335 |     |     |     |  |
| Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val |  |
|     |     |     | 340 |     |     |     | 345 |     |     |     |     |     | 350 |     |     |  |
| Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     | 365 |     |     |     |     |  |
| Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly |  |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |  |
| Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Pro | Ser | Leu | Thr | Val | Ser | Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |  |
| Ser | Ser | Thr | Gly | Ala | Val | Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Gln | Lys | Pro | Gly | Gln | Ala | Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |
| Leu | Ala | Pro | Gly | Thr | Pro | Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly |  |
|     |     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |  |
| Lys | Ala | Ala | Leu | Thr | Leu | Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |
| Tyr | Tyr | Cys | Val | Leu | Trp | Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly |  |
|     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |     |  |
| Thr | Lys | Leu | Thr | Val | Leu | Pro | Gly | Gly | Gly | Gly | Ser | Asp | Ala | His | Lys |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |
| Ser | Glu | Val | Ala | His | Arg | Phe | Lys | Asp | Leu | Gly | Glu | Glu | Asn | Phe | Lys |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |



Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe  
 530 535 540

Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr  
 545 550 555 560

Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr  
 565 570 575

Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr  
 580 585 590

Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu  
 595 600 605

Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val  
 610 615 620

Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu  
 625 630 635 640

Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr  
 645 650 655

Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala  
 660 665 670

Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro  
 675 680 685

Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln  
 690 695 700

Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys  
 705 710 715 720

Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe  
                     725                    730                    735

Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu  
                     740                    745                    750

Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu  
                     755                    760                    765

Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys  
                     770                    775                    780

Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu  
 785                    790                    795                    800

Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp  
                     805                    810                    815

Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp  
                     820                    825                    830

Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp  
                     835                    840                    845

Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr  
                     850                    855                    860

Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys  
 865                    870                    875                    880

Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile  
                     885                    890                    895

Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln  
                     900                    905                    910

307

Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr  
915 920 925

Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys  
930 935 940

Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr  
945 950 955 960

Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro  
965 970 975

Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg  
980 985 990

Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys  
995 1000 1005

Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr  
1010 1015 1020

Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val  
1025 1030 1035

Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys  
1040 1045 1050

Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
1055 1060 1065

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu  
1070 1075 1080

Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His His His His  
1085 1090 1095

His

<210> 241  
 <211> 1095  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 241

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

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

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

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

Arg Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr  
 65 70 75 80

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

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

Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 115 120 125

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro  
 130 135 140

309  
Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg  
145 150 155 160

Ala Ser Gln Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro  
165 170 175

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser  
180 185 190

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr  
195 200 205

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys  
210 215 220

Gln Gln Ser Tyr Ser Ala Pro Leu Thr Phe Gly Gly Gly Thr Lys Val  
225 230 235 240

Asp Ile Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser  
245 250 255

Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala  
260 265 270

Ala Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln  
275 280 285

Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr  
290 295 300

Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr  
305 310 315 320

Ile Ser Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn  
325 330 335

Leu Lys Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 310 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 340 |     |     |     | 345 |     |     |     | 350 |     |     |     |     |     |     |     |
| Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp | Gly | Gln | Gly | Thr |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu | Pro | Ser | Leu | Thr |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Val | Ser | Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly | Ser | Ser | Thr | Gly |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Ala | Val | Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Gln | Ala | Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala | Pro | Gly |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Pro | Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Thr | Leu | Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr | Cys | Val |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Leu | Trp | Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Val | Leu | Pro | Gly | Gly | Gly | Gly | Ser | Asp | Ala | His | Lys | Ser | Glu | Val | Ala |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| His | Arg | Phe | Lys | Asp | Leu | Gly | Glu | Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Ile | Ala | Phe | Ala | Gln | Tyr | Leu | Gln | Gln | Cys | Pro | Phe | Glu | Asp | His | Val |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |

Lys Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp  
 545 550 555 560

Glu Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp  
 565 570 575

Lys Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala  
 580 585 590

Asp Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln  
 595 600 605

His Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val  
 610 615 620

Asp Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys  
 625 630 635 640

Lys Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro  
 645 650 655

Glu Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys  
 660 665 670

Cys Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu  
 675 680 685

Leu Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys  
 690 695 700

Ala Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val  
 705 710 715 720

Ala Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser  
 725 730 735

Lys Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly  
                   740                  745                  750

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile  
           755                  760                  765

Cys Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu  
       770                  775                  780

Lys Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp  
 785                  790                  795                  800

Glu Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser  
                   805                  810                  815

Lys Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly  
           820                  825                  830

Met Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val  
       835                  840                  845

Leu Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys  
       850                  855                  860

Cys Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu  
 865                  870                  875                  880

Phe Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys  
           885                  890                  895

Glu Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu  
       900                  905                  910

Val Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val  
       915                  920                  925



313

Glu Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His  
 930 935 940

Pro Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val  
 945 950 955 960

Leu Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg  
 965 970 975

Val Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe  
 980 985 990

Ser Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala  
 995 1000 1005

Glu Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys  
 1010 1015 1020

Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys  
 1025 1030 1035

His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp  
 1040 1045 1050

Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys  
 1055 1060 1065

Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser  
 1070 1075 1080

Gln Ala Ala Leu Gly Leu His His His His His His  
 1085 1090 1095

<210> 242  
 <211> 1093  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 242

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

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

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 315 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly

|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |  |  |  |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| 370     |         |         |         |         | 375     |         |         |         |         | 316     |         |         |         |         | 380     |  |  |  |  |
| Gly 385 | Gly     | Ser     | Gln     | Thr     | Val 390 | Val     | Thr     | Gln     | Glu     | Pro 395 | Ser     | Leu     | Thr     | Val     | Ser 400 |  |  |  |  |
| Pro     | Gly     | Gly     | Thr     | Val 405 | Thr     | Leu     | Thr     | Cys     | Gly 410 | Ser     | Ser     | Thr     | Gly     | Ala 415 | Val     |  |  |  |  |
| Thr     | Ser     | Gly     | Asn 420 | Tyr     | Pro     | Asn     | Trp     | Val 425 | Gln     | Gln     | Lys     | Pro     | Gly 430 | Gln     | Ala     |  |  |  |  |
| Pro     | Arg     | Gly 435 | Leu     | Ile     | Gly     | Gly     | Thr 440 | Lys     | Phe     | Leu     | Ala     | Pro 445 | Gly     | Thr     | Pro     |  |  |  |  |
| Ala     | Arg 450 | Phe     | Ser     | Gly     | Ser     | Leu 455 | Leu     | Gly     | Gly     | Lys     | Ala 460 | Ala     | Leu     | Thr     | Leu     |  |  |  |  |
| Ser 465 | Gly     | Val     | Gln     | Pro     | Glu 470 | Asp     | Glu     | Ala     | Glu     | Tyr 475 | Tyr     | Cys     | Val     | Leu     | Trp 480 |  |  |  |  |
| Tyr     | Ser     | Asn     | Arg     | Trp 485 | Val     | Phe     | Gly     | Gly     | Gly 490 | Thr     | Lys     | Leu     | Thr     | Val 495 | Leu     |  |  |  |  |
| Pro     | Gly     | Gly     | Gly 500 | Gly     | Ser     | Asp     | Ala     | His 505 | Lys     | Ser     | Glu     | Val     | Ala 510 | His     | Arg     |  |  |  |  |
| Phe     | Lys     | Asp 515 | Leu     | Gly     | Glu     | Glu     | Asn 520 | Phe     | Lys     | Ala     | Leu     | Val 525 | Leu     | Ile     | Ala     |  |  |  |  |
| Phe     | Ala     | Gln     | Tyr     | Leu     | Gln     | Gln 535 | Cys     | Pro     | Phe     | Glu     | Asp 540 | His     | Val     | Lys     | Leu     |  |  |  |  |
| Val 545 | Asn     | Glu     | Val     | Thr     | Glu 550 | Phe     | Ala     | Lys     | Thr     | Cys 555 | Val     | Ala     | Asp     | Glu     | Ser 560 |  |  |  |  |
| Ala     | Glu     | Asn     | Cys     | Asp 565 | Lys     | Ser     | Leu     | His     | Thr 570 | Leu     | Phe     | Gly     | Asp     | Lys 575 | Leu     |  |  |  |  |

Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590

Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
 660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
 725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
 740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
 755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

319

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 243  
<211> 1093  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 243

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

320

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205



Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 321 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
|     |     |     |     |     |     |     |     |     | 322 |     |     |     |     |     |     |  |  |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     |     | 415 |  |  |
| Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala |  |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |  |
| Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala | Pro | Gly | Thr | Pro |  |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |  |
| Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Leu |  |  |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |
| Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr | Cys | Val | Leu | Trp |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |
| Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |
| Pro | Gly | Gly | Gly | Gly | Ser | Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |
| Phe | Lys | Asp | Leu | Gly | Glu | Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu | Ile | Ala |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |
| Phe | Ala | Gln | Tyr | Leu | Gln | Gln | Cys | Pro | Phe | Glu | Asp | His | Val | Lys | Leu |  |  |
|     |     | 530 |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |
| Val | Asn | Glu | Val | Thr | Glu | Phe | Ala | Lys | Thr | Cys | Val | Ala | Asp | Glu | Ser |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |
| Ala | Glu | Asn | Cys | Asp | Lys | Ser | Leu | His | Thr | Leu | Phe | Gly | Asp | Lys | Leu |  |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |
| Cys | Thr | Val | Ala | Thr | Leu | Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys |  |  |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     | 590 |     |     |  |  |
| Cys | Ala | Lys | Gln | Glu | Pro | Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys |  |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |

Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620

Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640

Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
 660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
 725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
 740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
 755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
                   805                  810                  815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
                   820                  825                  830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
                   835                  840                  845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
                   850                  855                  860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
                   865                  870                  875                  880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
                   885                  890                  895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
                   900                  905                  910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
                   915                  920                  925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
                   930                  935                  940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
                   945                  950                  955                  960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
                   965                  970                  975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
                   980                  985                  990

325

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 244  
<211> 1093  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 244

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255 327

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| 435 |     |     |     |     | 440 |     |     |     |     | 328 |     |     | 445 |     |     |  |  |
| Ala | Arg | Phe | Ser | Gly | Ser | Leu | Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Leu |  |  |
| 450 |     |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |  |  |
| Ser | Gly | Val | Gln | Pro | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr | Cys | Val | Leu | Trp |  |  |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |  |  |
| Tyr | Ser | Asn | Arg | Trp | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |  |  |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |  |  |
| Pro | Gly | Gly | Gly | Gly | Ser | Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg |  |  |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |  |  |
| Phe | Lys | Asp | Leu | Gly | Glu | Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu | Ile | Ala |  |  |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |  |  |
| Phe | Ala | Gln | Tyr | Leu | Gln | Gln | Cys | Pro | Phe | Glu | Asp | His | Val | Lys | Leu |  |  |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |  |  |
| Val | Asn | Glu | Val | Thr | Glu | Phe | Ala | Lys | Thr | Cys | Val | Ala | Asp | Glu | Ser |  |  |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |  |  |
| Ala | Glu | Asn | Cys | Asp | Lys | Ser | Leu | His | Thr | Leu | Phe | Gly | Asp | Lys | Leu |  |  |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |  |  |
| Cys | Thr | Val | Ala | Thr | Leu | Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys |  |  |
|     |     |     | 580 |     |     |     | 585 |     |     |     |     |     | 590 |     |     |  |  |
| Cys | Ala | Lys | Gln | Glu | Pro | Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys |  |  |
|     |     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |  |  |
| Asp | Asp | Asn | Pro | Asn | Leu | Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val |  |  |
|     | 610 |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |  |  |
| Met | Cys | Thr | Ala | Phe | His | Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr |  |  |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |  |  |



Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
645 650 655

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
660 665 670

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
725 730 735

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Thr | Asp | Leu | Thr | Lys | Val | His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
805 810 815

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Cys | Lys | Asn | Tyr | Ala | Glu | Ala | Lys | Asp | Val | Phe | Leu | Gly | Met | Phe |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
 965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
 980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
 995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
 1010 1015 1020

331

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 245  
<211> 1093  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 245

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
                     130                    135                    140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
                     145                    150                    155                    160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
                     165                    170                    175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
                     180                    185                    190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
                     195                    200                    205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
                     210                    215                    220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
                     225                    230                    235                    240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
                     245                    250                    255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
                     260                    265                    270

333  
Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 465 |     | 470 |     | 334<br>475 |     | 480 |     |     |     |     |     |     |     |     |     |
| Tyr | Ser | Asn | Arg | Trp        | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |
|     |     |     |     | 485        |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Pro | Gly | Gly | Gly | Gly        | Ser | Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg |
|     |     |     | 500 |            |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Phe | Lys | Asp | Leu | Gly        | Glu | Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu | Ile | Ala |
|     |     | 515 |     |            |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Phe | Ala | Gln | Tyr | Leu        | Gln | Gln | Cys | Pro | Phe | Glu | Asp | His | Val | Lys | Leu |
|     | 530 |     |     |            |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Val | Asn | Glu | Val | Thr        | Glu | Phe | Ala | Lys | Thr | Cys | Val | Ala | Asp | Glu | Ser |
| 545 |     |     |     |            | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ala | Glu | Asn | Cys | Asp        | Lys | Ser | Leu | His | Thr | Leu | Phe | Gly | Asp | Lys | Leu |
|     |     |     |     | 565        |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Cys | Thr | Val | Ala | Thr        | Leu | Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys |
|     |     | 580 |     |            |     |     |     | 585 |     |     |     |     | 590 |     |     |
| Cys | Ala | Lys | Gln | Glu        | Pro | Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys |
|     |     | 595 |     |            |     |     | 600 |     |     |     |     | 605 |     |     |     |
| Asp | Asp | Asn | Pro | Asn        | Leu | Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val |
|     | 610 |     |     |            |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Met | Cys | Thr | Ala | Phe        | His | Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr |
| 625 |     |     |     |            | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Leu | Tyr | Glu | Ile | Ala        | Arg | Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu |
|     |     |     |     | 645        |     |     |     |     | 650 |     |     |     |     | 655 |     |
| Leu | Phe | Phe | Ala | Lys        | Arg | Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln |
|     |     |     | 660 |            |     |     |     | 665 |     |     |     |     | 670 |     |     |

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
 725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
 740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
 755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
 965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
 980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
 995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
 1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
 1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
 1040 1045 1050



337

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 246

<211> 1093

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 246

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Asp Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser  
305 310 315 320 339

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg

500 340 510  
 505  
 Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
 515 520 525  
 Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
 530 535 540  
 Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560  
 Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575  
 Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590  
 Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605  
 Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620  
 Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640  
 Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655  
 Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
 660 665 670  
 Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685  
 Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
 725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
 740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
 755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
                   900                  905                  910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
           915                  920                  925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
       930                  935                  940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945                  950                  955                  960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
                   965                  970                  975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
                   980                  985                  990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
       995                  1000                  1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
      1010                  1015                  1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
      1025                  1030                  1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
      1040                  1045                  1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
      1055                  1060                  1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
      1070                  1075                  1080

343

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 247  
<211> 1093  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 247

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

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

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

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

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

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

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

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

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Ser Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Arg Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
 325 330 335



Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu

530 535 346 540  
 Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
 545 550 555 560  
 Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu  
 565 570 575  
 Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys  
 580 585 590  
 Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys  
 595 600 605  
 Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val  
 610 615 620  
 Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr  
 625 630 635 640  
 Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu  
 645 650 655  
 Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln  
 660 665 670  
 Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg  
 675 680 685  
 Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser  
 690 695 700  
 Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg  
 705 710 715 720  
 Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu  
 725 730 735

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu  
 740 745 750

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu  
 755 760 765

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

348

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 248

<211> 1093

<212> PRT

<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 248

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

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

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

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

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

Arg Ile His Ser Gly Ser Phe Ser Phe Asp Tyr Trp Asp Gln Gly Thr  
 100 105 110

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

Gly Gly Gly Gly Ser Glu Ile Val Met Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Ser Arg Gly Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

350

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Asp Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

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

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Ser Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

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

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Val Ser Trp Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380 351

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

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Pro Gly Gly Gly Gly Ser Asp Ala His Lys Ser Glu Val Ala His Arg  
500 505 510

Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala  
515 520 525

Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu  
530 535 540

Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser  
545 550 555 560

Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 352 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 565 |     |     |     | 570 |     |     |     | 575 |     |     |     |     |     |     |     |     |
| Cys | Thr | Val | Ala | Thr | Leu | Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys |     |
|     |     |     | 580 |     |     |     | 585 |     |     |     |     |     | 590 |     |     |     |
| Cys | Ala | Lys | Gln | Glu | Pro | Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys |     |
|     |     |     | 595 |     |     |     | 600 |     |     |     |     |     | 605 |     |     |     |
| Asp | Asp | Asn | Pro | Asn | Leu | Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val |     |
|     |     | 610 |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |     |
| Met | Cys | Thr | Ala | Phe | His | Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr |     |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     |     | 640 |
| Leu | Tyr | Glu | Ile | Ala | Arg | Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu |     |
|     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |     |     |
| Leu | Phe | Phe | Ala | Lys | Arg | Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln |     |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |     |
| Ala | Ala | Asp | Lys | Ala | Ala | Cys | Leu | Leu | Pro | Lys | Leu | Asp | Glu | Leu | Arg |     |
|     |     | 675 |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |     |
| Asp | Glu | Gly | Lys | Ala | Ser | Ser | Ala | Lys | Gln | Arg | Leu | Lys | Cys | Ala | Ser |     |
|     |     | 690 |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Leu | Gln | Lys | Phe | Gly | Glu | Arg | Ala | Phe | Lys | Ala | Trp | Ala | Val | Ala | Arg |     |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     |     | 720 |
| Leu | Ser | Gln | Arg | Phe | Pro | Lys | Ala | Glu | Phe | Ala | Glu | Val | Ser | Lys | Leu |     |
|     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |     |     |
| Val | Thr | Asp | Leu | Thr | Lys | Val | His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu |     |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |     |
| Leu | Glu | Cys | Ala | Asp | Asp | Arg | Ala | Asp | Leu | Ala | Lys | Tyr | Ile | Cys | Glu |     |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |     |



Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro  
 770 775 780

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met  
 785 790 795 800

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp  
 805 810 815

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe  
 820 825 830

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu  
 835 840 845

Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala  
 850 855 860

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys  
 865 870 875 880

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu  
 885 890 895

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg  
 900 905 910

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val  
 915 920 925

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu  
 930 935 940

Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu Asn  
 945 950 955 960

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr  
965 970 975

Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser Ala  
980 985 990

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr  
995 1000 1005

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg  
1010 1015 1020

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys  
1025 1030 1035

Pro Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe  
1040 1045 1050

Ala Ala Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr  
1055 1060 1065

Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala  
1070 1075 1080

Ala Leu Gly Leu His His His His His His  
1085 1090

<210> 249

$\langle 211 \rangle$  1102

<212> PRT

### <213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Synthetic peptide

<400> 249

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

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

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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val 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 Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Ser Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

356

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Phe Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     |     |     |     |     |     | 358 |     |     |     |     |     |
|     | 595 |     |     |     |     | 600 |     |     |     |     | 605 |     |     |     |     |
| Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys | Asp | Asp | Asn | Pro | Asn | Leu | Pro |
| 610 |     |     |     |     |     | 615 |     |     |     |     | 620 |     |     |     |     |
| Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val | Met | Cys | Thr | Ala | Phe | His | Asp |
| 625 |     |     |     |     | 630 |     |     |     |     | 635 |     |     |     |     | 640 |
| Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg | Arg |
|     |     |     |     | 645 |     |     |     |     | 650 |     |     |     |     | 655 |     |
| His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg | Tyr |
|     |     |     | 660 |     |     |     |     | 665 |     |     |     |     | 670 |     |     |
| Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala | Cys |
|     | 675 |     |     |     |     |     | 680 |     |     |     |     | 685 |     |     |     |
| Leu | Leu | Pro | Lys | Leu | Asp | Glu | Leu | Arg | Asp | Glu | Gly | Lys | Ala | Ser | Ser |
| 690 |     |     |     |     |     | 695 |     |     |     |     | 700 |     |     |     |     |
| Ala | Lys | Gln | Arg | Leu | Lys | Cys | Ala | Ser | Leu | Gln | Lys | Phe | Gly | Glu | Arg |
| 705 |     |     |     |     | 710 |     |     |     |     | 715 |     |     |     |     | 720 |
| Ala | Phe | Lys | Ala | Trp | Ala | Val | Ala | Arg | Leu | Ser | Gln | Arg | Phe | Pro | Lys |
|     |     |     |     | 725 |     |     |     |     | 730 |     |     |     |     | 735 |     |
| Ala | Glu | Phe | Ala | Glu | Val | Ser | Lys | Leu | Val | Thr | Asp | Leu | Thr | Lys | Val |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |
| His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu | Leu | Glu | Cys | Ala | Asp | Asp | Arg |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |
| Ala | Asp | Leu | Ala | Lys | Tyr | Ile | Cys | Glu | Asn | Gln | Asp | Ser | Ile | Ser | Ser |
| 770 |     |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |
| Lys | Leu | Lys | Glu | Cys | Cys | Glu | Lys | Pro | Leu | Leu | Glu | Lys | Ser | His | Cys |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     | 800 |

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
835 840 845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
850 855 860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
865 870 875 880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
885 890 895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
900 905 910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
915 920 925

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val | Ser | Arg | Asn | Leu | Gly | Lys | Val |
|     | 930 |     |     |     |     | 935 |     |     |     |     | 940 |     |     |     |     |

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
945 950 955 960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
965 970 975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
980 985 990

360

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
1085 1090 1095

His His His His  
1100

<210> 250  
<211> 1102  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 250

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

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



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

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

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
   65                                  70                                  75                                  80

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

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                                   100                                  105                                  110

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

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
       130                                  135                                  140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
   145                                  150                                  155                                  160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
                                   165                                  170                                  175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
                                   180                                  185                                  190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
       195                                  200                                  205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
       210                                  215                                  220

362

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

363  
Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Ser Asp  
500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro

610 615 364 620  
 Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640  
 Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
 645 650 655  
 His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
 660 665 670  
 Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
 675 680 685  
 Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
 690 695 700  
 Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
 705 710 715 720  
 Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
 725 730 735  
 Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
 740 745 750  
 His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
 755 760 765  
 Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
 770 775 780  
 Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
 785 790 795 800  
 Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
 805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
                   820                  825                  830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg  
                   835                  840                  845

His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
                   850                  855                  860

Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
                   865                  870                  875                  880

Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
                   885                  890                  895

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
                   900                  905                  910

Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
                   915                  920                  925

Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
                   930                  935                  940

Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
                   945                  950                  955                  960

Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
                   965                  970                  975

Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
                   980                  985                  990

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

Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 1010 1015 1020

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
 1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
 1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
 1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
 1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
 1085 1090 1095

His His His His  
 1100

<210> 251  
 <211> 1102  
 <212> PRT  
 <213> Homo sapiens

<400> 251

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

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

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

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Gly Gln Asn Phe

|            |     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 50         |     |            |            |            | 55         |            |            |            |            | 367        |            |            |            |            | 60         |  |  |  |  |
| Gln<br>65  | Gly | Arg        | Val        | Thr        | Met<br>70  | Thr        | Arg        | Asp        | Thr        | Ser<br>75  | Thr        | Asn        | Thr        | Val        | Tyr<br>80  |  |  |  |  |
| Met        | Glu | Leu        | Ser        | Ser<br>85  | Leu        | Arg        | Ser        | Glu        | Asp<br>90  | Thr        | Ala        | Val        | Tyr        | Tyr<br>95  | Cys        |  |  |  |  |
| Ala        | Arg | Gly        | Gly<br>100 | Asn        | Ser        | Ala        | Phe        | Tyr<br>105 | Ser        | Tyr        | Tyr        | Asp        | Met<br>110 | Asp        | Val        |  |  |  |  |
| Trp        | Gly | Gln<br>115 | Gly        | Thr        | Thr        | Val        | Thr<br>120 | Val        | Ser        | Ser        | Gly        | Gly<br>125 | Gly        | Gly        | Ser        |  |  |  |  |
| Gly<br>130 | Gly | Gly        | Gly        | Ser        | Gly        | Gly<br>135 | Gly        | Gly        | Ser        | Asp        | Val<br>140 | Val        | Met        | Thr        | Gln        |  |  |  |  |
| Ser<br>145 | Pro | Leu        | Ser        | Leu        | Pro<br>150 | Val        | Thr        | Leu        | Gly        | Gln<br>155 | Pro        | Ala        | Ser        | Ile        | Ser<br>160 |  |  |  |  |
| Cys        | Arg | Ser        | Ser        | Gln<br>165 | Ser        | Leu        | Ala        | Tyr        | Arg<br>170 | Asp        | Gly        | Asn        | Thr        | Tyr<br>175 | Leu        |  |  |  |  |
| Ser        | Trp | Phe        | Gln<br>180 | Gln        | Arg        | Pro        | Gly        | Gln<br>185 | Ser        | Pro        | Arg        | Arg        | Leu<br>190 | Ile        | Tyr        |  |  |  |  |
| Lys        | Val | Ser<br>195 | Asn        | Trp        | Gln        | Ser        | Gly<br>200 | Val        | Pro        | Asp        | Arg        | Phe<br>205 | Ser        | Gly        | Ser        |  |  |  |  |
| Gly<br>210 | Ser | Gly        | Thr        | Asp        | Phe        | Thr<br>215 | Leu        | Lys        | Ile        | Ser        | Arg<br>220 | Val        | Glu        | Ala        | Glu        |  |  |  |  |
| Asp<br>225 | Val | Gly        | Val        | Tyr        | Phe<br>230 | Cys        | Met        | Gln        | Gly        | Thr<br>235 | His        | Trp        | Pro        | Pro        | Thr<br>240 |  |  |  |  |
| Phe        | Gly | Gln        | Gly        | Thr<br>245 | Lys        | Val        | Glu        | Ile        | Lys<br>250 | Ser        | Gly        | Gly        | Gly        | Gly<br>255 | Ser        |  |  |  |  |

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
                   260                  265                  270

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
           275                  280                  285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
       290                  295                  300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
   305                  310                  315                  320

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
                   325                  330                  335

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
                   340                  345                  350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
           355                  360                  365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
       370                  375                  380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
   385                  390                  395                  400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
                   405                  410                  415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
           420                  425                  430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
       435                  440                  445



Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Pro Gly Gly Gly Gly Ser Asp  
 500 505 510

Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu Glu  
 515 520 525

Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln Gln  
 530 535 540

Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu Phe  
 545 550 555 560

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys Ser  
 565 570 575

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu Arg  
 580 585 590

Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro Glu  
 595 600 605

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu Pro  
 610 615 620

Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His Asp  
 625 630 635 640

Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg Arg  
645 650 655 370

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg Tyr  
660 665 670

Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala Cys  
675 680 685

Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser Ser  
690 695 700

Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu Arg  
705 710 715 720

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro Lys  
725 730 735

Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys Val  
740 745 750

His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg  
755 760 765

Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser Ser  
770 775 780

Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His Cys  
785 790 795 800

Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser Leu  
805 810 815

Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala Glu  
820 825 830

Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg Arg

835 371 845  
 His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr Tyr  
 850 855 860  
 Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu Cys  
 865 870 875 880  
 Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro Gln  
 885 890 895  
 Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr  
 900 905 910  
 Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln  
 915 920 925  
 Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val  
 930 935 940  
 Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala  
 945 950 955 960  
 Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu  
 965 970 975  
 Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu  
 980 985 990  
 Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr  
 995 1000 1005  
 Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 1010 1015 1020  
 Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr  
 1025 1030 1035

Ala Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu  
 1040 1045 1050

Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys  
 1055 1060 1065

Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly  
 1070 1075 1080

Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu His His  
 1085 1090 1095

His His His His  
 1100

<210> 252  
 <211> 618  
 <212> PRT  
 <213> Homo sapiens

<400> 252

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

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu  
 20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
 35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
 50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
 65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe  
 100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg  
 115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
 130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
 145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
 165 170 175

Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
 180 185 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
 195 200 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys  
 210 215 220

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
 225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser  
 245 250 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
 260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser

275 374 285  
 280  
 Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
 290 295 300  
 Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
 305 310 315 320  
 Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
 325 330 335  
 Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
 340 345 350  
 Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
 355 360 365  
 Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
 370 375 380  
 Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys  
 385 390 395 400  
 Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
 405 410 415  
 Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
 420 425 430  
 Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
 435 440 445  
 Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys  
 450 455 460  
 Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro  
 465 470 475 480

375

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Leu Pro Pro Ala  
485 490 495

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu  
500 505 510

Val His Val Arg Arg Arg Gly His Ser Gln Asp Ala Gly Ser Arg Leu  
515 520 525

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

Asn Asn Leu Arg Thr Gln Glu Gly Ser Gly Asp Gly Pro Ser Ser Ser  
545 550 555 560

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Pro Gln Gly Ile Tyr Val  
565 570 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Val Ala Thr Pro Leu Phe  
580 585 590

Pro Pro Leu His Thr Gly Arg Ala Gly Gln Arg Gln His Leu Leu Phe  
595 600 605

Pro Tyr Pro Ser Ser Ile Leu Ser Val Lys  
610 615

<210> 253  
<211> 492  
<212> PRT  
<213> Homo sapiens

<400> 253

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

376  
 Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu  
 20 25 30  
 Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
 35 40 45  
 Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
 50 55 60  
 Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
 65 70 75 80  
 Ala Ala Leu Ser Ala Arg Gly Pro Val Tyr Thr Glu Gln Pro Gly Ala  
 85 90 95  
 Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe  
 100 105 110  
 Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg  
 115 120 125  
 Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
 130 135 140  
 Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
 145 150 155 160  
 Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
 165 170 175  
 Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
 180 185 190  
 Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
 195 200 205  
 Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys



210 215 377 220  
 Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
 225 230 235 240  
 Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser  
 245 250 255  
 Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
 260 265 270  
 Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
 275 280 285  
 Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
 290 295 300  
 Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
 305 310 315 320  
 Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
 325 330 335  
 Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
 340 345 350  
 Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
 355 360 365  
 Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
 370 375 380  
 Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys  
 385 390 395 400  
 Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
 405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
420 425 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
435 440 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys  
450 455 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro  
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu  
485 490

|       |              |
|-------|--------------|
| <210> | 254          |
| <211> | 175          |
| <212> | PRT          |
| <213> | Homo sapiens |

<400> 254

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

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu  
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
65 70 75 80

Ala Ala Leu Ser Ala Arg Gly Pro Val Tyr Thr Glu Gln Pro Gly Ala  
85 90 95 379

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe  
100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg  
115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg  
165 170 175

<210> 255  
<211> 40  
<212> PRT  
<213> Homo sapiens

<400> 255

Ala Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys  
1 5 10 15

Arg Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys  
20 25 30

Ala Pro Leu Glu Asp Glu Cys Glu  
35 40

<210> 256  
<211> 34  
<212> PRT  
<213> Homo sapiens

<400> 256

380

Ala Pro Leu Val Cys Arg Ala Gly Cys Ser Pro Glu His Gly Phe Cys  
1 5 10 15

Glu Gln Pro Gly Glu Cys Arg Cys Leu Glu Gly Trp Thr Gly Pro Leu  
20 25 30

Cys Thr

<210> 257  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 257

Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser Cys  
1 5 10 15

Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe Tyr  
20 25 30

Gly Leu Arg Cys Glu  
35

<210> 258  
<211> 40  
<212> PRT  
<213> Homo sapiens

<400> 258

Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Leu Cys  
1 5 10 15

Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His Cys Pro Pro  
20 25 30

Gly Phe Gln Gly Ser Asn Cys Glu  
35 40

<210> 259  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 259

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
 1 5 10 15

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

Gly Pro Arg Cys Glu  
 35

<210> 260  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 260

Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Leu Cys  
 1 5 10 15

Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His Cys Pro Pro  
 20 25 30

Gly Phe Gln Gly Ser Asn Cys Glu Lys Arg Val Asp Arg Cys Ser Leu  
 35 40 45

Gln Pro Cys Arg Asn Gly Gly Leu Cys Leu Asp Leu Gly His Ala Leu  
 50 55 60

Arg Cys Arg Cys Arg Ala Gly Phe Ala Gly Pro Arg Cys Glu  
 65 70 75

<210> 261

382

<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 261

Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys Ala Asn Gly Gly Thr Cys  
1 5 10 15

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

Gly Arg Asp Cys Arg  
35

<210> 262  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 262

Arg Ala Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys  
1 5 10 15

Tyr Ala His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met  
20 25 30

Gly Ala Arg Cys Glu  
35

<210> 263  
<211> 548  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 263

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

Ala Leu Ile Phe Leu Pro Gln Thr Arg Pro Ala Gly Val Phe Glu Leu  
 20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
 35 40 45

Pro Cys Ser Ala Arg Leu Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
 50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
 65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asp Gly Leu Leu Gln Val Pro Phe  
 100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Phe Ile Ile Glu Thr Trp Arg  
 115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
 130 135 140

Arg Val Ala Gly Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
 145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
 165 170 175

Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
 180 185 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
 195 200 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys Arg Ala Gly Cys  
 210 215 220

Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
 225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val Ser Thr Ser Ser  
 245 250 255

Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
 260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
 275 280 285

Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
 290 295 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
 305 310 315 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
 325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
 340 345 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
 355 360 365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
 370 375 380

Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys  
 385 390 395 400



Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
420 425 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
435 440 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys  
450 455 460

Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro  
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly Gly Gly  
485 490 495

Gly Ser Gly Ala Gly Val Ile Ala Val Ile Val Val Val Val Ile Ala  
500 505 510

Ile Val Ala Gly Ile Val Val Leu Val Ile Ser Arg Lys Lys Arg Met  
515 520 525

Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu Met His Arg  
530 535 540

Glu Leu Asn Ala  
545

<210> 264  
<211> 408  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 264

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
 1 5 10 15

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
 20 25 30

Thr Ser Gly Ala Arg Cys Glu Pro Pro Ala Val Gly Thr Ala Cys Thr  
 35 40 45

Arg Leu Cys Arg Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu  
 50 55 60

Arg Pro Cys Ala Pro Leu Glu Asp Glu Cys Glu Ala Pro Leu Val Cys  
 65 70 75 80

Arg Ala Gly Cys Ser Pro Glu His Gly Phe Cys Glu Gln Pro Gly Glu  
 85 90 95

Cys Arg Cys Leu Glu Gly Trp Thr Gly Pro Leu Cys Thr Val Pro Val  
 100 105 110

Ser Thr Ser Ser Cys Leu Ser Pro Arg Gly Pro Ser Ser Ala Thr Thr  
 115 120 125

Gly Cys Leu Val Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala  
 130 135 140

Asn Gly Gly Ser Cys Ser Glu Thr Pro Arg Ser Phe Glu Cys Thr Cys  
 145 150 155 160

Pro Arg Gly Phe Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys  
 165 170 175

Ala Asp Gly Pro Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp  
 180 185 190

Pro Asp Ser Ala Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser  
195 200 205 387

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

Gly Gly Leu Cys Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg  
225 230 235 240

Ala Gly Phe Ala Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala  
245 250 255

Gly Arg Ala Cys Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala  
260 265 270

His Arg Cys Ser Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu  
275 280 285

Arg Ala Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys  
290 295 300

Tyr Ala His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met  
305 310 315 320

Gly Ala Arg Cys Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu  
325 330 335

Pro Ala Ala Pro Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu  
340 345 350

Ser Gly Gly Gly Gly Ser Gly Ala Gly Val Ile Ala Val Ile Val Val  
355 360 365

Val Val Ile Ala Ile Val Ala Gly Ile Val Val Leu Val Ile Ser Arg  
370 375 380

Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly

|     |     |     |     |
|-----|-----|-----|-----|
| 385 | 390 | 388 |     |
|     |     | 395 | 400 |

|                       |                     |
|-----------------------|---------------------|
| $\langle 210 \rangle$ | 265                 |
| $\langle 211 \rangle$ | 368                 |
| $\langle 212 \rangle$ | PRT                 |
| $\langle 213 \rangle$ | Artificial Sequence |

<400> 265

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
20 25 30

Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu Glu Gly Trp Thr  
50 55 60

Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val Pro Gly Pro Gly  
85 90 95

Pro Arg Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe Tyr Gly Leu Arg  
115 120 125

Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly  
130 135 389 140

Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His  
145 150 155 160

Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys Arg Val Asp Arg  
165 170 175

Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys Leu Asp Leu Gly  
180 185 190

His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala Gly Pro Arg Cys  
195 200 205

Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys Ala Asn Gly Gly  
210 215 220

Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser Cys Ala Leu Gly  
225 230 235 240

Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro Cys Ala Ala Arg  
245 250 255

Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe Ser Gly Leu Val  
260 265 270

Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys Glu Phe Pro Val  
275 280 285

His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro Pro Gly Leu Arg  
290 295 300

Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly Gly Gly Gly Ser Gly Ala  
305 310 315 320

Gly Val Ile Ala Val Ile Val Val Val Val Ile Ala Ile Val Ala Gly

[illegible]

391  
 Glu Lys Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly  
 115 120 125  
 Leu Cys Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly  
 130 135 140  
 Phe Ala Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly Arg  
 145 150 155 160  
 Ala Cys Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg  
 165 170 175  
 Cys Ser Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala  
 180 185 190  
 Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala  
 195 200 205  
 His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala  
 210 215 220  
 Arg Cys Glu Phe Pro Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala  
 225 230 235 240  
 Ala Pro Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly  
 245 250 255  
 Gly Gly Gly Ser Gly Ala Gly Val Ile Ala Val Ile Val Val Val Val  
 260 265 270  
 Ile Ala Ile Val Ala Gly Ile Val Val Leu Val Ile Ser Arg Lys Lys  
 275 280 285  
 Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu Met  
 290 295 300  
 His Arg Glu Leu Asn Ala

305

310

<210> 267  
 <211> 272  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 267

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
 1 5 10 15

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
 20 25 30

Thr Ser Gly Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly  
 35 40 45

Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His  
 50 55 60

Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys Arg Val Asp Arg  
 65 70 75 80

Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys Leu Asp Leu Gly  
 85 90 95

His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala Gly Pro Arg Cys  
 100 105 110

Glu His Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys Ala Asn Gly Gly  
 115 120 125

Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser Cys Ala Leu Gly  
 130 135 140



393  
Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro Cys Ala Ala Arg  
145 150 155 160

Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe Ser Gly Leu Val  
165 170 175

Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys Glu Phe Pro Val  
180 185 190

His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro Pro Gly Leu Arg  
195 200 205

Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly Gly Gly Gly Ser Gly Ala  
210 215 220

Gly Val Ile Ala Val Ile Val Val Val Val Ile Ala Ile Val Ala Gly  
225 230 235 240

Ile Val Val Leu Val Ile Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu  
245 250 255

Lys Ala Glu Ile Lys Glu Met Gly Glu Met His Arg Glu Leu Asn Ala  
260 265 270

<210> 268  
<211> 231  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 268

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
20 25 30

Thr Ser Gly Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly  
35 40 45

Gly Leu Cys Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala  
50 55 60

Gly Phe Ala Gly Pro Arg Cys Glu His Asp Leu Asp Asp Cys Ala Gly  
65 70 75 80

Arg Ala Cys Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His  
85 90 95

Arg Cys Ser Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg  
100 105 110

Ala Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr  
115 120 125

Ala His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly  
130 135 140

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

Ala Ala Pro Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Ser  
165 170 175

Gly Gly Gly Gly Ser Gly Ala Gly Val Ile Ala Val Ile Val Val Val  
180 185 190

Val Ile Ala Ile Val Ala Gly Ile Val Val Leu Val Ile Ser Arg Lys  
195 200 205

Lys Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu  
210 215 220

Met His Arg Glu Leu Asn Ala  
225 230

<210> 269  
<211> 193  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 269

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
20 25 30

Thr Ser Gly Asp Leu Asp Asp Cys Ala Gly Arg Ala Cys Ala Asn Gly  
35 40 45

Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser Cys Ala Leu  
50 55 60

Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro Cys Ala Ala  
65 70 75 80

Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe Ser Gly Leu  
85 90 95

Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ala Arg Cys Glu Phe Pro  
100 105 110

Val His Pro Asp Gly Ala Ser Ala Leu Pro Ala Ala Pro Pro Gly Leu  
115 120 125

Arg Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly Gly Gly Gly Ser Gly  
130 135 140

396

Ala Gly Val Ile Ala Val Ile Val Val Val Val Ile Ala Ile Val Ala  
145 150 155 160

Gly Ile Val Val Leu Val Ile Ser Arg Lys Lys Arg Met Ala Lys Tyr  
165 170 175

Glu Lys Ala Glu Ile Lys Glu Met Gly Glu Met His Arg Glu Leu Asn  
180 185 190

Ala

<210> 270  
<211> 155  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 270

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly  
1 5 10 15

Val His Ser Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser  
20 25 30

Thr Ser Gly Arg Ala Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly  
35 40 45

Gly Arg Cys Tyr Ala His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro  
50 55 60

Gly Tyr Met Gly Ala Arg Cys Glu Phe Pro Val His Pro Asp Gly Ala  
65 70 75 80

Ser Ala Leu Pro Ala Ala Pro Pro Gly Leu Arg Pro Gly Asp Pro Gln  
85 90 95

Arg Tyr Leu Ser Gly Gly Gly Gly Ser Gly Ala Gly Val Ile Ala Val  
 100 105 110

Ile Val Val Val Val Ile Ala Ile Val Ala Gly Ile Val Val Leu Val  
 115 120 125

Ile Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala Glu Ile Lys  
 130 135 140

Glu Met Gly Glu Met His Arg Glu Leu Asn Ala  
 145 150 155

<210> 271  
 <211> 587  
 <212> PRT  
 <213> Macaca fascicularis

<400> 271

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

Ala Leu Ile Phe Ile Pro Gln Ala Arg Pro Ala Gly Val Phe Glu Leu  
 20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
 35 40 45

Pro Cys Ser Ala Arg Gly Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
 50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
 65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asn Gly Leu Leu Gln Val Pro Phe  
100 105 110 398

Arg Asp Ala Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Thr Trp Arg  
115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140

Arg Val Thr Arg Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
165 170 175

Arg Cys Glu Leu Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
180 185 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
195 200 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Pro Val Cys Arg Ala Gly Cys  
210 215 220

Ser Leu Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Met Val Pro Ala Ser Thr Ser Ser  
245 250 255

Cys Leu Gly Leu Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
260 265 270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
275 280 285

Cys Ser Glu Thr Pro Gly Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     | 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     | 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |     |     |     | 500 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| Tyr | Gly | Leu | Arg | Cys | Glu | Val | Ser | Gly | Val | Thr | Cys | Ala | Asp | Gly | Pro | Cys | Phe | Asn | Gly | Gly | Leu | Cys | Val | Gly | Gly | Ala | Asp | Pro | Asp | Ser | Ala | Tyr | Gly | Leu | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp | Arg | Cys | Ser | Leu | Gln | Pro | Cys | Arg | Cys | Arg | Cys | Arg | Ala | Gly | Phe | Ala | Gly | Leu | Gly | Cys | Ser | Arg | Val | Asp | Arg | Cys | Glu | Pro | Pro | Gly | Phe | Gln | Gly | Ser | Asn | Cys | Glu | Lys | Arg | Val | Asp |  |

400

Leu Gly Leu Leu Val Ala Ala Gly Val Ala Gly Ala Ala Leu Leu Leu  
500 505 510

Val His Val Arg Arg Arg Gly His Ala Gln Asp Ala Gly Ser Arg Leu  
515 520 525

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

Asn Asn Gln Arg Thr Gln Glu Gly Pro Gly Asp Val Pro Ser Ser Ser  
545 550 555 560

Val Asp Trp Asn Arg Pro Glu Asp Val Asp Ser Arg Gly Ile Tyr Val  
565 570 575

Ile Ser Ala Pro Ser Ile Tyr Ala Arg Glu Ala  
580 585

<210> 272

<211> 492

<212> PRT

<213> *Macaca fascicularis*

<400> 272

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

Ala Leu Ile Phe Ile Pro Gln Ala Arg Pro Ala Gly Val Phe Glu Leu  
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
35 40 45

Pro Cys Ser Ala Arg Gly Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
50 55 60



401  
Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asn Gly Leu Leu Gln Val Pro Phe  
100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Thr Trp Arg  
115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140

Arg Val Thr Arg Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
165 170 175

Arg Cys Glu Leu Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
180 185 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
195 200 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Pro Val Cys Arg Ala Gly Cys  
210 215 220

Ser Leu Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Met Val Pro Ala Ser Thr Ser Ser  
245 250 255

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

402

260

265

270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
275 280 285

Cys Ser Glu Thr Pro Gly Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
290 295 300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
305 310 315 320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
325 330 335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
340 345 350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
355 360 365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
370 375 380

Gly Pro Arg Cys Glu His Asn Leu Asp Asp Cys Ala Gly Arg Ala Cys  
385 390 395 400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
405 410 415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
420 425 430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
435 440 445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ser Arg Cys  
450 455 460

403

Glu Phe Pro Val His Pro Asp Gly Val Ser Ala Leu Pro Ala Ala Pro  
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu  
485 490

<210> 273  
<211> 175  
<212> PRT  
<213> *Macaca fascicularis*

<400> 273

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

Ala Leu Ile Phe Ile Pro Gln Ala Arg Pro Ala Gly Val Phe Glu Leu  
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
35 40 45

Pro Cys Ser Ala Arg Gly Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asn Gly Leu Leu Gln Val Pro Phe  
100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Thr Trp Arg  
115 120 125

404  
Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140

Arg Val Thr Arg Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg  
165 170 175

<210> 274  
<211> 40  
<212> PRT  
<213> Macaca fascicularis

<400> 274

Ala Arg Cys Glu Leu Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys  
1 5 10 15

Arg Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys  
20 25 30

Ala Pro Leu Glu Asp Glu Cys Glu  
35 40

<210> 275  
<211> 34  
<212> PRT  
<213> Macaca fascicularis

<400> 275

Ala Pro Pro Val Cys Arg Ala Gly Cys Ser Leu Glu His Gly Phe Cys  
1 5 10 15

Glu Gln Pro Gly Glu Cys Arg Cys Leu Glu Gly Trp Thr Gly Pro Leu  
20 25 30

Cys Met

<210> 276  
 <211> 37  
 <212> PRT  
 <213> *Macaca fascicularis*

<400> 276

Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser Cys  
 1 5 10 15

Ser Glu Thr Pro Gly Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe Tyr  
 20 25 30

Gly Leu Arg Cys Glu  
 35

<210> 277  
 <211> 40  
 <212> PRT  
 <213> *Macaca fascicularis*

<400> 277

Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Leu Cys  
 1 5 10 15

Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His Cys Pro Pro  
 20 25 30

Gly Phe Gln Gly Ser Asn Cys Glu  
 35 40

<210> 278  
 <211> 37  
 <212> PRT  
 <213> *Macaca fascicularis*

<400> 278

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
 1 5 10 15

406

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

Gly Pro Arg Cys Glu  
35

<210> 279  
<211> 78  
<212> PRT  
<213> *Macaca fascicularis*

<400> 279

Ser Gly Val Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Leu Cys  
1 5 10 15

Val Gly Gly Ala Asp Pro Asp Ser Ala Tyr Ile Cys His Cys Pro Pro  
20 25 30

Gly Phe Gln Gly Ser Asn Cys Glu Lys Arg Val Asp Arg Cys Ser Leu  
35 40 45

Gln Pro Cys Arg Asn Gly Gly Leu Cys Leu Asp Leu Gly His Ala Leu  
50 55 60

Arg Cys Arg Cys Arg Ala Gly Phe Ala Gly Pro Arg Cys Glu  
65 70 75

<210> 280  
<211> 37  
<212> PRT  
<213> *Macaca fascicularis*

<400> 280

Asn Leu Asp Asp Cys Ala Gly Arg Ala Cys Ala Asn Gly Gly Thr Cys  
1 5 10 15

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

Gly Arg Asp Cys Arg  
35

<210> 281  
<211> 37  
<212> PRT  
<213> *Macaca fascicularis*

<400> 281

Arg Ala Asp Pro Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys  
1 5 10 15

Tyr Ala His Phe Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met  
20 25 30

Gly Ser Arg Cys Glu  
35

<210> 282  
<211> 548  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 282

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

Ala Leu Ile Phe Ile Pro Gln Ala Arg Pro Ala Gly Val Phe Glu Leu  
20 25 30

Gln Ile His Ser Phe Gly Pro Gly Pro Gly Pro Gly Ala Pro Arg Ser  
35 40 45

Pro Cys Ser Ala Arg Gly Pro Cys Arg Leu Phe Phe Arg Val Cys Leu  
50 55 60

Lys Pro Gly Leu Ser Glu Glu Ala Ala Glu Ser Pro Cys Ala Leu Gly  
65 70 75 80

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

Pro Ala Pro Asp Leu Pro Leu Pro Asn Gly Leu Leu Gln Val Pro Phe  
100 105 110

Arg Asp Ala Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Thr Trp Arg  
115 120 125

Glu Glu Leu Gly Asp Gln Ile Gly Gly Pro Ala Trp Ser Leu Leu Ala  
130 135 140

Arg Val Thr Arg Arg Arg Arg Leu Ala Ala Gly Gly Pro Trp Ala Arg  
145 150 155 160

Asp Ile Gln Arg Ala Gly Ala Trp Glu Leu Arg Phe Ser Tyr Arg Ala  
165 170 175

Arg Cys Glu Leu Pro Ala Val Gly Thr Ala Cys Thr Arg Leu Cys Arg  
180 185 190

Pro Arg Ser Ala Pro Ser Arg Cys Gly Pro Gly Leu Arg Pro Cys Ala  
195 200 205

Pro Leu Glu Asp Glu Cys Glu Ala Pro Pro Val Cys Arg Ala Gly Cys  
210 215 220

Ser Leu Glu His Gly Phe Cys Glu Gln Pro Gly Glu Cys Arg Cys Leu  
225 230 235 240

Glu Gly Trp Thr Gly Pro Leu Cys Met Val Pro Ala Ser Thr Ser Ser  
245 250 255



Cys Leu Gly Leu Arg Gly Pro Ser Ser Ala Thr Thr Gly Cys Leu Val  
                   260                                  265                                  270

Pro Gly Pro Gly Pro Cys Asp Gly Asn Pro Cys Ala Asn Gly Gly Ser  
                   275                                  280                                  285

Cys Ser Glu Thr Pro Gly Ser Phe Glu Cys Thr Cys Pro Arg Gly Phe  
                   290                                  295                                  300

Tyr Gly Leu Arg Cys Glu Val Ser Gly Val Thr Cys Ala Asp Gly Pro  
                   305                                  310                                  315                                  320

Cys Phe Asn Gly Gly Leu Cys Val Gly Gly Ala Asp Pro Asp Ser Ala  
                                   325                                  330                                  335

Tyr Ile Cys His Cys Pro Pro Gly Phe Gln Gly Ser Asn Cys Glu Lys  
                   340                                  345                                  350

Arg Val Asp Arg Cys Ser Leu Gln Pro Cys Arg Asn Gly Gly Leu Cys  
                   355                                  360                                  365

Leu Asp Leu Gly His Ala Leu Arg Cys Arg Cys Arg Ala Gly Phe Ala  
                   370                                  375                                  380

Gly Pro Arg Cys Glu His Asn Leu Asp Asp Cys Ala Gly Arg Ala Cys  
                   385                                  390                                  395                                  400

Ala Asn Gly Gly Thr Cys Val Glu Gly Gly Gly Ala His Arg Cys Ser  
                                   405                                  410                                  415

Cys Ala Leu Gly Phe Gly Gly Arg Asp Cys Arg Glu Arg Ala Asp Pro  
                   420                                  425                                  430

Cys Ala Ala Arg Pro Cys Ala His Gly Gly Arg Cys Tyr Ala His Phe  
                   435                                  440                                  445

Ser Gly Leu Val Cys Ala Cys Ala Pro Gly Tyr Met Gly Ser Arg Cys  
450 455 460 410

Glu Phe Pro Val His Pro Asp Gly Val Ser Ala Leu Pro Ala Ala Pro  
465 470 475 480

Pro Gly Leu Arg Pro Gly Asp Pro Gln Arg Tyr Leu Ser Gly Gly Gly  
485 490 495

Gly Ser Gly Ala Gly Val Ile Ala Val Ile Val Val Val Val Ile Ala  
500 505 510

Ile Val Ala Gly Ile Val Val Leu Val Ile Ser Arg Lys Lys Arg Met  
515 520 525

Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu Met Gly Glu Met His Arg  
530 535 540

Glu Leu Asn Ala  
545

<210> 283  
<211> 723  
<212> PRT  
<213> Homo sapiens

<400> 283

Met Gly Ser Arg Cys Ala Leu Ala Leu Ala Val Leu Ser Ala Leu Leu  
1 5 10 15

Cys Gln Val Trp Ser Ser Gly Val Phe Glu Leu Lys Leu Gln Glu Phe  
20 25 30

Val Asn Lys Lys Gly Leu Leu Gly Asn Arg Asn Cys Cys Arg Gly Gly  
35 40 45

Ala Gly Pro Pro Pro Cys Ala Cys Arg Thr Phe Phe Arg Val Cys Leu  
50 55 60

Lys His Tyr Gln Ala Ser Val Ser Pro Glu Pro Pro Cys Thr Tyr Gly  
65 70 75 80

Ser Ala Val Thr Pro Val Leu Gly Val Asp Ser Phe Ser Leu Pro Asp  
85 90 95

Gly Gly Gly Ala Asp Ser Ala Phe Ser Asn Pro Ile Arg Phe Pro Phe  
100 105 110

Gly Phe Thr Trp Pro Gly Thr Phe Ser Leu Ile Ile Glu Ala Leu His  
115 120 125

Thr Asp Ser Pro Asp Asp Leu Ala Thr Glu Asn Pro Glu Arg Leu Ile  
130 135 140

Ser Arg Leu Ala Thr Gln Arg His Leu Thr Val Gly Glu Glu Trp Ser  
145 150 155 160

Gln Asp Leu His Ser Ser Gly Arg Thr Asp Leu Lys Tyr Ser Tyr Arg  
165 170 175

Phe Val Cys Asp Glu His Tyr Tyr Gly Glu Gly Cys Ser Val Phe Cys  
180 185 190

Arg Pro Arg Asp Asp Ala Phe Gly His Phe Thr Cys Gly Glu Arg Gly  
195 200 205

Glu Lys Val Cys Asn Pro Gly Trp Lys Gly Pro Tyr Cys Thr Glu Pro  
210 215 220

Ile Cys Leu Pro Gly Cys Asp Glu Gln His Gly Phe Cys Asp Lys Pro  
225 230 235 240

Gly Glu Cys Lys Cys Arg Val Gly Trp Gln Gly Arg Tyr Cys Asp Glu  
245 250 255

Cys Ile Arg Tyr Pro Gly Cys Leu His Gly Thr Cys Gln Gln Pro Trp  
 260 265 270

Gln Cys Asn Cys Gln Glu Gly Trp Gly Gly Leu Phe Cys Asn Gln Asp  
 275 280 285

Leu Asn Tyr Cys Thr His His Lys Pro Cys Lys Asn Gly Ala Thr Cys  
 290 295 300

Thr Asn Thr Gly Gln Gly Ser Tyr Thr Cys Ser Cys Arg Pro Gly Tyr  
 305 310 315 320

Thr Gly Ala Thr Cys Glu Leu Gly Ile Asp Glu Cys Asp Pro Ser Pro  
 325 330 335

Cys Lys Asn Gly Gly Ser Cys Thr Asp Leu Glu Asn Ser Tyr Ser Cys  
 340 345 350

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

Thr Cys Ala Asp Gly Pro Cys Phe Asn Gly Gly Arg Cys Ser Asp Ser  
 370 375 380

Pro Asp Gly Gly Tyr Ser Cys Arg Cys Pro Val Gly Tyr Ser Gly Phe  
 385 390 395 400

Asn Cys Glu Lys Lys Ile Asp Tyr Cys Ser Ser Ser Pro Cys Ser Asn  
 405 410 415

Gly Ala Lys Cys Val Asp Leu Gly Asp Ala Tyr Leu Cys Arg Cys Gln  
 420 425 430

Ala Gly Phe Ser Gly Arg His Cys Asp Asp Asn Val Asp Asp Cys Ala  
 435 440 445

413  
Ser Ser Pro Cys Ala Asn Gly Gly Thr Cys Arg Asp Gly Val Asn Asp  
450 455 460

Phe Ser Cys Thr Cys Pro Pro Gly Tyr Thr Gly Arg Asn Cys Ser Ala  
465 470 475 480

Pro Val Ser Arg Cys Glu His Ala Pro Cys His Asn Gly Ala Thr Cys  
485 490 495

His Glu Arg Gly His Arg Tyr Val Cys Glu Cys Ala Arg Gly Tyr Gly  
500 505 510

Gly Pro Asn Cys Gln Phe Leu Leu Pro Glu Leu Pro Pro Gly Pro Ala  
515 520 525

Val Val Asp Leu Thr Glu Lys Leu Glu Gly Gln Gly Gly Pro Phe Pro  
530 535 540

Trp Val Ala Val Cys Ala Gly Val Ile Leu Val Leu Met Leu Leu Leu  
545 550 555 560

Gly Cys Ala Ala Val Val Val Cys Val Arg Leu Arg Leu Gln Lys His  
565 570 575

Arg Pro Pro Ala Asp Pro Cys Arg Gly Glu Thr Glu Thr Met Asn Asn  
580 585 590

Leu Ala Asn Cys Gln Arg Glu Lys Asp Ile Ser Val Ser Ile Ile Gly  
595 600 605

Ala Thr Gln Ile Lys Asn Thr Asn Lys Lys Ala Asp Phe His Gly Asp  
610 615 620

His Ser Ala Asp Lys Asn Gly Phe Lys Ala Arg Tyr Pro Ala Val Asp  
625 630 635 640

Tyr Asn Leu Val Gln Asp Leu Lys Gly Asp Asp Thr Ala Val Arg Asp

414  
 645 650 655  
 Ala His Ser Lys Arg Asp Thr Lys Cys Gln Pro Gln Gly Ser Ser Gly  
 660 665 670  
 Glu Glu Lys Gly Thr Pro Thr Thr Leu Arg Gly Gly Glu Ala Ser Glu  
 675 680 685  
 Arg Lys Arg Pro Asp Ser Gly Cys Ser Thr Ser Lys Asp Thr Lys Tyr  
 690 695 700  
 Gln Ser Val Tyr Val Ile Ser Glu Glu Lys Asp Glu Cys Val Ile Ala  
 705 710 715 720  
 Thr Glu Val

<210> 284  
 <211> 685  
 <212> PRT  
 <213> Homo sapiens

<400> 284

Met Ala Ala Ala Ser Arg Ser Ala Ser Gly Trp Ala Leu Leu Leu Leu  
 1 5 10 15  
 Val Ala Leu Trp Gln Gln Arg Ala Ala Gly Ser Gly Val Phe Gln Leu  
 20 25 30  
 Gln Leu Gln Glu Phe Ile Asn Glu Arg Gly Val Leu Ala Ser Gly Arg  
 35 40 45  
 Pro Cys Glu Pro Gly Cys Arg Thr Phe Phe Arg Val Cys Leu Lys His  
 50 55 60  
 Phe Gln Ala Val Val Ser Pro Gly Pro Cys Thr Phe Gly Thr Val Ser  
 65 70 75 80

415

Thr Pro Val Leu Gly Thr Asn Ser Phe Ala Val Arg Asp Asp Ser Ser  
85 90 95

Gly Gly Gly Arg Asn Pro Leu Gln Leu Pro Phe Asn Phe Thr Trp Pro  
100 105 110

Gly Thr Phe Ser Leu Ile Ile Glu Ala Trp His Ala Pro Gly Asp Asp  
115 120 125

Leu Arg Pro Glu Ala Leu Pro Pro Asp Ala Leu Ile Ser Lys Ile Ala  
130 135 140

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

Thr Ser Thr Leu Thr Arg Leu Arg Tyr Ser Tyr Arg Val Ile Cys Ser  
165 170 175

Asp Asn Tyr Tyr Gly Asp Asn Cys Ser Arg Leu Cys Lys Lys Arg Asn  
180 185 190

Asp His Phe Gly His Tyr Val Cys Gln Pro Asp Gly Asn Leu Ser Cys  
195 200 205

Leu Pro Gly Trp Thr Gly Glu Tyr Cys Gln Gln Pro Ile Cys Leu Ser  
210 215 220

Gly Cys His Glu Gln Asn Gly Tyr Cys Ser Lys Pro Ala Glu Cys Leu  
225 230 235 240

Cys Arg Pro Gly Trp Gln Gly Arg Leu Cys Asn Glu Cys Ile Pro His  
245 250 255

Asn Gly Cys Arg His Gly Thr Cys Ser Thr Pro Trp Gln Cys Thr Cys  
260 265 270

Asp Glu Gly Trp Gly Gly Leu Phe Cys Asp Gln Asp Leu Asn Tyr Cys  
275 280 285 416

Thr His His Ser Pro Cys Lys Asn Gly Ala Thr Cys Ser Asn Ser Gly  
290 295 300

Gln Arg Ser Tyr Thr Cys Thr Cys Arg Pro Gly Tyr Thr Gly Val Asp  
305 310 315 320

Cys Glu Leu Glu Leu Ser Glu Cys Asp Ser Asn Pro Cys Arg Asn Gly  
325 330 335

Gly Ser Cys Lys Asp Gln Glu Asp Gly Tyr His Cys Leu Cys Pro Pro  
340 345 350

Gly Tyr Tyr Gly Leu His Cys Glu His Ser Thr Leu Ser Cys Ala Asp  
355 360 365

Ser Pro Cys Phe Asn Gly Gly Ser Cys Arg Glu Arg Asn Gln Gly Ala  
370 375 380

Asn Tyr Ala Cys Glu Cys Pro Pro Asn Phe Thr Gly Ser Asn Cys Glu  
385 390 395 400

Lys Lys Val Asp Arg Cys Thr Ser Asn Pro Cys Ala Asn Gly Gly Gln  
405 410 415

Cys Leu Asn Arg Gly Pro Ser Arg Met Cys Arg Cys Arg Pro Gly Phe  
420 425 430

Thr Gly Thr Tyr Cys Glu Leu His Val Ser Asp Cys Ala Arg Asn Pro  
435 440 445

Cys Ala His Gly Gly Thr Cys His Asp Leu Glu Asn Gly Leu Met Cys  
450 455 460

Thr Cys Pro Ala Gly Phe Ser Gly Arg Arg Cys Glu Val Arg Thr Ser



|                                                                 |                                                 |                             |  |            |     |     |
|-----------------------------------------------------------------|-------------------------------------------------|-----------------------------|--|------------|-----|-----|
| 465                                                             |                                                 | 470                         |  | 417<br>475 |     | 480 |
| Ile Asp Ala Cys                                                 | Ala Ser Ser Pro Cys                             | Phe Asn Arg Ala Thr Cys Tyr |  |            |     |     |
|                                                                 | 485                                             | 490                         |  |            | 495 |     |
| Thr Asp Leu Ser                                                 | Thr Asp Thr Phe Val Cys Asn Cys Pro Tyr Gly Phe |                             |  |            |     |     |
|                                                                 | 500                                             | 505                         |  |            | 510 |     |
| Val Gly Ser Arg Cys Glu Phe Pro Val Gly Leu Pro Pro Ser Phe Pro |                                                 |                             |  |            |     |     |
|                                                                 | 515                                             | 520                         |  |            | 525 |     |
| Trp Val Ala Val Ser Leu Gly Val Gly Leu Ala Val Leu Leu Val Leu |                                                 |                             |  |            |     |     |
|                                                                 | 530                                             | 535                         |  |            | 540 |     |
| Leu Gly Met Val Ala Val Ala Val Arg Gln Leu Arg Leu Arg Arg Pro |                                                 |                             |  |            |     |     |
| 545                                                             | 550                                             |                             |  | 555        |     | 560 |
| Asp Asp Gly Ser Arg Glu Ala Met Asn Asn Leu Ser Asp Phe Gln Lys |                                                 |                             |  |            |     |     |
|                                                                 | 565                                             |                             |  | 570        |     | 575 |
| Asp Asn Leu Ile Pro Ala Ala Gln Leu Lys Asn Thr Asn Gln Lys Lys |                                                 |                             |  |            |     |     |
|                                                                 | 580                                             |                             |  | 585        |     | 590 |
| Glu Leu Glu Val Asp Cys Gly Leu Asp Lys Ser Asn Cys Gly Lys Gln |                                                 |                             |  |            |     |     |
|                                                                 | 595                                             |                             |  | 600        |     | 605 |
| Gln Asn His Thr Leu Asp Tyr Asn Leu Ala Pro Gly Pro Leu Gly Arg |                                                 |                             |  |            |     |     |
|                                                                 | 610                                             |                             |  | 615        |     | 620 |
| Gly Thr Met Pro Gly Lys Phe Pro His Ser Asp Lys Ser Leu Gly Glu |                                                 |                             |  |            |     |     |
| 625                                                             |                                                 | 630                         |  |            | 635 | 640 |
| Lys Ala Pro Leu Arg Leu His Ser Glu Lys Pro Glu Cys Arg Ile Ser |                                                 |                             |  |            |     |     |
|                                                                 | 645                                             |                             |  | 650        |     | 655 |
| Ala Ile Cys Ser Pro Arg Asp Ser Met Tyr Gln Ser Val Cys Leu Ile |                                                 |                             |  |            |     |     |
|                                                                 | 660                                             |                             |  | 665        |     | 670 |

Ser Glu Glu Arg Asn Glu Cys Val Ile Ala Thr Glu Val  
           675                          680                          685

<210> 285  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 285

Gly Gly Gly Gly  
 1

<210> 286  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 286

Gly Gly Gly Gly Ser  
 1                          5

<210> 287  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 287

Gly Gly Gly Gly Gln  
 1                          5

<210> 288

<211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 288

Ser Gly Gly Gly Gly Ser  
 1 5

<210> 289  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 289

Pro Gly Gly Gly Gly Ser  
 1 5

<210> 290  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 290

Pro Gly Gly Asp Gly Ser  
 1 5

<210> 291  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 291

Gly Gly Gly Gly Ser Gly Gly Gly Ser  
1 5

<210> 292

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 292

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10

<210> 293

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 293

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10 15

<210> 294

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 294

His His His His His His  
1 5

<210> 295

421

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

<220>  
<223> Synthetic peptide

<400> 295

Arg Asp Trp Asp Phe Asp Val Phe Gly Gly Gly Thr Pro Val Gly Gly  
1 5 10 15

<210> 296  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<220>  
<221> misc\_feature  
<222> (12)..(12)  
<223> Xaa can be any naturally occurring amino acid

<400> 296

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Xaa Pro Ala Asn Gly  
1 5 10 15

<210> 297  
<211> 16  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 297

Gln Arg Phe Val Thr Gly His Phe Gly Gly Leu Tyr Pro Ala Asn Gly  
1 5 10 15

<210> 298  
<211> 16

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 298

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | Phe | Val | Thr | Gly | His | Phe | Gly | Gly | Leu | His | Pro | Ala | Asn | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

<210> 299  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 299

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | His | Phe | Gly | Gly | Leu | His | Pro |
| 1   |     |     |     | 5   |     |     |     |     |

<210> 300  
 <211> 16  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 300

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | Phe | Cys | Thr | Gly | His | Phe | Gly | Gly | Leu | His | Pro | Cys | Asn | Gly |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

<210> 301  
 <211> 585  
 <212> PRT  
 <213> Homo sapiens

<400> 301

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg | Phe | Lys | Asp | Leu | Gly | Glu |
| 1   |     |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
                   35                                  40                                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
                   50                                  55                                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
   65                                  70                                  75                                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
                                   85                                  90                                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
                   100                                  105                                  110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
                   115                                  120                                  125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
                   130                                  135                                  140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
   145                                  150                                  155                                  160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
                                   165                                  170                                  175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
                   180                                  185                                  190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
                   195                                  200                                  205

424

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400



Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415 425

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 302

<211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 302

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

427  
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

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

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| 355 |     |     |     |     | 360 |     |     |     |     | 428 |     |     |     |     | 365 |     |     |  |  |
| Cys | Tyr | Ala | Lys | Val | Phe | Asp | Glu | Phe | Lys | Pro | Leu | Val | Glu | Glu | Pro |     |     |  |  |
| 370 |     |     |     |     |     |     | 375 |     |     |     |     |     |     | 380 |     |     |     |  |  |
| Gln | Asn | Leu | Ile | Lys | Gln | Asn | Cys | Glu | Leu | Phe | Glu | Gln | Leu | Gly | Gln |     |     |  |  |
| 385 |     |     |     |     |     |     | 390 |     |     |     |     |     |     | 395 |     | 400 |     |  |  |
| Tyr | Lys | Phe | Gln | Asn | Ala | Leu | Leu | Val | Arg | Tyr | Thr | Lys | Lys | Val | Pro |     |     |  |  |
|     |     |     |     | 405 |     |     |     |     |     |     | 410 |     |     |     |     |     |     |  |  |
| Gln | Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val | Ser | Arg | Asn | Leu | Gly | Lys |     |     |  |  |
|     |     |     | 420 |     |     |     |     |     |     | 425 |     |     |     |     |     | 430 |     |  |  |
| Val | Gly | Ser | Lys | Cys | Cys | Lys | His | Pro | Glu | Ala | Lys | Arg | Met | Pro | Cys |     |     |  |  |
|     |     | 435 |     |     |     |     |     |     | 440 |     |     |     |     |     |     | 445 |     |  |  |
| Ala | Glu | Asp | Tyr | Leu | Ser | Val | Val | Leu | Asn | Gln | Leu | Cys | Val | Leu | His |     |     |  |  |
| 450 |     |     |     |     |     |     | 455 |     |     |     |     |     |     | 460 |     |     |     |  |  |
| Glu | Lys | Thr | Pro | Val | Ser | Asp | Arg | Val | Thr | Lys | Cys | Cys | Thr | Glu | Ser |     |     |  |  |
| 465 |     |     |     |     |     |     | 470 |     |     |     |     |     |     | 475 |     | 480 |     |  |  |
| Leu | Val | Asn | Arg | Arg | Pro | Cys | Phe | Ser | Ala | Leu | Glu | Val | Asp | Glu | Thr |     |     |  |  |
|     |     |     |     | 485 |     |     |     |     |     |     | 490 |     |     |     |     |     | 495 |  |  |
| Tyr | Val | Pro | Lys | Glu | Phe | Asn | Ala | Gly | Thr | Phe | Thr | Phe | His | Ala | Asp |     |     |  |  |
|     |     |     | 500 |     |     |     |     |     |     | 505 |     |     |     |     |     | 510 |     |  |  |
| Ile | Cys | Thr | Leu | Ser | Glu | Lys | Glu | Arg | Gln | Ile | Lys | Lys | Gln | Thr | Ala |     |     |  |  |
|     |     | 515 |     |     |     |     |     |     | 520 |     |     |     |     |     |     | 525 |     |  |  |
| Leu | Val | Glu | Leu | Val | Lys | His | Lys | Pro | Lys | Ala | Thr | Lys | Glu | Gln | Leu |     |     |  |  |
| 530 |     |     |     |     |     |     | 535 |     |     |     |     |     |     | 540 |     |     |     |  |  |
| Lys | Ala | Ala | Met | Asp | Asp | Phe | Ala | Ala | Phe | Val | Glu | Lys | Cys | Cys | Lys |     |     |  |  |
| 545 |     |     |     |     |     |     | 550 |     |     |     |     |     |     | 555 |     | 560 |     |  |  |

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
                   565                                  570                                  575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
                   580                                  585

<210> 303  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 303

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1                  5                                  10                                  15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
                   35                                  40                                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
                   50                                  55                                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65                                  70                                  75                                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
                   85                                  90                                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
                   100                                  105                                  110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| 115 |     |     |     |     | 120 |     |     |     |     | 430 |     |     |     |     | 125 |     |  |  |  |
| Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg |     |  |  |  |
| 130 |     |     |     |     |     |     | 135 |     |     |     |     |     |     | 140 |     |     |  |  |  |
| Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg |     |  |  |  |
| 145 |     |     |     |     |     |     | 150 |     |     |     |     |     |     | 155 |     | 160 |  |  |  |
| Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala |     |  |  |  |
|     |     |     |     | 165 |     |     |     |     |     |     | 170 |     |     |     |     |     |  |  |  |
| Cys | Leu | Leu | Pro | Lys | Leu | Asp | Glu | Leu | Arg | Asp | Glu | Gly | Lys | Ala | Ser |     |  |  |  |
|     |     |     | 180 |     |     |     |     |     |     | 185 |     |     |     |     |     |     |  |  |  |
| Ser | Ala | Lys | Gln | Arg | Leu | Lys | Cys | Ala | Ser | Leu | Gln | Lys | Phe | Gly | Glu |     |  |  |  |
|     |     | 195 |     |     |     |     |     |     | 200 |     |     |     |     |     |     |     |  |  |  |
| Arg | Ala | Phe | Lys | Ala | Trp | Ala | Val | Ala | Arg | Leu | Ser | Gln | Arg | Phe | Pro |     |  |  |  |
|     |     | 210 |     |     |     |     |     |     | 215 |     |     |     |     |     |     |     |  |  |  |
| Lys | Ala | Glu | Phe | Ala | Glu | Val | Ser | Lys | Leu | Val | Thr | Asp | Leu | Thr | Lys |     |  |  |  |
| 225 |     |     |     |     |     |     | 230 |     |     |     |     |     |     | 235 |     | 240 |  |  |  |
| Val | His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu | Leu | Glu | Cys | Ala | Asp | Asp |     |  |  |  |
|     |     |     |     | 245 |     |     |     |     |     |     | 250 |     |     |     |     |     |  |  |  |
| Arg | Ala | Asp | Leu | Ala | Lys | Tyr | Ile | Cys | Glu | Asn | Gln | Asp | Ser | Ile | Ser |     |  |  |  |
|     |     |     | 260 |     |     |     |     |     |     | 265 |     |     |     |     |     |     |  |  |  |
| Ser | Lys | Leu | Lys | Glu | Cys | Cys | Glu | Lys | Pro | Leu | Leu | Glu | Lys | Ser | His |     |  |  |  |
|     |     | 275 |     |     |     |     |     |     | 280 |     |     |     |     |     |     |     |  |  |  |
| Cys | Ile | Ala | Glu | Val | Glu | Asn | Asp | Glu | Met | Pro | Ala | Asp | Leu | Pro | Ser |     |  |  |  |
|     |     | 290 |     |     |     |     |     |     | 295 |     |     |     |     |     |     |     |  |  |  |
| Leu | Ala | Ala | Asp | Phe | Val | Glu | Ser | Lys | Asp | Val | Cys | Lys | Asn | Tyr | Ala |     |  |  |  |
| 305 |     |     |     |     |     |     | 310 |     |     |     |     |     |     | 315 |     | 320 |  |  |  |

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
                   325                                  330                                  335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Arg Leu Ala Lys Thr  
                   340                                  345                                  350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
                   355                                  360                                  365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
                   370                                  375                                  380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
   385                                  390                                  395                                  400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
                   405                                  410                                  415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
                   420                                  425                                  430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
                   435                                  440                                  445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
                   450                                  455                                  460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
   465                                  470                                  475                                  480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
                   485                                  490                                  495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
                   500                                  505                                  510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
 565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
 580 585

<210> 304  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 304

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80



Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
                     85                    90                    95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
                     100                    105                    110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
                     115                    120                    125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
                     130                    135                    140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
                     145                    150                    155                    160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
                     165                    170                    175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
                     180                    185                    190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
                     195                    200                    205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
                     210                    215                    220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
                     245                    250                    255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
                     260                    265                    270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

435  
Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 305  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 305

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

437  
Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
225 230 235 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys

420 425 438 430  
 Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445  
 Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460  
 Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480  
 Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Gly Val Asp Glu Thr  
 485 490 495  
 Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510  
 Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525  
 Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540  
 Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560  
 Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
 565 570 575  
 Ala Ala Ser Gln Ala Ala Leu Gly Leu  
 580 585

<210> 306

<211> 585

<212> PRT

<213> Artificial Sequence

<220>

&lt;223&gt; Synthetic peptide

&lt;400&gt; 306

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser

180 440 190  
 Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205  
 Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220  
 Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
 225 230 235 240  
 Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255  
 Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270  
 Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285  
 Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300  
 Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320  
 Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335  
 Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350  
 Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365  
 Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380



Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
 565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
           580                  585

<210> 307  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 307

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1                  5                  10                  15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
           35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
           50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65                  70                  75                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
           85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
           100                  105                  110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
           115                  120                  125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
           130                  135                  140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 445 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 308  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 308

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300 447

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr

485 448 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 309  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 309

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45



449  
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp

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

451

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 310

<211> 585

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 310

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu

452

1

5

10

15

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

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

454

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

455

<210> 311  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 311

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350



Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 457 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys

545                      550                      458  
555                      560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

|                       |                     |
|-----------------------|---------------------|
| $\langle 210 \rangle$ | 312                 |
| $\langle 211 \rangle$ | 585                 |
| $\langle 212 \rangle$ | PRT                 |
| $\langle 213 \rangle$ | Artificial Sequence |

<220>  
<223> Synthetic peptide

$\langle 400 \rangle$     312

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125 459

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 305 |     | 310 |     | 460<br>315 |     | 320 |     |     |     |     |     |     |     |     |     |
| Glu | Ala | Lys | Asp | Val        | Phe | Leu | Gly | Met | Phe | Leu | Tyr | Glu | Tyr | Ala | Arg |
|     |     |     |     | 325        |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Arg | His | Pro | Asp | Tyr        | Ser | Val | Val | Leu | Leu | Leu | Arg | Leu | Ala | Lys | Thr |
|     |     |     | 340 |            |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Tyr | Glu | Thr | Thr | Leu        | Glu | Lys | Cys | Cys | Ala | Ala | Ala | Asp | Pro | His | Glu |
|     |     | 355 |     |            |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Cys | Tyr | Ala | Lys | Val        | Phe | Asp | Glu | Phe | Lys | Pro | Leu | Val | Glu | Glu | Pro |
|     | 370 |     |     |            |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gln | Asn | Leu | Ile | Lys        | Gln | Asn | Cys | Glu | Leu | Phe | Glu | Gln | Leu | Gly | Glu |
| 385 |     |     |     |            | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Tyr | Lys | Phe | Gln | Asn        | Ala | Leu | Leu | Val | Arg | Tyr | Thr | Lys | Lys | Val | Pro |
|     |     |     |     | 405        |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Gln | Val | Ser | Thr | Pro        | Thr | Leu | Val | Glu | Val | Ser | Arg | Asn | Leu | Gly | Lys |
|     |     |     | 420 |            |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Gly | Ser | Lys | Cys        | Cys | Lys | His | Pro | Glu | Ala | Lys | Arg | Met | Pro | Cys |
|     |     | 435 |     |            |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ala | Glu | Asp | Tyr | Leu        | Ser | Val | Val | Leu | Asn | Gln | Leu | Cys | Val | Leu | His |
|     | 450 |     |     |            |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Glu | Lys | Thr | Pro | Val        | Ser | Asp | Arg | Val | Thr | Lys | Cys | Cys | Thr | Glu | Ser |
| 465 |     |     |     |            | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Leu | Val | Asn | Arg | Arg        | Pro | Cys | Phe | Ser | Ala | Leu | Glu | Val | Asp | Glu | Thr |
|     |     |     |     | 485        |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Tyr | Val | Pro | Lys | Glu        | Phe | Asn | Ala | Gly | Thr | Phe | Thr | Phe | His | Ala | Asp |
|     |     |     | 500 |            |     |     |     | 505 |     |     |     |     | 510 |     |     |

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540

Lys Ala Ala Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
 565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
 580 585

<210> 313  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 313

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 65  |     | 70  |     |     |     |     |     |     |     | 462 |     |     |     |     |     | 80 |
|     |     |     |     |     |     |     |     |     |     | 75  |     |     |     |     |     |    |
| Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys | Cys | Ala | Lys | Gln | Glu | Pro |    |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |    |
| Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys | Asp | Asp | Asn | Pro | Asn | Leu |    |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |    |
| Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val | Met | Cys | Thr | Ala | Phe | His |    |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |    |
| Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg |    |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |    |
| Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg |    |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |    |
| Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala |    |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |    |
| Cys | Leu | Leu | Pro | Lys | Leu | Asp | Glu | Leu | Arg | Asp | Glu | Gly | Lys | Ala | Ser |    |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |    |
| Ser | Ala | Lys | Gln | Arg | Leu | Lys | Cys | Ala | Ser | Leu | Gln | Lys | Phe | Gly | Glu |    |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |    |
| Arg | Ala | Phe | Lys | Ala | Trp | Ala | Val | Ala | Arg | Leu | Ser | Gln | Arg | Phe | Pro |    |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |    |
| Lys | Ala | Glu | Phe | Ala | Glu | Val | Ser | Lys | Leu | Val | Thr | Asp | Leu | Thr | Lys |    |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     | 240 |     |    |
| Val | His | Thr | Glu | Cys | Cys | His | Gly | Asp | Leu | Leu | Glu | Cys | Ala | Asp | Asp |    |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |    |
| Arg | Ala | Asp | Leu | Ala | Lys | Tyr | Ile | Cys | Glu | Asn | Gln | Asp | Ser | Ile | Ser |    |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |    |

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

464

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 314  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 314

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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



Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

466

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430 467

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 315  
<211> 585  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 315

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg | Phe | Lys | Asp | Leu | Gly | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu | Ile | Ala | Phe | Ala | Gln | Tyr | Leu | Gln |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ser | Pro | Phe | Glu | Asp | His | Val | Lys | Leu | Val | Asn | Glu | Val | Thr | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Lys | Thr | Cys | Val | Ala | Asp | Glu | Ser | Ala | Glu | Asn | Cys | Asp | Lys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | His | Thr | Leu | Phe | Gly | Asp | Lys | Leu | Cys | Thr | Val | Ala | Thr | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys | Cys | Ala | Lys | Gln | Glu | Pro |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys | Asp | Asp | Asn | Pro | Asn | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val | Met | Cys | Thr | Ala | Phe | His |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190 469

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 370        |            |            |            |            | 375        |            |            |            |            | 470        |            |            |            |            | 380        |  |  |  |  |
| Gln<br>385 | Asn        | Leu        | Ile        | Lys        | Gln<br>390 | Asn        | Cys        | Glu        | Leu        | Phe<br>395 | Glu        | Gln        | Leu        | Gly        | Glu<br>400 |  |  |  |  |
| Tyr        | Lys        | Phe        | Gln        | Asn<br>405 | Ala        | Leu        | Leu        | Val        | Arg<br>410 | Tyr        | Thr        | Lys        | Lys        | Val<br>415 | Pro        |  |  |  |  |
| Gln        | Val        | Ser        | Thr<br>420 | Pro        | Thr        | Leu        | Val        | Glu<br>425 | Val        | Ser        | Arg        | Asn        | Leu<br>430 | Gly        | Lys        |  |  |  |  |
| Val        | Gly        | Ser<br>435 | Lys        | Cys        | Cys        | Lys        | His<br>440 | Pro        | Glu        | Ala        | Lys        | Arg<br>445 | Met        | Pro        | Cys        |  |  |  |  |
| Ala        | Glu<br>450 | Asp        | Tyr        | Leu        | Ser        | Val<br>455 | Val        | Leu        | Asn        | Gln        | Leu<br>460 | Cys        | Val        | Leu        | His        |  |  |  |  |
| Glu<br>465 | Lys        | Thr        | Pro        | Val        | Ser<br>470 | Asp        | Arg        | Val        | Thr        | Lys<br>475 | Cys        | Cys        | Thr        | Glu        | Ser<br>480 |  |  |  |  |
| Leu        | Val        | Asn        | Arg        | Arg<br>485 | Pro        | Cys        | Phe        | Ser        | Ala<br>490 | Leu        | Gly        | Val        | Asp        | Glu<br>495 | Thr        |  |  |  |  |
| Tyr        | Val        | Pro        | Lys<br>500 | Glu        | Phe        | Asn        | Ala        | Glu<br>505 | Thr        | Phe        | Thr        | Phe        | His<br>510 | Ala        | Asp        |  |  |  |  |
| Ile        | Cys        | Thr<br>515 | Leu        | Ser        | Glu        | Lys        | Glu<br>520 | Arg        | Gln        | Ile        | Lys        | Lys<br>525 | Gln        | Thr        | Ala        |  |  |  |  |
| Leu        | Val<br>530 | Glu        | Leu        | Val        | Lys        | His<br>535 | Lys        | Pro        | Lys        | Ala        | Thr<br>540 | Lys        | Glu        | Gln        | Leu        |  |  |  |  |
| Lys<br>545 | Ala        | Val        | Met        | Asp        | Lys<br>550 | Phe        | Ala        | Ala        | Phe        | Val<br>555 | Glu        | Lys        | Cys        | Cys        | Lys<br>560 |  |  |  |  |
| Ala        | Asp        | Asp        | Lys        | Glu<br>565 | Thr        | Cys        | Phe        | Ala        | Glu<br>570 | Glu        | Gly        | Pro        | Lys        | Leu<br>575 | Val        |  |  |  |  |

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
                   580                  585

<210> 316  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 316

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1                  5                  10                  15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
                   35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
                   50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65                  70                  75                  80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
                   85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
                   100                  105                  110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
                   115                  120                  125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg

130 135 472 140  
 Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160  
 Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175  
 Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190  
 Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205  
 Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220  
 Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
 225 230 235 240  
 Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255  
 Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270  
 Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285  
 Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300  
 Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320  
 Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335



Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

474

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 317  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 317

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

476

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 477 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 318  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 318

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

478

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255 479

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys





481

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu

205

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
 565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
 580 585

<210> 320  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 320

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Ser Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
                           165                                          170                                          175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
                           180                                          185                                          190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
                           195                                          200                                          205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
                           210                                          215                                          220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
                           245                                          250                                          255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
                           260                                          265                                          270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
                           275                                          280                                          285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
                           290                                          295                                          300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
                           305                                          310                                          315                                          320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
                           325                                          330                                          335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
                           340                                          345                                          350

486

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
 565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
 580 585

<210> 321  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 321

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300



Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320 489

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp

490  
 500 505 510  
 Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525  
 Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540  
 Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560  
 Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
 565 570 575  
 Ala Ala Ser Gln Ala Ala Leu Gly Leu  
 580 585

<210> 322  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 322

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

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

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

491  
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser

492

260

265

270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

493

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Gly Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Ala Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 323  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 323

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln

20

25

30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

496

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 324

<211> 585

<212> PRT

<213> Artificial Sequence



&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 324

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ala | His | Lys | Ser | Glu | Val | Ala | His | Arg | Phe | Lys | Asp | Leu | Gly | Glu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Phe | Lys | Ala | Leu | Val | Leu | Ile | Ala | Phe | Ala | Gln | Tyr | Leu | Gln |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Pro | Phe | Glu | Asp | His | Val | Lys | Leu | Val | Asn | Glu | Val | Thr | Glu |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Lys | Thr | Cys | Val | Ala | Asp | Glu | Ser | Ala | Glu | Asn | Cys | Asp | Lys |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | His | Thr | Leu | Phe | Gly | Asp | Lys | Leu | Cys | Thr | Val | Ala | Thr | Leu |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Thr | Tyr | Gly | Glu | Met | Ala | Asp | Cys | Cys | Ala | Lys | Gln | Glu | Pro |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Arg | Asn | Glu | Cys | Phe | Leu | Gln | His | Lys | Asp | Asp | Asn | Pro | Asn | Leu |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Arg | Leu | Val | Arg | Pro | Glu | Val | Asp | Val | Met | Cys | Thr | Ala | Phe | His |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Asn | Glu | Glu | Thr | Phe | Leu | Lys | Lys | Tyr | Leu | Tyr | Glu | Ile | Ala | Arg |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | His | Pro | Tyr | Phe | Tyr | Ala | Pro | Glu | Leu | Leu | Phe | Phe | Ala | Lys | Arg |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Lys | Ala | Ala | Phe | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

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

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 499 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val

565 570 500 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 325  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 325

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 501 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
225 230 235 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 502 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 325 |     |     |     |     |     |     |     | 330 |     |     |     | 335 |     |     |     |     |
| Arg | His | Pro | Asp | Tyr | Ser | Val | Val | Leu | Leu | Leu | Arg | Leu | Ala | Lys | Thr |     |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |     |
| Tyr | Glu | Thr | Thr | Leu | Glu | Lys | Cys | Cys | Ala | Ala | Ala | Asp | Pro | His | Glu |     |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |     |
| Cys | Tyr | Ala | Lys | Val | Phe | Asp | Glu | Phe | Lys | Pro | Leu | Val | Glu | Glu | Pro |     |
|     |     | 370 |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |     |
| Gln | Asn | Leu | Ile | Lys | Gln | Asn | Cys | Glu | Leu | Phe | Glu | Gln | Leu | Gly | Glu |     |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     |     | 400 |
| Tyr | Lys | Phe | Gln | Asn | Ala | Leu | Leu | Val | Arg | Tyr | Thr | Lys | Lys | Val | Pro |     |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |
| Gln | Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val | Ser | Arg | Asn | Leu | Gly | Lys |     |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |     |
| Val | Gly | Ser | Lys | Cys | Cys | Lys | His | Pro | Glu | Ala | Lys | Arg | Met | Pro | Cys |     |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |     |
| Ala | Glu | Asp | Tyr | Leu | Ser | Val | Val | Leu | Asn | Gln | Leu | Cys | Val | Leu | His |     |
|     |     | 450 |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |     |
| Glu | Lys | Thr | Pro | Val | Ser | Asp | Arg | Val | Thr | Lys | Cys | Cys | Thr | Glu | Ser |     |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     | 480 |     |     |
| Leu | Val | Asn | Arg | Arg | Pro | Cys | Phe | Ser | Ala | Leu | Gly | Val | Asp | Glu | Thr |     |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |     |
| Tyr | Val | Pro | Lys | Glu | Phe | Asn | Ala | Glu | Thr | Phe | Thr | Phe | His | Ala | Asp |     |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |     |
| Ile | Cys | Thr | Leu | Ser | Glu | Lys | Glu | Arg | Gln | Ile | Lys | Lys | Gln | Thr | Ala |     |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |     |

503

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 326

<211> 585

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 326

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro

504

85

90

95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
 225 230 235 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285



Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
 340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

506

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 327

<211> 585

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 327

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
 225 230 235 240

508

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 509 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro His Leu Val  
565 570 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu  
580 585

<210> 328  
<211> 585  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 328

510

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
180 185 190

511  
Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
210 215 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
225 230 235 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
290 295 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 385 |     | 390 |     | 512 |     | 400 |     |     |     |     |     |     |     |     |     |
|     |     |     |     | 395 |     |     |     |     |     |     |     |     |     |     |     |
| Tyr | Lys | Phe | Gln | Asn | Ala | Leu | Leu | Val | Arg | Tyr | Thr | Lys | Lys | Val | Pro |
|     |     |     | 405 |     |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Gln | Val | Ser | Thr | Pro | Thr | Leu | Val | Glu | Val | Ser | Arg | Asn | Leu | Gly | Lys |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Val | Gly | Ser | Lys | Cys | Cys | Lys | His | Pro | Glu | Ala | Lys | Arg | Met | Pro | Cys |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Ala | Glu | Asp | Tyr | Leu | Ser | Val | Val | Leu | Asn | Gln | Leu | Cys | Val | Leu | His |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Glu | Lys | Thr | Pro | Val | Ser | Asp | Arg | Val | Thr | Lys | Cys | Cys | Thr | Glu | Ser |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |
| Leu | Val | Asn | Arg | Arg | Pro | Cys | Phe | Ser | Ala | Leu | Glu | Val | Asp | Glu | Thr |
|     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |     | 495 |     |
| Tyr | Val | Pro | Lys | Glu | Phe | Asn | Ala | Glu | Thr | Phe | Thr | Phe | His | Ala | Asp |
|     |     |     | 500 |     |     |     |     | 505 |     |     |     |     | 510 |     |     |
| Ile | Cys | Thr | Leu | Ser | Glu | Lys | Glu | Arg | Gln | Ile | Lys | Lys | Gln | Thr | Ala |
|     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |     |     |     |
| Leu | Val | Glu | Leu | Val | Lys | His | Lys | Pro | Lys | Ala | Thr | Lys | Glu | Gln | Leu |
|     | 530 |     |     |     |     | 535 |     |     |     |     | 540 |     |     |     |     |
| Lys | Ala | Val | Met | Asp | Asp | Phe | Ala | Ala | Phe | Val | Glu | Lys | Cys | Cys | Lys |
| 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |     |     | 560 |
| Ala | Asp | Asp | Lys | Glu | Thr | Cys | Phe | Ala | Glu | Glu | Gly | Pro | His | Leu | Val |
|     |     |     |     | 565 |     |     |     |     | 570 |     |     |     |     | 575 |     |
| Ala | Ala | Ser | Lys | Ala | Ala | Leu | Gly | Leu |     |     |     |     |     |     |     |
|     |     |     | 580 |     |     |     |     | 585 |     |     |     |     |     |     |     |



<210> 329  
 <211> 585  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 329

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
 1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
 20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
 35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
 50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
 65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
 85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
 100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg

|     |     |     |     |            |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 145 |     | 150 |     | 514<br>155 |     | 160 |     |     |     |     |     |     |     |     |     |
| Tyr | Lys | Ala | Ala | Phe        | Thr | Glu | Cys | Cys | Gln | Ala | Ala | Asp | Lys | Ala | Ala |
|     |     |     |     | 165        |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Cys | Leu | Leu | Pro | Lys        | Leu | Asp | Glu | Leu | Arg | Asp | Glu | Gly | Lys | Ala | Ser |
|     |     |     | 180 |            |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Ser | Ala | Lys | Gln | Arg        | Leu | Lys | Cys | Ala | Ser | Leu | Gln | Lys | Phe | Gly | Glu |
|     |     | 195 |     |            |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Arg | Ala | Phe | Lys | Ala        | Trp | Ala | Val | Ala | Arg | Leu | Ser | Gln | Arg | Phe | Pro |
|     | 210 |     |     |            |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Lys | Ala | Glu | Phe | Ala        | Glu | Val | Ser | Lys | Leu | Val | Thr | Asp | Leu | Thr | Lys |
| 225 |     |     |     |            | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Val | His | Thr | Glu | Cys        | Cys | His | Gly | Asp | Leu | Leu | Glu | Cys | Ala | Asp | Asp |
|     |     |     |     | 245        |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Arg | Ala | Asp | Leu | Ala        | Lys | Tyr | Ile | Cys | Glu | Asn | Gln | Asp | Ser | Ile | Ser |
|     |     |     | 260 |            |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Ser | Lys | Leu | Lys | Glu        | Cys | Cys | Glu | Lys | Pro | Leu | Leu | Glu | Lys | Ser | His |
|     |     | 275 |     |            |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Cys | Ile | Ala | Glu | Val        | Glu | Asn | Asp | Glu | Met | Pro | Ala | Asp | Leu | Pro | Ser |
|     | 290 |     |     |            |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Leu | Ala | Ala | Asp | Phe        | Val | Glu | Ser | Lys | Asp | Val | Cys | Lys | Asn | Tyr | Ala |
| 305 |     |     |     |            | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Glu | Ala | Lys | Asp | Val        | Phe | Leu | Gly | Met | Phe | Leu | Tyr | Glu | Tyr | Ala | Arg |
|     |     |     |     | 325        |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Arg | His | Pro | Asp | Tyr        | Ser | Val | Val | Leu | Leu | Leu | Arg | Leu | Ala | Lys | Thr |
|     |     |     | 340 |            |     |     |     | 345 |     |     |     |     | 350 |     |     |

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
 485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540

516

Lys Ala Val Met Asp Lys Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 330

<211> 585

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 330

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

Gln Ala Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
 115 120 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg  
 130 135 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg  
 145 150 155 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala  
 165 170 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser  
 180 185 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu  
 195 200 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro  
 210 215 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys  
 225 230 235 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp  
 245 250 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser  
 260 265 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His  
 275 280 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser  
 290 295 300

518

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
305 310 315 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
325 330 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr  
340 345 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
355 360 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
370 375 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
385 390 395 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
405 410 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
420 425 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
435 440 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
450 455 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
465 470 475 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Asp Val Asp Glu Thr  
485 490 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
500 505 510 519

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
515 520 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
530 535 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
545 550 555 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Pro Lys Leu Val  
565 570 575

Ala Ala Ser Lys Ala Ala Leu Gly Leu  
580 585

<210> 331  
<211> 330  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 331

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys  
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
50 55 60

520

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr  
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys  
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys  
100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu  
165 170 175

Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu  
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn  
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu  
225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
245 250 255



Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
260 265 270 521

Asn Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
275 280 285

Leu Tyr Ser Asp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr  
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
325 330

<210> 332  
<211> 333  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 332

Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser  
1 5 10 15

Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp  
20 25 30

Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro  
35 40 45

Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn  
50 55 60

Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys  
65 70 75 80

Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val  
                     85                    90                    95

Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Asp Lys Thr His Thr Cys  
                     100                    105                    110

Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu  
                     115                    120                    125

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu  
                     130                    135                    140

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys  
                     145                    150                    155                    160

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys  
                     165                    170                    175

Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu  
                     180                    185                    190

Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys  
                     195                    200                    205

Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys  
                     210                    215                    220

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser  
                     225                    230                    235                    240

Arg Lys Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys  
                     245                    250                    255

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln  
                     260                    265                    270

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly  
275 280 285 523

Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln  
290 295 300

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn  
305 310 315 320

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
325 330

<210> 333  
<211> 330  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 333

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg  
1 5 10 15

Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr  
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser  
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser  
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr  
65 70 75 80

Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys  
85 90 95

Thr Val Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys  
 100 105 110

Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro  
 115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys  
 130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp  
 145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu  
 165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu  
 180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn  
 195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly  
 210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu  
 225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr  
 245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn  
 260 265 270

Asn Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe  
 275 280 285

Leu Tyr Ser Asp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn  
290 295 300 525

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr  
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
325 330

<210> 334  
<211> 338  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 334

Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser  
1 5 10 15

Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp  
20 25 30

Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro  
35 40 45

Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn  
50 55 60

Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys  
65 70 75 80

Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val  
85 90 95

Glu Lys Thr Val Ala Pro Thr Glu Cys Ser Glu Pro Lys Ser Ser Asp  
100 105 110

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly  
 115 120 125

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 130 135 140

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 145 150 155 160

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 165 170 175

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 180 185 190

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 195 200 205

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 210 215 220

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 225 230 235 240

Thr Leu Pro Pro Ser Arg Lys Glu Met Thr Lys Asn Gln Val Ser Leu  
 245 250 255

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
 260 265 270

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
 275 280 285

Leu Lys Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
 290 295 300

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
 305 310 315 320

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
 325 330 335

Gly Lys

<210> 335  
 <211> 227  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 335

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

528

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Lys Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Lys Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro Gly Lys  
225

<210> 336  
<211> 227  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 336

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30



Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Asp Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Asp Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro Gly Lys  
225

<210> 337  
<211> 232  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 337

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
1 5 10 15

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
20 25 30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
35 40 45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
50 55 60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln  
65 70 75 80

Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln  
85 90 95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
100 105 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
115 120 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Lys Glu Met Thr  
130 135 140

531

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
145 150 155 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
165 170 175

Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu Tyr  
180 185 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
195 200 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
210 215 220

Ser Leu Ser Leu Ser Pro Gly Lys  
225 230

<210> 338  
<211> 232  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 338

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
1 5 10 15

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
20 25 30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
35 40 45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val

50 55 532 60  
 Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln  
 65 70 75 80  
 Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln  
 85 90 95  
 Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
 100 105 110  
 Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
 115 120 125  
 Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
 130 135 140  
 Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
 145 150 155 160  
 Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
 165 170 175  
 Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
 180 185 190  
 Ser Asp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
 195 200 205  
 Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
 210 215 220  
 Ser Leu Ser Leu Ser Pro Gly Lys  
 225 230

<210> 339

<211> 232

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 339

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
 1 5 10 15

Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
 20 25 30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
 35 40 45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
 50 55 60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln  
 65 70 75 80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln  
 85 90 95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
 100 105 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
 115 120 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Lys Glu Met Thr  
 130 135 140

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
 145 150 155 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr

165 534 175  
 Lys Thr Thr Pro Pro Val Leu Lys Ser Asp Gly Ser Phe Phe Leu Tyr  
 180 185 190  
 Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
 195 200 205  
 Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
 210 215 220  
 Ser Leu Ser Leu Ser Pro Gly Lys  
 225 230  
 <210> 340  
 <211> 232  
 <212> PRT  
 <213> Artificial Sequence  
 <220>  
 <223> Synthetic peptide  
 <400> 340  
 Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
 1 5 10 15  
 Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
 20 25 30  
 Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
 35 40 45  
 Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
 50 55 60  
 Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln  
 65 70 75 80

535  
Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln  
85 90 95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
100 105 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
115 120 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
130 135 140

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
145 150 155 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
165 170 175

Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
180 185 190

Ser Asp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
195 200 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
210 215 220

Ser Leu Ser Leu Ser Pro Gly Lys  
225 230

<210> 341  
<211> 217  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 341

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys  
 1 5 10 15

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val  
 20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr  
 35 40 45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu  
 50 55 60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His  
 65 70 75 80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys  
 85 90 95

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln  
 100 105 110

Pro Arg Glu Pro Gln Val Thr Thr Leu Pro Pro Ser Arg Glu Glu Met  
 115 120 125

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro  
 130 135 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn  
 145 150 155 160

Tyr Asp Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu  
 165 170 175

Tyr Ser Asp Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val  
 180 185 190



537  
Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln  
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Lys  
210 215

<210> 342  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 342

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 343  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 343

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 344  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 344

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 345  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 345

Ile Tyr Ala Met Asn  
 1 5

<210> 346  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 346

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Ser

<210> 347  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 347

His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe Ala Tyr  
 1 5 10

<210> 348  
 <211> 125

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 348

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120 125

<210> 349  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 349

540

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 350  
<211> 249  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 350

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ile Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Phe Phe  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
 165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 351  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 351

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 352  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 352

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 353  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 353

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 354  
<211> 5

<212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 354

Lys Tyr Ala Met Asn  
 1 5

<210> 355  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 355

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Asp

<210> 356  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 356

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr  
 1 5 10

<210> 357  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 357

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120 125

&lt;210&gt; 358

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 358

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
 1 5 10 15



545

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 359

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 359

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp

50

55

546

60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
 165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 245

<210> 360  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 360

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 361  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 361

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 362  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 362

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 363  
<211> 5  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 363

Ser Tyr Ala Met Asn

1 5

&lt;210&gt; 364

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 364

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser

1 5 10 15

Val Lys Gly

&lt;210&gt; 365

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 365

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp Ala Tyr

1 5 10

&lt;210&gt; 366

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

549

<400> 366

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Glu Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 367

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 367

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly

550

20

25

30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 368

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 368

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Glu Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80 551

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Phe Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 369

<211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 369

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
 1 5 10

<210> 370  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 370

Gly Thr Lys Phe Leu Ala Pro  
 1 5

<210> 371  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 371

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
 1 5

<210> 372  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide



<400> 372

Arg Tyr Ala Met Asn  
1 5

<210> 373

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 373

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
1 5 10 15

Val Lys Gly

<210> 374

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 374

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe Ala Tyr  
1 5 10

<210> 375

<211> 125

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 375

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly

554

1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Arg Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 376  
<211> 109  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 376

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 55 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 377  
<211> 249  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 377

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Arg Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

556

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Tyr Phe  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 378

<211> 14

<212> PRT

<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 378

Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
 1 5 10

&lt;210&gt; 379

&lt;211&gt; 7

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 379

Ala Thr Asp Met Arg Pro Ser  
 1 5

&lt;210&gt; 380

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 380

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
 1 5

&lt;210&gt; 381

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 381

Val Tyr Ala Met Asn

1 5

<210> 382  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 382

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Lys

<210> 383  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 383

His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp Ala Tyr  
 1 5 10

<210> 384  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 384

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

559  
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 385  
<211> 109  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 385

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

560

Leu Ile Gly Ala Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 386

<211> 249

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 386

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95



Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Leu Ser Trp Trp  
                   100                  105                  110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
           115                  120                  125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
       130                  135                  140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
   145                  150                  155                  160

Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
                   165                  170                  175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Ala  
           180                  185                  190

Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
           195                  200                  205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
       210                  215                  220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
   225                  230                  235                  240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
                   245

<210> 387

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 387

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 388

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 388

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 389

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 389

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 390

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 390

Lys Tyr Ala Met Asn  
1 5

<210> 391  
 <211> 19  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 391

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Ser

<210> 392  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 392

His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr Ala Tyr  
 1 5 10

<210> 393  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 393

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30

564

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 394  
<211> 109  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 394

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

565

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 395  
<211> 249  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 395

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Ser Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Thr Ser Tyr Tyr

100 105 566 110  
 Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 115 120 125  
 Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 130 135 140  
 Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 145 150 155 160  
 Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
 165 170 175  
 Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 180 185 190  
 Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 195 200 205  
 Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 210 215 220  
 Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 225 230 235 240  
 Gly Gly Gly Thr Lys Leu Thr Val Leu  
 245

<210> 396  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 396

567

Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 397  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 397

Ala Thr Asp Met Arg Pro Ser  
1 5

<210> 398  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 398

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 399  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 399

Gly Tyr Ala Met Asn  
1 5

<210> 400  
<211> 19  
<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 400

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Val Lys Glu

<210> 401

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 401

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Arg | Asn | Phe | Gly | Asn | Ser | Tyr | Leu | Ser | Trp | Phe | Ala | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     |

<210> 402

<211> 125

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 402

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Gly | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |



Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Glu Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Arg Asn Phe Gly Asn Ser Tyr Leu Ser Trp Phe  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
 115 120 125

<210> 403  
 <211> 109  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 403

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
 1 5 10 15

Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly  
 20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
 35 40 45

Leu Ile Gly Ala Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe  
 50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val

|       |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 65    |                     |     |     |     | 70  |     |     |     |     | 570 |     |     |     |     |     | 80 |
| Gln   | Pro                 | Glu | Asp | Glu | Ala | Glu | Tyr | Tyr | Cys | Ala | Leu | Trp | Tyr | Ser | Asn |    |
|       |                     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |    |
| Arg   | Trp                 | Val | Phe | Gly | Gly | Gly | Thr | Lys | Leu | Thr | Val | Leu |     |     |     |    |
|       |                     |     | 100 |     |     |     |     | 105 |     |     |     |     |     |     |     |    |
| <210> | 404                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <211> | 249                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <212> | PRT                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <213> | Artificial Sequence |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <220> |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <223> | Synthetic peptide   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| <400> | 404                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| Glu   | Val                 | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |    |
| 1     |                     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |    |
| Ser   | Leu                 | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Gly | Tyr |    |
|       |                     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |    |
| Ala   | Met                 | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |    |
|       |                     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |    |
| Ala   | Arg                 | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |    |
|       | 50                  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |    |
| Ser   | Val                 | Lys | Glu | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |    |
| 65    |                     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |    |
| Ala   | Tyr                 | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |    |
|       |                     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |    |
| Tyr   | Cys                 | Val | Arg | His | Arg | Asn | Phe | Gly | Asn | Ser | Tyr | Leu | Ser | Trp | Phe |    |
|       |                     |     | 100 |     |     |     |     | 105 |     |     |     |     |     | 110 |     |    |

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
115 120 125 571

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
145 150 155 160

Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Ala  
180 185 190

Thr Asp Met Arg Pro Ser Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 405

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 405

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
1 5 10

<210> 406  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 406

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 407  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 407

Ala Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 408  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 408

Val Tyr Ala Met Asn  
1 5

<210> 409  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 409

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
1 5 10 15

Val Lys Lys

<210> 410

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 410

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp Ala Tyr  
1 5 10

<210> 411

<211> 125

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 411

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp

50

55

574

60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 412

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 412

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Tyr Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn  
85 90 95 575

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 413  
<211> 249  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 413

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Val Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Lys Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
115 120 125

576

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Tyr Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 414  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 414

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
1 5 10

<210> 415  
<211> 7



<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 415

Gly Thr Lys Phe Leu Ala Pro  
1 5

<210> 416  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 416

Val Leu Trp Tyr Ser Asn Arg Trp Val  
1 5

<210> 417  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 417

Ser Tyr Ala Met Asn  
1 5

<210> 418  
<211> 19  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 418

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Gly

<210> 419  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 419

His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp Ala Tyr  
 1 5 10

<210> 420  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 420

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80 579

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 421  
<211> 109  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 421

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn  
85 90 95

580

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105

<210> 422  
<211> 249  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 422

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
130 135 140

581

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

<210> 423  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 423

Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
1 5 10

<210> 424  
<211> 7  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 424

Gly Thr Lys Phe Leu Ala Pro  
 1 5

&lt;210&gt; 425

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 425

Val Leu Trp Tyr Ser Asn Arg Trp Val  
 1 5

&lt;210&gt; 426

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 426

Lys Tyr Ala Met Asn  
 1 5

&lt;210&gt; 427

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 427

Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser  
 1 5 10 15

Val Lys Asp

<210> 428  
 <211> 14  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 428

His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr  
 1 5 10

<210> 429  
 <211> 125  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 429

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

584

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 430

<211> 109

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 430

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn  
85 90 95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
100 105



<210> 431  
 <211> 249  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 431

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 50 55 60

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65 70 75 80

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 115 120 125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu

|     |     |     |     |
|-----|-----|-----|-----|
| 145 | 150 | 586 | 160 |
|     |     | 155 |     |

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
210 215 220

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
245

|       |                     |
|-------|---------------------|
| <210> | 432                 |
| <211> | 125                 |
| <212> | PRT                 |
| <213> | Artificial Sequence |

<220>  
<223> Synthetic peptide

<400> 432

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
50 55 587 60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
65 70 75 80

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
85 90 95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
100 105 110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
115 120 125

<210> 433  
<211> 109  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 433

Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly  
1 5 10 15

Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly  
20 25 30

Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly  
35 40 45

Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe  
50 55 60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val  
65 70 75 80

Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn  
                   85                                  90                                  95

Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
                   100                                  105

<210> 434  
 <211> 249  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 434

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1                  5                                  10                                  15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Ser Tyr  
                   20                                  25                                  30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                   35                                  40                                  45

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
                   50                                  55                                  60

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 65                  70                                  75                                  80

Ala Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr Ala Val Tyr  
                   85                                  90                                  95

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Trp  
                   100                                  105                                  110

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
                   115                                  120                                  125

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 130 135 140

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 145 150 155 160

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 165 170 175

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 180 185 190

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 195 200 205

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 210 215 220

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 225 230 235 240

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 245

<210> 435  
 <211> 118  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 435

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr

590

20

25

30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser  
115

<210> 436

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 436

Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly  
1 5 10 15

Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln Arg Val Asn Asn Asn  
20 25 30

Tyr Leu Ala Trp Tyr Gln Gln Arg 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 55 591 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 Gln Tyr Asp Arg Ser Pro  
85 90 95

Leu Thr Phe Gly Cys Gly Thr Lys Leu Glu Ile Lys  
100 105

<210> 437  
<211> 241  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 437

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys

<210> 438

<211> 496

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide



&lt;400&gt; 438

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
 35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
 385 390 395 400 595

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

<210> 439  
 <211> 17  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 439

Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe Gln  
 1 5 10 15

Gly

<210> 440  
 <211> 17  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 440

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ile | Asn | Pro | Ser | Asp | Ala | Ser | Thr | Ser | Tyr | Ala | Gln | Lys | Phe | Gln |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Gly

<210> 441

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 441

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Glu | Gly | Asn | Thr | Tyr | Leu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 442

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 442

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Asp | Ala | Asn | Thr | Tyr | Leu | Ser |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

<210> 443

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 443

Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Gln Thr Tyr Leu Ser  
1 5 10 15

<210> 444

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 444

Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Ala Tyr Leu Ser  
1 5 10 15

<210> 445

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 445

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr

|       |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65    |                     |     |     |     | 70  |     |     |     |     | 598 |     |     |     |     | 80  |
| Met   | Asp                 | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|       |                     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Ala   | Arg                 | Gly | Gly | Asn | Ser | Ala | Phe | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
|       |                     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Trp   | Gly                 | Gln | Gly | Thr | Thr | Val | Thr | Val | Ser | Ser |     |     |     |     |     |
|       |                     | 115 |     |     |     |     | 120 |     |     |     |     |     |     |     |     |
| <210> | 446                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <211> | 123                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <212> | PRT                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <213> | Artificial Sequence |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <220> |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <223> | Synthetic peptide   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <400> | 446                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln   | Val                 | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala |
| 1     |                     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser   | Val                 | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Asn | Tyr |
|       |                     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Tyr   | Met                 | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Leu | Gly | Leu | Glu | Trp | Met |
|       |                     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly   | Ile                 | Ile | Asn | Pro | Ser | Glu | Gly | Ser | Thr | Ser | Tyr | Ala | Gln | Lys | Phe |
|       | 50                  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gln   | Gly                 | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Asn | Thr | Val | Tyr |
| 65    |                     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Met   | Asp                 | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|       |                     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

599

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 447

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 447

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

600

<210> 448  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 448

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 449  
<211> 122  
<212> PRT  
<213> Artificial Sequence

<220>



601

<223> Synthetic peptide

<400> 449

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser  
115 120

<210> 450

<211> 123

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 450

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

602

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 451  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 451

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

603

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 452  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 452

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr

|       |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65    |                     |     |     |     | 70  |     |     |     |     | 604 |     |     |     |     | 80  |
| Met   | Asp                 | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|       |                     |     | 85  |     |     |     |     |     | 90  |     |     |     | 95  |     |     |
| Ala   | Arg                 | Gly | Gly | Asn | Ser | Ala | Phe | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
|       |                     | 100 |     |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Trp   | Gly                 | Gln | Gly | Thr | Thr | Val | Thr | Val | Ser | Ser |     |     |     |     |     |
|       |                     | 115 |     |     |     |     | 120 |     |     |     |     |     |     |     |     |
| <210> | 453                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <211> | 123                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <212> | PRT                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <213> | Artificial Sequence |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <220> |                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <223> | Synthetic peptide   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <400> | 453                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Gln   | Val                 | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala |
| 1     |                     |     | 5   |     |     |     |     |     | 10  |     |     |     |     | 15  |     |
| Ser   | Val                 | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Asn | Tyr |
|       |                     | 20  |     |     |     |     |     | 25  |     |     |     |     | 30  |     |     |
| Tyr   | Met                 | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Leu | Cys | Leu | Glu | Trp | Met |
|       |                     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |
| Gly   | Ile                 | Ile | Asn | Pro | Ser | Asp | Ala | Ser | Thr | Ser | Tyr | Ala | Gln | Lys | Phe |
|       | 50                  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |
| Gln   | Gly                 | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Asn | Thr | Val | Tyr |
| 65    |                     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |
| Met   | Asp                 | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|       |                     |     | 85  |     |     |     |     |     | 90  |     |     |     |     | 95  |     |

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110 605

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 454  
<211> 123  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 454

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
115 120

<210> 455  
 <211> 123  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 455

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
 115 120

<210> 456  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>

607

<223> Synthetic peptide

<400> 456

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Glu Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 457

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 457

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

608

Asp Ala Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 458

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 458

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Asp Gly Gln Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80



Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
                   85                  90                  95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
                   100                  105                  110

<210> 459

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 459

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
   1                  5                  10                  15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
                   20                  25                  30

Asp Gly Asn Ala Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
                   35                  40                  45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
                   50                  55                  60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
   65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
                   85                  90                  95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
                   100                  105                  110

<210> 460

610

<211> 112  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 460

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Asp Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 461  
<211> 112  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 461

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
                   20                  25                  30

Glu Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
           35                  40                  45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
       50                  55                  60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
   65                  70                  75                  80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
           85                  90                  95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
          100                 105                 110

<210> 462

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 462

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
   1                  5                  10                  15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
           20                  25                  30

Asp Ala Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
       35                  40                  45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro

50

55

612

60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
 85 90 95

Thr His Trp Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105 110

&lt;210&gt; 463

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 463

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

Asp Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
 85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 100 105 613 110

<210> 464  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 464

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

Glu Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
 85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 100 105 110

<210> 465  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

&lt;400&gt; 465

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

Asp Ala Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
 85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 100 105 110

&lt;210&gt; 466

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 466

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
 1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
 20 25 30

Asp Gly Gln Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 615 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 467  
<211> 112  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 467

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Asp Gly Asn Ala Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
                     85                    90                    95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
                     100                    105                    110

<210> 468  
 <211> 112  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 468

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
 1                    5                    10                    15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
                     20                    25                    30

Asp Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
                     35                    40                    45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
                     50                    55                    60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65                    70                    75                    80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
                     85                    90                    95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
                     100                    105                    110

<210> 469  
 <211> 112



617

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 469

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Glu Gly Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 470

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 470

Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Thr Leu Gly  
1 5 10 15

618

Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg  
20 25 30

Asp Ala Asn Thr Tyr Leu Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Trp Gln Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Gly  
85 90 95

Thr His Trp Pro Pro Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
100 105 110

<210> 471  
<211> 250  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 471

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 245 250

<210> 472  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 472

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

621

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 473

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 473

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe

50 55 60 622  
 Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80  
 Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110  
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125  
 Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140  
 Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160  
 Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Gln Thr Tyr Leu  
 165 170 175  
 Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190  
 Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205  
 Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220  
 Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240  
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 245 250

<210> 474  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 474

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser

|     |     |     |     |
|-----|-----|-----|-----|
| 145 | 150 | 624 | 160 |
|     |     | 155 |     |

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Ala Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

|       |                     |
|-------|---------------------|
| <210> | 475                 |
| <211> | 250                 |
| <212> | PRT                 |
| <213> | Artificial Sequence |

<220>  
<223> Synthetic peptide

<400> 475

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45



Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60 625

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys

245

626  
250

<210> 476  
<211> 250  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 476

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 245 250

<210> 477  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 477

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

628

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

629

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 478

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 478

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

630

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 479

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 479

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
                   245                  250

<210> 480  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 480

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1                  5                  10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
                   20                  25                  30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
                   35                  40                  45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
                   50                  55                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65                  70                  75                  80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
                   85                  90                  95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                   100                  105                  110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
                   115                  120                  125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
                   130                  135                  140



Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 481

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 481

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met

634

35

40

45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
                           245                          250

<210> 482

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 482

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
   1                          5                          10                          15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
                           20                          25                          30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
                           35                          40                          45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
   50                          55                          60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
   65                          70                          75                          80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
                           85                          90                          95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                           100                          105                          110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
                           115                          120                          125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln

130 135 636 140  
 Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160  
 Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175  
 Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190  
 Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205  
 Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220  
 Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240  
 Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 245 250

<210> 483  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 483

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45 637

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr

|     |     |     |     |
|-----|-----|-----|-----|
| 225 | 230 | 638 | 240 |
|     |     | 235 |     |

|       |                     |
|-------|---------------------|
| <210> | 484                 |
| <211> | 250                 |
| <212> | PRT                 |
| <213> | Artificial Sequence |

<400> 484

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 639 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 485

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 485

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

640

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Gln Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Gly | Cys | Gly | Thr | Lys | Val | Glu | Ile | Lys |
|     |     |     |     | 245 |     |     |     |     | 250 |

<210> 486  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 486

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Val | Gln | Ser | Gly | Ala | Glu | Val | Lys | Lys | Pro | Gly | Ala |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Lys | Val | Ser | Cys | Lys | Ala | Ser | Gly | Tyr | Thr | Phe | Thr | Asn | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     |     | 30  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Met | His | Trp | Val | Arg | Gln | Ala | Pro | Gly | Leu | Cys | Leu | Glu | Trp | Met |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Ile | Asn | Pro | Ser | Asp | Gly | Ser | Thr | Ser | Tyr | Ala | Gln | Lys | Phe |
|     | 50  |     |     |     |     | 55  |     |     |     |     | 60  |     |     |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gly | Arg | Val | Thr | Met | Thr | Arg | Asp | Thr | Ser | Thr | Asn | Thr | Val | Tyr |
| 65  |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     | 80  |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Leu | Ser | Ser | Leu | Arg | Ser | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Gly | Gly | Asn | Ser | Ala | Phe | Tyr | Ser | Tyr | Tyr | Asp | Met | Asp | Val |
|     |     |     | 100 |     |     |     |     |     | 105 |     |     |     | 110 |     |     |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gly | Gln | Gly | Thr | Thr | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |

642

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Ala Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 487

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 487

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

644

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 488  
<211> 250  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 488

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

645

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 489  
<211> 250  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 489

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr

646

20

25

30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 245 250

<210> 490  
 <211> 250  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 490

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser

648

115

120

125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 491

<211> 250

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 491

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15



649

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu

210

215

650

220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
 245 250

&lt;210&gt; 492

&lt;211&gt; 250

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 492

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125 651

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 493  
<211> 250  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 493

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220 653

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
245 250

<210> 494  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 494

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320 655

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu

656

500

505

<210> 495  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 495

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140



657  
Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr

658

340

345

350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 496

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

&lt;223&gt; Synthetic peptide

&lt;400&gt; 496

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Gln Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr

180 185 660 190  
 Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205  
 Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220  
 Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240  
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255  
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270  
 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285  
 Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300  
 Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320  
 Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335  
 Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350  
 Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365  
 Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 497

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 497

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr

20

25

30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Ala Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

664

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 498

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 498

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60



Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
                   260                  265                  270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
                   275                  280                  285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
                   290                  295                  300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
   305                  310                  315                  320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
                   325                  330                  335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
                   340                  345                  350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
                   355                  360                  365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
                   370                  375                  380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
   385                  390                  395                  400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
                   405                  410                  415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
                   420                  425                  430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
                   435                  440                  445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 667 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 499

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 499

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                   100                                  105                                  110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
           115                                  120                                  125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
       130                                  135                                  140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
   145                                  150                                  155                                  160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
                   165                                  170                                  175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
                   180                                  185                                  190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
           195                                  200                                  205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
       210                                  215                                  220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
   225                                  230                                  235                                  240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
                   245                                  250                                  255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
           260                                  265                                  270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
           275                                  280                                  285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300 669

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe

485 490 670 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 500  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 500

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 671 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr





&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 501

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 674 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 165 |     |     |     |     |     |     |     | 170 |     |     |     | 175 |     |     |     |
| Ser | Trp | Phe | Gln | Gln | Arg | Pro | Gly | Gln | Ser | Pro | Arg | Arg | Leu | Ile | Tyr |
|     |     |     | 180 |     |     |     | 185 |     |     |     |     |     | 190 |     |     |
| Lys | Val | Ser | Asn | Trp | Gln | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Gly |
|     |     | 195 |     |     |     | 200 |     |     |     |     |     | 205 |     |     |     |
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |
|     |     | 210 |     |     |     | 215 |     |     |     |     |     | 220 |     |     |     |
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |
|     |     | 225 |     |     |     | 230 |     |     |     |     |     | 235 |     |     |     |
| Phe | Gly | Gln | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser |
|     |     |     | 245 |     |     |     |     |     | 250 |     |     | 255 |     |     |     |
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |
|     |     |     | 260 |     |     |     |     |     | 265 |     |     | 270 |     |     |     |
| Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |
|     |     | 290 |     |     |     |     | 295 |     |     |     |     |     | 300 |     |     |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |
|     |     | 305 |     |     | 310 |     |     |     |     |     | 315 |     |     | 320 |     |
| Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |
|     |     |     | 325 |     |     |     |     |     | 330 |     |     | 335 |     |     |     |
| Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |
|     |     |     | 340 |     |     |     |     |     | 345 |     |     | 350 |     |     |     |
| Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     |     | 365 |     |     |

675

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 502  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 502

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

676

1

5

10

15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

678

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 503

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 503

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

680

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430



Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 681 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 504  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 504

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285 683

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp

|     |     |            |     |
|-----|-----|------------|-----|
| 465 | 470 | 684<br>475 | 480 |
|-----|-----|------------|-----|

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

|       |                     |
|-------|---------------------|
| <210> | 505                 |
| <211> | 505                 |
| <212> | PRT                 |
| <213> | Artificial Sequence |

<220>  
<223> Synthetic peptide

<400> 505

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 685 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp

|                                                                 |  |     |  |            |  |     |
|-----------------------------------------------------------------|--|-----|--|------------|--|-----|
| 305                                                             |  | 310 |  | 686<br>315 |  | 320 |
| Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr |  | 325 |  | 330        |  | 335 |
| Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr |  | 340 |  | 345        |  | 350 |
| Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp |  | 355 |  | 360        |  | 365 |
| Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly |  | 370 |  | 375        |  | 380 |
| Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val |  | 385 |  | 390        |  | 395 |
| Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu |  | 405 |  | 410        |  | 415 |
| Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn |  | 420 |  | 425        |  | 430 |
| Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly |  | 435 |  | 440        |  | 445 |
| Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu |  | 450 |  | 455        |  | 460 |
| Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp |  | 465 |  | 470        |  | 475 |
| Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe |  | 485 |  | 490        |  | 495 |
| Gly Gly Gly Thr Lys Leu Thr Val Leu                             |  | 500 |  | 505        |  |     |

<210> 506  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 506

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|------------|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|
| 145 |     |     |     |     |     |     |     |     |     | 150 |     |     |     |     |     |  |  |  |  | 688<br>155 |  |  |  |  |  |  |  |  |  | 160 |  |  |  |  |  |  |  |  |  |
| Cys | Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Glu | Gly | Asn | Thr | Tyr | Leu |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ser | Trp | Phe | Gln | Gln | Arg | Pro | Gly | Gln | Ser | Pro | Arg | Arg | Leu | Ile | Tyr |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Lys | Val | Ser | Asn | Trp | Gln | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Gly |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 195 |     |     |     |     | 200 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 210 |     |     |     |     | 215 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 225 |     |     |     |     | 230 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Phe | Gly | Cys | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 260 |     |     |     |     | 265 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 275 |     |     |     |     | 280 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 290 |     |     |     |     | 295 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 305 |     |     |     |     | 310 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
| Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 340 |     |     |     |     | 345 |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |
|     |     |     |     | 350 |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |            |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |



Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
 500 505

<210> 507

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

&lt;400&gt; 507

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Ala Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

692

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 508  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 508

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Gln Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

695  
Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 509  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 509

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

696

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Ala Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255



Glu Val Gln Leu Val Glu Ser Gly Gly Gly <sup>697</sup> Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu

|            |                     |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
|------------|---------------------|-----------|------------|------------|------------|-----------|-----------|------------|------------|------------|-----------|-----------|-----------|------------|------------|
| 450        |                     |           |            |            |            | 455       |           |            |            |            | 698       |           |           |            | 460        |
| Leu<br>465 | Gly                 | Gly       | Lys        | Ala        | Ala<br>470 | Leu       | Thr       | Leu        | Ser        | Gly<br>475 | Val       | Gln       | Pro       | Glu        | Asp<br>480 |
| Glu        | Ala                 | Glu       | Tyr        | Tyr<br>485 | Cys        | Val       | Leu       | Trp        | Tyr<br>490 | Ser        | Asn       | Arg       | Trp       | Val<br>495 | Phe        |
| Gly        | Gly                 | Gly       | Thr<br>500 | Lys        | Leu        | Thr       | Val       | Leu<br>505 |            |            |           |           |           |            |            |
| <210>      | 510                 |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <211>      | 505                 |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <212>      | PRT                 |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <213>      | Artificial Sequence |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <220>      |                     |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <223>      | Synthetic peptide   |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| <400>      | 510                 |           |            |            |            |           |           |            |            |            |           |           |           |            |            |
| Gln<br>1   | Val                 | Gln       | Leu        | Val<br>5   | Gln        | Ser       | Gly       | Ala        | Glu<br>10  | Val        | Lys       | Lys       | Pro       | Gly<br>15  | Ala        |
| Ser        | Val                 | Lys       | Val<br>20  | Ser        | Cys        | Lys       | Ala       | Ser<br>25  | Gly        | Tyr        | Thr       | Phe       | Thr<br>30 | Asn        | Tyr        |
| Tyr        | Met                 | His<br>35 | Trp        | Val        | Arg        | Gln       | Ala<br>40 | Pro        | Gly        | Leu        | Cys       | Leu<br>45 | Glu       | Trp        | Met        |
| Gly<br>50  | Ile                 | Ile       | Asn        | Pro        | Ser        | Asp<br>55 | Gly       | Ser        | Thr        | Ser        | Tyr<br>60 | Ala       | Gln       | Lys        | Phe        |
| Gln<br>65  | Gly                 | Arg       | Val        | Thr        | Met        | Thr<br>70 | Arg       | Asp        | Thr        | Ser<br>75  | Thr       | Asn       | Thr       | Val        | Tyr<br>80  |
| Met        | Asp                 | Leu       | Ser        | Ser<br>85  | Leu        | Arg       | Ser       | Glu        | Asp<br>90  | Thr        | Ala       | Val       | Tyr       | Tyr<br>95  | Cys        |

699

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |  |  |  |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|
| 290     |         |         |         |         | 295     |         |         |         |         | 700     |         |         |         |         | 300     |  |  |  |  |
| Ala 305 | Arg     | Ile     | Arg     | Ser     | Lys 310 | Tyr     | Asn     | Asn     | Tyr     | Ala 315 | Thr     | Tyr     | Tyr     | Ala     | Asp 320 |  |  |  |  |
| Ser     | Val     | Lys     | Asp     | Arg 325 | Phe     | Thr     | Ile     | Ser     | Arg 330 | Asp     | Asp     | Ser     | Lys     | Asn 335 | Thr     |  |  |  |  |
| Ala     | Tyr     | Leu     | Gln 340 | Met     | Asn     | Asn     | Leu     | Lys 345 | Thr     | Glu     | Asp     | Thr     | Ala 350 | Val     | Tyr     |  |  |  |  |
| Tyr     | Cys     | Val 355 | Arg     | His     | Gly     | Asn     | Phe 360 | Gly     | Asn     | Ser     | Tyr     | Ile 365 | Ser     | Tyr     | Trp     |  |  |  |  |
| Ala     | Tyr     | Trp     | Gly     | Gln     | Gly     | Thr 375 | Leu     | Val     | Thr     | Val     | Ser 380 | Ser     | Gly     | Gly     | Gly     |  |  |  |  |
| Gly 385 | Ser     | Gly     | Gly     | Gly     | Gly 390 | Ser     | Gly     | Gly     | Gly     | Gly 395 | Ser     | Gln     | Thr     | Val     | Val 400 |  |  |  |  |
| Thr     | Gln     | Glu     | Pro     | Ser 405 | Leu     | Thr     | Val     | Ser     | Pro 410 | Gly     | Gly     | Thr     | Val     | Thr 415 | Leu     |  |  |  |  |
| Thr     | Cys     | Gly     | Ser 420 | Ser     | Thr     | Gly     | Ala 425 | Val     | Thr     | Ser     | Gly     | Asn 430 | Tyr     | Pro     | Asn     |  |  |  |  |
| Trp     | Val     | Gln 435 | Gln     | Lys     | Pro     | Gly     | Gln 440 | Ala     | Pro     | Arg     | Gly     | Leu 445 | Ile     | Gly     | Gly     |  |  |  |  |
| Thr     | Lys 450 | Phe     | Leu     | Ala     | Pro     | Gly 455 | Thr     | Pro     | Ala     | Arg     | Phe 460 | Ser     | Gly     | Ser     | Leu     |  |  |  |  |
| Leu 465 | Gly     | Gly     | Lys     | Ala     | Ala 470 | Leu     | Thr     | Leu     | Ser     | Gly 475 | Val     | Gln     | Pro     | Glu     | Asp 480 |  |  |  |  |
| Glu     | Ala     | Glu     | Tyr     | Tyr 485 | Cys     | Val     | Leu     | Trp     | Tyr 490 | Ser     | Asn     | Arg     | Trp     | Val 495 | Phe     |  |  |  |  |

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 511  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 511

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln

|            |     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 130        |     |            |            |            | 135        |            |            |            |            | 702        |            |            |            |            | 140        |  |  |  |  |
| Thr<br>145 | Pro | Leu        | Ser        | Leu        | Pro<br>150 | Val        | Thr        | Leu        | Gly        | Gln<br>155 | Pro        | Ala        | Ser        | Ile        | Ser<br>160 |  |  |  |  |
| Cys        | Arg | Ser        | Ser        | Gln<br>165 | Ser        | Leu        | Val        | Tyr        | Arg<br>170 | Asp        | Gly        | Asn        | Thr        | Tyr<br>175 | Leu        |  |  |  |  |
| Ser        | Trp | Phe        | Gln<br>180 | Gln        | Arg        | Pro        | Gly        | Gln<br>185 | Ser        | Pro        | Arg        | Arg        | Leu<br>190 | Ile        | Tyr        |  |  |  |  |
| Lys        | Val | Ser<br>195 | Asn        | Trp        | Gln        | Ser        | Gly<br>200 | Val        | Pro        | Asp        | Arg        | Phe<br>205 | Ser        | Gly        | Gly        |  |  |  |  |
| Gly<br>210 | Ser | Gly        | Thr        | Asp        | Phe        | Thr<br>215 | Leu        | Lys        | Ile        | Ser        | Arg<br>220 | Val        | Glu        | Ala        | Glu        |  |  |  |  |
| Asp<br>225 | Val | Gly        | Val        | Tyr        | Tyr<br>230 | Cys        | Met        | Gln        | Gly        | Thr<br>235 | His        | Trp        | Pro        | Pro        | Thr<br>240 |  |  |  |  |
| Phe        | Gly | Cys        | Gly        | Thr<br>245 | Lys        | Val        | Glu        | Ile        | Lys<br>250 | Ser        | Gly        | Gly        | Gly        | Gly<br>255 | Ser        |  |  |  |  |
| Glu        | Val | Gln        | Leu<br>260 | Val        | Glu        | Ser        | Gly        | Gly<br>265 | Gly        | Leu        | Val        | Gln        | Pro<br>270 | Gly        | Gly        |  |  |  |  |
| Ser        | Leu | Lys<br>275 | Leu        | Ser        | Cys        | Ala        | Ala<br>280 | Ser        | Gly        | Phe        | Thr        | Phe<br>285 | Asn        | Lys        | Tyr        |  |  |  |  |
| Ala<br>290 | Met | Asn        | Trp        | Val        | Arg        | Gln<br>295 | Ala        | Pro        | Gly        | Lys        | Gly<br>300 | Leu        | Glu        | Trp        | Val        |  |  |  |  |
| Ala<br>305 | Arg | Ile        | Arg        | Ser        | Lys<br>310 | Tyr        | Asn        | Asn        | Tyr        | Ala<br>315 | Thr        | Tyr        | Tyr        | Ala        | Asp<br>320 |  |  |  |  |
| Ser        | Val | Lys        | Asp        | Arg<br>325 | Phe        | Thr        | Ile        | Ser        | Arg<br>330 | Asp        | Asp        | Ser        | Lys        | Asn<br>335 | Thr        |  |  |  |  |

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
                   340                  345                  350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
                   355                  360                  365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
                   370                  375                  380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
                   385                  390                  395                  400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
                   405                  410                  415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
                   420                  425                  430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
                   435                  440                  445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
                   450                  455                  460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
                   465                  470                  475                  480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
                   485                  490                  495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
                   500                  505

<210> 512

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 512

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175



Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

706

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 513

<211> 505

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 513

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

709  
Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 514  
<211> 505  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 514

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
35 40 45

710

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255 711

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly

435                                      440                                      712                                      445  
 Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450                                      455                                      460  
 Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465                                      470                                      475                                      480  
 Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485                                      490                                      495  
 Gly Gly Gly Thr Lys Leu Thr Val Leu  
 500                                      505

<210> 515  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 515

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1                                      5                                      10                                      15  
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20                                      25                                      30  
 Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
 35                                      40                                      45  
 Gly Ile Ile Asn Pro Ser Glu Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50                                      55                                      60  
 Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65                                      70                                      75                                      80



Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95 713

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
 145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Glu Gly Asn Thr Tyr Leu  
 165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
 180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Ser  
 195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     |     |     |     |     |     | 714 |     |     |     |     |     |
|     | 275 |     |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser | Arg | Asp | Asp | Ser | Lys | Asn | Thr |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys | Thr | Glu | Asp | Thr | Ala | Val | Tyr |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly | Asn | Ser | Tyr | Ile | Ser | Tyr | Trp |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ala | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gln | Thr | Val | Val |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Thr | Gln | Glu | Pro | Ser | Leu | Thr | Val | Ser | Pro | Gly | Gly | Thr | Val | Thr | Leu |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Thr | Cys | Gly | Ser | Ser | Thr | Gly | Ala | Val | Thr | Ser | Gly | Asn | Tyr | Pro | Asn |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala | Pro | Arg | Gly | Leu | Ile | Gly | Gly |
|     | 435 |     |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |
| Thr | Lys | Phe | Leu | Ala | Pro | Gly | Thr | Pro | Ala | Arg | Phe | Ser | Gly | Ser | Leu |
|     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |     |     |     |
| Leu | Gly | Gly | Lys | Ala | Ala | Leu | Thr | Leu | Ser | Gly | Val | Gln | Pro | Glu | Asp |
| 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |     |     | 480 |

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
                                   485                                  490                                  495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
                                   500                                  505

<210> 516  
 <211> 505  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 516

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1                                  5                                  10                                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
                                   20                                  25                                  30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Cys Leu Glu Trp Met  
                                   35                                  40                                  45

Gly Ile Ile Asn Pro Ser Asp Ala Ser Thr Ser Tyr Ala Gln Lys Phe  
                                   50                                  55                                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65                                  70                                  75                                  80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
                                   85                                  90                                  95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                                   100                                  105                                  110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| 115 |     |     |     |     | 120 |     |     |     |     | 716 |     |     |     |     | 125 |  |  |  |  |
| Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Asp | Val | Val | Met | Thr | Gln |  |  |  |  |
| 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |  |  |  |  |
| Thr | Pro | Leu | Ser | Leu | Pro | Val | Thr | Leu | Gly | Gln | Pro | Ala | Ser | Ile | Ser |  |  |  |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |  |  |  |
| Cys | Arg | Ser | Ser | Gln | Ser | Leu | Val | Tyr | Arg | Asp | Ala | Asn | Thr | Tyr | Leu |  |  |  |  |
| 165 |     |     |     |     | 170 |     |     |     |     |     |     |     |     |     |     |  |  |  |  |
| Ser | Trp | Phe | Gln | Gln | Arg | Pro | Gly | Gln | Ser | Pro | Arg | Arg | Leu | Ile | Tyr |  |  |  |  |
| 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     |     |  |  |  |  |
| Lys | Val | Ser | Asn | Trp | Gln | Ser | Gly | Val | Pro | Asp | Arg | Phe | Ser | Gly | Ser |  |  |  |  |
| 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     |  |  |  |  |
| Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Lys | Ile | Ser | Arg | Val | Glu | Ala | Glu |  |  |  |  |
| 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |  |  |  |  |
| Asp | Val | Gly | Val | Tyr | Tyr | Cys | Met | Gln | Gly | Thr | His | Trp | Pro | Pro | Thr |  |  |  |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |  |  |  |
| Phe | Gly | Cys | Gly | Thr | Lys | Val | Glu | Ile | Lys | Ser | Gly | Gly | Gly | Gly | Ser |  |  |  |  |
| 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |     |     |     |  |  |  |  |
| Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly | Gly | Leu | Val | Gln | Pro | Gly | Gly |  |  |  |  |
| 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |     |     |  |  |  |  |
| Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser | Gly | Phe | Thr | Phe | Asn | Lys | Tyr |  |  |  |  |
| 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |     |  |  |  |  |
| Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro | Gly | Lys | Gly | Leu | Glu | Trp | Val |  |  |  |  |
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |  |  |  |  |
| Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn | Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp |  |  |  |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |  |  |  |

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu  
500 505

<210> 517  
 <211> 984  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 517

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
                                   165                                  170                                  175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
                                   180                                  185                                  190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
                                   195                                  200                                  205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
                                   210                                  215                                  220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
                                   225                                  230                                  235                                  240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
                                   245                                  250                                  255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
                                   260                                  265                                  270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
                                   275                                  280                                  285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
                                   290                                  295                                  300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
                                   305                                  310                                  315                                  320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
                                   325                                  330                                  335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
                                   340                                  345                                  350

720

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
530 535 540



Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
 545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
 565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
 580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
 625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
 645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
 660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
 675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
 690 695 700

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
 705 710 715 720

Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 725 730 735

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 722 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 740 |     |     |     | 745 |     |     |     | 750 |     |     |     |     |     |     |     |
| Gly | Gly | Gly | Gly | Ser | Asp | Lys | Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala |
|     |     | 755 |     |     |     | 760 |     |     |     | 765 |     |     |     |     |     |
| Pro | Glu | Leu | Leu | Gly | Gly | Pro | Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro |
|     |     | 770 |     |     |     | 775 |     |     |     | 780 |     |     |     |     |     |
| Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr | Pro | Glu | Val | Thr | Cys | Val | Val |
|     |     |     |     | 790 |     |     |     |     |     | 795 |     |     |     | 800 |     |
| Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu | Val | Lys | Phe | Asn | Trp | Tyr | Val |
|     |     |     |     | 805 |     |     |     | 810 |     |     |     |     |     | 815 |     |
| Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys | Thr | Lys | Pro | Cys | Glu | Glu | Gln |
|     |     | 820 |     |     |     |     |     | 825 |     |     |     | 830 |     |     |     |
| Tyr | Gly | Ser | Thr | Tyr | Arg | Cys | Val | Ser | Val | Leu | Thr | Val | Leu | His | Gln |
|     |     | 835 |     |     |     | 840 |     |     |     |     |     | 845 |     |     |     |
| Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala |
|     |     | 850 |     |     |     | 855 |     |     |     | 860 |     |     |     |     |     |
| Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro |
|     |     | 865 |     | 870 |     |     |     |     |     | 875 |     |     |     | 880 |     |
| Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr |
|     |     |     |     | 885 |     |     |     | 890 |     |     |     |     |     | 895 |     |
| Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser |
|     |     | 900 |     |     |     | 905 |     |     |     |     |     | 910 |     |     |     |
| Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr |
|     |     | 915 |     |     |     | 920 |     |     |     |     |     | 925 |     |     |     |
| Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr |
|     |     | 930 |     |     |     | 935 |     |     |     | 940 |     |     |     |     |     |

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
 945 950 955 960

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
 965 970 975

Ser Leu Ser Leu Ser Pro Gly Lys  
 980

<210> 518  
 <211> 982  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 518

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr

724

100

105

110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
 290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
 305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
 325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
 340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
 355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
 385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
 405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
 420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
530 535 540

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
690 695 700 727

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
705 710 715 720

Leu Ser Leu Ser Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
725 730 735

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
740 745 750

Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu  
755 760 765

Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp  
770 775 780

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp  
785 790 795 800

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly  
805 810 815

Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly  
820 825 830

Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp  
835 840 845

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro  
850 855 860

Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu  
865 870 875 880

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|     |     |     |     |     |     |     |     |     | 728 |     |     |     |     |     |     |
|     |     | 885 |     |     |     |     |     | 890 |     |     |     |     | 895 |     |     |
| Gln | Val | Ser | Leu | Thr | Cys | Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile |
|     |     | 900 |     |     |     |     |     | 905 |     |     |     |     | 910 |     |     |
| Ala | Val | Glu | Trp | Glu | Ser | Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr |
|     |     | 915 |     |     |     |     | 920 |     |     |     |     | 925 |     |     |     |
| Thr | Pro | Pro | Val | Leu | Asp | Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys |
|     | 930 |     |     |     |     | 935 |     |     |     |     | 940 |     |     |     |     |
| Leu | Thr | Val | Asp | Lys | Ser | Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys |
| 945 |     |     |     |     | 950 |     |     |     |     | 955 |     |     |     |     | 960 |
| Ser | Val | Met | His | Glu | Ala | Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu |
|     |     |     | 965 |     |     |     |     | 970 |     |     |     |     |     | 975 |     |
| Ser | Leu | Ser | Pro | Gly | Lys |     |     |     |     |     |     |     |     |     |     |
|     |     |     | 980 |     |     |     |     |     |     |     |     |     |     |     |     |

<210> 519  
 <211> 984  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 519

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Val | Gln | Leu | Gln | Glu | Ser | Gly | Pro | Gly | Leu | Val | Lys | Pro | Ser | Glu |
| 1   |     |     | 5   |     |     |     | 10  |     |     |     |     |     | 15  |     |     |
| Thr | Leu | Ser | Leu | Thr | Cys | Thr | Val | Ser | Gly | Gly | Ser | Ile | Ser | Ser | Tyr |
|     |     |     | 20  |     |     |     | 25  |     |     |     |     | 30  |     |     |     |
| Tyr | Trp | Ser | Trp | Ile | Arg | Gln | Pro | Pro | Gly | Lys | Cys | Leu | Glu | Trp | Ile |
|     | 35  |     |     |     |     | 40  |     |     |     |     |     | 45  |     |     |     |



729  
Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 730 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 245 |     |     |     |     |     | 250 |     |     |     |     |     | 255 |     |     |     |  |
| Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser |  |
|     |     |     | 260 |     |     |     | 265 |     |     |     |     |     | 270 |     |     |  |
| Gly | Phe | Thr | Phe | Asn | Lys | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro |  |
|     |     |     | 275 |     |     |     | 280 |     |     |     |     |     | 285 |     |     |  |
| Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn |  |
|     |     | 290 |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |  |
| Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys |  |
|     |     |     | 325 |     |     |     |     | 330 |     |     |     |     |     | 335 |     |  |
| Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly |  |
| 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |     |  |
| Gly | Gly | Ser | Gln | Thr | Val | Val | Thr | Gln | Glu | Pro | Ser | Leu | Thr | Val | Ser |  |
| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |  |
| Pro | Gly | Gly | Thr | Val | Thr | Leu | Thr | Cys | Gly | Ser | Ser | Thr | Gly | Ala | Val |  |
|     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |     |  |
| Thr | Ser | Gly | Asn | Tyr | Pro | Asn | Trp | Val | Gln | Gln | Lys | Pro | Gly | Gln | Ala |  |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |  |
| Pro | Arg | Gly | Leu | Ile | Gly | Gly | Thr | Lys | Phe | Leu | Ala | Pro | Gly | Thr | Pro |  |
|     |     | 435 |     |     |     |     | 440 |     |     |     |     | 445 |     |     |     |  |

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
 500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
 515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
 530 535 540

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
 545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
 565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
 580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
 625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
690 695 700

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
705 710 715 720

Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly  
725 730 735

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
740 745 750

Gly Gly Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
755 760 765

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
770 775 780

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
785 790 795 800

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
805 810 815

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln  
820 825 830

Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln  
835 840 845 733

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
850 855 860

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
865 870 875 880

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
885 890 895

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
900 905 910

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
915 920 925

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
930 935 940

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
945 950 955 960

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
965 970 975

Ser Leu Ser Leu Ser Pro Gly Lys  
980

<210> 520  
<211> 982  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 520

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
 35 40 45

Gly Tyr Val Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Ser Ile Ala Val Thr Gly Phe Tyr Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Val Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Arg Val Asn Asn Asn Tyr Leu Ala Trp Tyr Gln Gln Arg Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205 735

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Leu Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser

|                                                                 |  |     |  |     |  |     |
|-----------------------------------------------------------------|--|-----|--|-----|--|-----|
| 385                                                             |  | 390 |  | 736 |  | 400 |
|                                                                 |  |     |  | 395 |  |     |
| Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val |  |     |  |     |  |     |
|                                                                 |  | 405 |  | 410 |  | 415 |
| Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala |  |     |  |     |  |     |
|                                                                 |  | 420 |  | 425 |  | 430 |
| Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro |  |     |  |     |  |     |
|                                                                 |  | 435 |  | 440 |  | 445 |
| Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu |  |     |  |     |  |     |
|                                                                 |  | 450 |  | 455 |  | 460 |
| Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp |  |     |  |     |  |     |
|                                                                 |  | 465 |  | 470 |  | 480 |
| Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu |  |     |  |     |  |     |
|                                                                 |  | 485 |  | 490 |  | 495 |
| Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro |  |     |  |     |  |     |
|                                                                 |  | 500 |  | 505 |  | 510 |
| Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys |  |     |  |     |  |     |
|                                                                 |  | 515 |  | 520 |  | 525 |
| Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val |  |     |  |     |  |     |
|                                                                 |  | 530 |  | 535 |  | 540 |
| Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp |  |     |  |     |  |     |
|                                                                 |  | 545 |  | 550 |  | 560 |
| Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr |  |     |  |     |  |     |
|                                                                 |  | 565 |  | 570 |  | 575 |
| Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp |  |     |  |     |  |     |
|                                                                 |  | 580 |  | 585 |  | 590 |



Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
 625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
 645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
 660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
 675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
 690 695 700

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
 705 710 715 720

Leu Ser Leu Ser Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 725 730 735

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 740 745 750

Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu  
 755 760 765

Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp  
 770 775 780

738

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp  
785 790 795 800

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly  
805 810 815

Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly  
820 825 830

Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp  
835 840 845

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro  
850 855 860

Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu  
865 870 875 880

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn  
885 890 895

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile  
900 905 910

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr  
915 920 925

Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys  
930 935 940

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys  
945 950 955 960

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu  
965 970 975

Ser Leu Ser Pro Gly Lys  
980

<210> 521  
<211> 984  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 521

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

740

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

741  
Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val

530 535 742 540  
 Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
 545 550 555 560  
 Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
 565 570 575  
 Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
 580 585 590  
 Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605  
 Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620  
 Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
 625 630 635 640  
 Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
 645 650 655  
 Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
 660 665 670  
 Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
 675 680 685  
 Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
 690 695 700  
 Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
 705 710 715 720  
 Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 725 730 735

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
                   740                                  745                                  750

Gly Gly Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
                   755                                  760                                  765

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
           770                                  775                                  780

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
   785                                  790                                  795                                  800

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
                   805                                  810                                  815

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln  
                   820                                  825                                  830

Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln  
           835                                  840                                  845

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
   850                                  855                                  860

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
   865                                  870                                  875                                  880

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
                   885                                  890                                  895

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
                   900                                  905                                  910

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
           915                                  920                                  925

744

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
930 935 940

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
945 950 955 960

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
965 970 975

Ser Leu Ser Leu Ser Pro Gly Lys  
980

<210> 522

<211> 982

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 522

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95



Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
 180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
 195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
 210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
 225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
 245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
 260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
 275 280 285

746

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 747 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
530 535 540

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser

|         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| 675     |         |         |         |         | 680     |         |         |         |         | 748     |         | 685     |         |         |         |  |
| Lys 690 | Leu     | Thr     | Val     | Asp     | Lys 695 | Ser     | Arg     | Trp     | Gln     | Gln     | Gly 700 | Asn     | Val     | Phe     | Ser     |  |
| Cys 705 | Ser     | Val     | Met     | His     | Glu 710 | Ala     | Leu     | His     | Asn     | His 715 | Tyr     | Thr     | Gln     | Lys     | Ser 720 |  |
| Leu     | Ser     | Leu     | Ser     | Pro 725 | Gly     | Gly     | Gly     | Gly     | Ser 730 | Gly     | Gly     | Gly     | Gly     | Ser 735 | Gly     |  |
| Gly     | Gly     | Gly     | Ser 740 | Gly     | Gly     | Gly     | Gly     | Ser 745 | Gly     | Gly     | Gly     | Gly     | Ser 750 | Gly     | Gly     |  |
| Gly     | Gly     | Ser 755 | Asp     | Lys     | Thr     | His     | Thr 760 | Cys     | Pro     | Pro     | Cys     | Pro 765 | Ala     | Pro     | Glu     |  |
| Leu     | Leu     | Gly     | Gly     | Pro     | Ser     | Val 775 | Phe     | Leu     | Phe     | Pro     | Pro 780 | Lys     | Pro     | Lys     | Asp     |  |
| Thr 785 | Leu     | Met     | Ile     | Ser     | Arg 790 | Thr     | Pro     | Glu     | Val     | Thr     | Cys 795 | Val     | Val     | Val     | Asp 800 |  |
| Val     | Ser     | His     | Glu     | Asp 805 | Pro     | Glu     | Val     | Lys     | Phe 810 | Asn     | Trp     | Tyr     | Val     | Asp 815 | Gly     |  |
| Val     | Glu     | Val     | His 820 | Asn     | Ala     | Lys     | Thr     | Lys 825 | Pro     | Cys     | Glu     | Glu     | Gln 830 | Tyr     | Gly     |  |
| Ser     | Thr     | Tyr 835 | Arg     | Cys     | Val     | Ser     | Val 840 | Leu     | Thr     | Val     | Leu     | His 845 | Gln     | Asp     | Trp     |  |
| Leu     | Asn 850 | Gly     | Lys     | Glu     | Tyr     | Lys 855 | Cys     | Lys     | Val     | Ser     | Asn 860 | Lys     | Ala     | Leu     | Pro     |  |
| Ala 865 | Pro     | Ile     | Glu     | Lys     | Thr 870 | Ile     | Ser     | Lys     | Ala     | Lys 875 | Gly     | Gln     | Pro     | Arg     | Glu 880 |  |

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn  
                   885                  890                  895

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile  
                   900                  905                  910

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr  
                   915                  920                  925

Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys  
                   930                  935                  940

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys  
   945                  950                  955                  960

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu  
                   965                  970                  975

Ser Leu Ser Pro Gly Lys  
                   980

<210> 523  
 <211> 984  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 523

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
   1                  5                  10                  15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
                   20                  25                  30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 35  |     |     |     |     |     | 40  |     |     |     | 750 |     |     | 45  |     |     |  |
| Gly | Tyr | Ile | Tyr | Tyr | Ser | Gly | Thr | Thr | Asn | Tyr | Asn | Pro | Ser | Leu | Lys |  |
|     |     |     |     |     |     | 50  |     |     |     |     | 55  |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 60  |     |     |     |     |  |
| Ser | Arg | Val | Thr | Ile | Ser | Val | Asp | Thr | Ser | Lys | Asn | Gln | Phe | Ser | Leu |  |
|     |     |     |     |     |     | 70  |     |     |     |     | 75  |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 80  |     |     |     |     |  |
| Lys | Leu | Ser | Ser | Val | Thr | Ala | Ala | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Ala |  |
|     |     |     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 95  |     |     |     |     |  |
| Arg | Ile | Ala | Val | Ala | Gly | Phe | Phe | Phe | Asp | Tyr | Trp | Gly | Gln | Gly | Thr |  |
|     |     |     |     |     |     | 100 |     |     |     |     | 105 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 110 |     |     |     |     |  |
| Leu | Val | Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser |  |
|     |     |     |     |     |     | 115 |     |     |     |     | 120 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 125 |     |     |     |     |  |
| Gly | Gly | Gly | Gly | Ser | Glu | Ile | Val | Leu | Thr | Gln | Ser | Pro | Gly | Thr | Leu |  |
|     |     |     |     |     |     | 130 |     |     |     |     | 135 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 140 |     |     |     |     |  |
| Ser | Leu | Ser | Pro | Gly | Glu | Arg | Ala | Thr | Leu | Ser | Cys | Arg | Ala | Ser | Gln |  |
|     |     |     |     |     |     | 145 |     |     |     |     | 150 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 155 |     |     |     |     |  |
| Ser | Val | Asn | Lys | Asn | Tyr | Leu | Ala | Trp | Tyr | Gln | Gln | Lys | Pro | Gly | Gln |  |
|     |     |     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 175 |     |     |     |     |  |
| Ala | Pro | Arg | Leu | Leu | Ile | Tyr | Gly | Ala | Ser | Ser | Arg | Ala | Thr | Gly | Ile |  |
|     |     |     |     |     |     | 180 |     |     |     |     | 185 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 190 |     |     |     |     |  |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr |  |
|     |     |     |     |     |     | 195 |     |     |     |     | 200 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 205 |     |     |     |     |  |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu | Asp | Phe | Ala | Val | Tyr | Tyr | Cys | Gln | Gln |  |
|     |     |     |     |     |     | 210 |     |     |     |     | 215 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 220 |     |     |     |     |  |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr | Phe | Gly | Cys | Gly | Thr | Lys | Val | Glu | Ile |  |
|     |     |     |     |     |     | 225 |     |     |     |     | 230 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 235 |     |     |     |     |  |
|     |     |     |     |     |     |     |     |     |     |     | 240 |     |     |     |     |  |

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
260 265 270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
275 280 285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
290 295 300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
305 310 315 320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
325 330 335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
340 345 350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
355 360 365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
370 375 380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
 435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
 450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
 465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
 485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
 500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
 515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
 530 535 540

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
 545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
 565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
 580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620



753  
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
690 695 700

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
705 710 715 720

Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly  
725 730 735

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
740 745 750

Gly Gly Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala  
755 760 765

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
770 775 780

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
785 790 795 800

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
805 810 815

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln

820 754 830  
 Tyr Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln  
 835 840 845  
 Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
 850 855 860  
 Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
 865 870 875 880  
 Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
 885 890 895  
 Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
 900 905 910  
 Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
 915 920 925  
 Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
 930 935 940  
 Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
 945 950 955 960  
 Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
 965 970 975  
 Ser Leu Ser Leu Ser Pro Gly Lys  
 980

<210> 524

<211> 982

<212> PRT

<213> Artificial Sequence

<220>

&lt;223&gt; Synthetic peptide

&lt;400&gt; 524

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
 35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
 165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 756 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
| 180 |     |     |     |     |     | 185 |     |     |     |     |     | 190 |     |     |     |  |
| Pro | Asp | Arg | Phe | Ser | Gly | Ser | Gly | Ser | Gly | Thr | Asp | Phe | Thr | Leu | Thr |  |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |  |
| Ile | Ser | Arg | Leu | Glu | Pro | Glu | Asp | Phe | Ala | Val | Tyr | Tyr | Cys | Gln | Gly |  |
|     |     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |  |
| Tyr | Asp | Arg | Ser | Pro | Leu | Thr | Phe | Gly | Cys | Gly | Thr | Lys | Val | Glu | Ile |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Lys | Ser | Gly | Gly | Gly | Gly | Ser | Glu | Val | Gln | Leu | Val | Glu | Ser | Gly | Gly |  |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |  |
| Gly | Leu | Val | Gln | Pro | Gly | Gly | Ser | Leu | Lys | Leu | Ser | Cys | Ala | Ala | Ser |  |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |  |
| Gly | Phe | Thr | Phe | Asn | Lys | Tyr | Ala | Met | Asn | Trp | Val | Arg | Gln | Ala | Pro |  |
|     |     | 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |  |
| Gly | Lys | Gly | Leu | Glu | Trp | Val | Ala | Arg | Ile | Arg | Ser | Lys | Tyr | Asn | Asn |  |
|     |     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |  |
| Tyr | Ala | Thr | Tyr | Tyr | Ala | Asp | Ser | Val | Lys | Asp | Arg | Phe | Thr | Ile | Ser |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Arg | Asp | Asp | Ser | Lys | Asn | Thr | Ala | Tyr | Leu | Gln | Met | Asn | Asn | Leu | Lys |  |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |  |
| Thr | Glu | Asp | Thr | Ala | Val | Tyr | Tyr | Cys | Val | Arg | His | Gly | Asn | Phe | Gly |  |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |  |
| Asn | Ser | Tyr | Ile | Ser | Tyr | Trp | Ala | Tyr | Trp | Gly | Gln | Gly | Thr | Leu | Val |  |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |  |
| Thr | Val | Ser | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly |  |
|     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |  |

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
385 390 395 400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
405 410 415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
420 425 430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
435 440 445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

Gly Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro  
500 505 510

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys  
515 520 525

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val  
530 535 540

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp  
545 550 555 560

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr  
565 570 575

Gly Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp  
 580 585 590

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu  
 595 600 605

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg  
 610 615 620

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys  
 625 630 635 640

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp  
 645 650 655

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys  
 660 665 670

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser  
 675 680 685

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser  
 690 695 700

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser  
 705 710 715 720

Leu Ser Leu Ser Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
 725 730 735

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
 740 745 750

Gly Gly Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu  
 755 760 765

Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp  
770 775 780 759

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp  
785 790 795 800

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly  
805 810 815

Val Glu Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly  
820 825 830

Ser Thr Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp  
835 840 845

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro  
850 855 860

Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu  
865 870 875 880

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn  
885 890 895

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile  
900 905 910

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr  
915 920 925

Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys  
930 935 940

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys  
945 950 955 960

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu

965

970

760

975

Ser Leu Ser Pro Gly Lys  
980

&lt;210&gt; 525

&lt;211&gt; 993

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 525

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125



Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 761 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr

762

325

330

335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Asp Lys Thr  
 500 505 510

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser  
 515 520 525

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
 530 535 540

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
 545 550 555 560

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
 565 570 575

Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val  
 580 585 590

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr  
 595 600 605

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr  
 610 615 620

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
 625 630 635 640

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
 645 650 655

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
 660 665 670

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
 675 680 685

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
 690 695 700

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala  
 705 710 715 720

764

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
725 730 735

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
740 745 750

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Lys  
755 760 765

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro  
770 775 780

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser  
785 790 795 800

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
805 810 815

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
820 825 830

Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys  
835 840 845

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
850 855 860

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
865 870 875 880

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
885 890 895

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr  
900 905 910

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
915 920 925 765

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu  
930 935 940

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys  
945 950 955 960

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu  
965 970 975

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly  
980 985 990

Lys

<210> 526  
<211> 991  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 526

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Gly Leu Glu Trp Met  
35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
50 55 60

766

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
130 135 140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

767  
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |  |  |  |  |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|--|--|
| 450        |            |            |            |            | 455        |            |            |            |            | 768        |            |            |            |            | 460        |  |  |  |  |
| Leu<br>465 | Gly        | Gly        | Lys        | Ala        | Ala<br>470 | Leu        | Thr        | Leu        | Ser        | Gly<br>475 | Val        | Gln        | Pro        | Glu        | Asp<br>480 |  |  |  |  |
| Glu        | Ala        | Glu        | Tyr        | Tyr<br>485 | Cys        | Val        | Leu        | Trp        | Tyr<br>490 | Ser        | Asn        | Arg        | Trp        | Val        | Phe        |  |  |  |  |
| Gly        | Gly        | Gly        | Thr<br>500 | Lys        | Leu        | Thr        | Val        | Leu<br>505 | Gly        | Gly        | Gly        | Gly        | Asp<br>510 | Lys        | Thr        |  |  |  |  |
| His        | Thr        | Cys<br>515 | Pro        | Pro        | Cys        | Pro        | Ala<br>520 | Pro        | Glu        | Leu        | Leu        | Gly<br>525 | Gly        | Pro        | Ser        |  |  |  |  |
| Val        | Phe<br>530 | Leu        | Phe        | Pro        | Pro        | Lys<br>535 | Pro        | Lys        | Asp        | Thr        | Leu<br>540 | Met        | Ile        | Ser        | Arg        |  |  |  |  |
| Thr<br>545 | Pro        | Glu        | Val        | Thr        | Cys<br>550 | Val        | Val        | Val        | Asp        | Val<br>555 | Ser        | His        | Glu        | Asp        | Pro<br>560 |  |  |  |  |
| Glu        | Val        | Lys        | Phe        | Asn<br>565 | Trp        | Tyr        | Val        | Asp        | Gly<br>570 | Val        | Glu        | Val        | His        | Asn<br>575 | Ala        |  |  |  |  |
| Lys        | Thr        | Lys        | Pro<br>580 | Cys        | Glu        | Glu        | Gln        | Tyr<br>585 | Gly        | Ser        | Thr        | Tyr        | Arg<br>590 | Cys        | Val        |  |  |  |  |
| Ser        | Val        | Leu<br>595 | Thr        | Val        | Leu        | His        | Gln<br>600 | Asp        | Trp        | Leu        | Asn        | Gly<br>605 | Lys        | Glu        | Tyr        |  |  |  |  |
| Lys        | Cys<br>610 | Lys        | Val        | Ser        | Asn        | Lys<br>615 | Ala        | Leu        | Pro        | Ala        | Pro<br>620 | Ile        | Glu        | Lys        | Thr        |  |  |  |  |
| Ile<br>625 | Ser        | Lys        | Ala        | Lys        | Gly<br>630 | Gln        | Pro        | Arg        | Glu        | Pro<br>635 | Gln        | Val        | Tyr        | Thr        | Leu<br>640 |  |  |  |  |
| Pro        | Pro        | Ser        | Arg        | Glu<br>645 | Glu        | Met        | Thr        | Lys        | Asn<br>650 | Gln        | Val        | Ser        | Leu        | Thr        | Cys<br>655 |  |  |  |  |



Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
 660 665 670

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
 675 680 685

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
 690 695 700

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala  
 705 710 715 720

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Gly  
 725 730 735

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
 740 745 750

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Lys Thr His  
 755 760 765

Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val  
 770 775 780

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr  
 785 790 795 800

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu  
 805 810 815

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys  
 820 825 830

Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val Ser  
 835 840 845

770

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys  
850 855 860

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile  
865 870 875 880

Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro  
885 890 895

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu  
900 905 910

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn  
915 920 925

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser  
930 935 940

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg  
945 950 955 960

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu  
965 970 975

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
980 985 990

<210> 527

<211> 993

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 527

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
                   20                                  25                                  30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
                   35                                  40                                  45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
           50                                  55                                  60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
   65                                  70                                  75                                  80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
                   85                                  90                                  95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
                   100                                  105                                  110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
           115                                  120                                  125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
   130                                  135                                  140

Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
  145                                  150                                  155                                  160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
                   165                                  170                                  175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
                   180                                  185                                  190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
           195                                  200                                  205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
 210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
 225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
 245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
 275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
 305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
 325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

773  
Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Asp Lys Thr  
500 505 510

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser  
515 520 525

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
530 535 540

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
545 550 555 560

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
565 570 575

Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val  
580 585 590

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 595 |     |     |     |     |     | 600 |     |     |     | 774 |     | 605 |     |     |     |  |
| Lys | Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr |  |
| 610 |     |     |     |     |     | 615 |     |     |     | 620 |     |     |     |     |     |  |
| Ile | Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu |  |
| 625 |     |     |     |     |     | 630 |     |     |     | 635 |     | 640 |     |     |     |  |
| Pro | Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys |  |
|     |     |     |     | 645 |     |     |     |     |     | 650 |     | 655 |     |     |     |  |
| Leu | Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser |  |
|     |     |     | 660 |     |     |     |     |     | 665 |     | 670 |     |     |     |     |  |
| Asn | Gly | Gln | Pro | Glu | Asn | Asn | Tyr | Lys | Thr | Thr | Pro | Pro | Val | Leu | Asp |  |
|     |     | 675 |     |     |     |     |     | 680 |     | 685 |     |     |     |     |     |  |
| Ser | Asp | Gly | Ser | Phe | Phe | Leu | Tyr | Ser | Lys | Leu | Thr | Val | Asp | Lys | Ser |  |
| 690 |     |     |     |     |     | 695 |     |     |     |     |     | 700 |     |     |     |  |
| Arg | Trp | Gln | Gln | Gly | Asn | Val | Phe | Ser | Cys | Ser | Val | Met | His | Glu | Ala |  |
| 705 |     |     |     |     |     | 710 |     |     |     |     |     | 715 |     | 720 |     |  |
| Leu | His | Asn | His | Tyr | Thr | Gln | Lys | Ser | Leu | Ser | Leu | Ser | Pro | Gly | Lys |  |
|     |     |     | 725 |     |     |     |     |     | 730 |     |     |     |     |     | 735 |  |
| Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly |  |
|     |     |     | 740 |     |     |     |     |     | 745 |     | 750 |     |     |     |     |  |
| Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Asp | Lys |  |
|     |     | 755 |     |     |     |     |     | 760 |     | 765 |     |     |     |     |     |  |
| Thr | His | Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | Gly | Pro |  |
| 770 |     |     |     |     |     | 775 |     |     |     |     |     | 780 |     |     |     |  |
| Ser | Val | Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser |  |
| 785 |     |     |     |     |     | 790 |     |     |     |     |     | 795 |     | 800 |     |  |

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
                   805                                  810                                  815

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
                   820                                  825                                  830

Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys  
                   835                                  840                                  845

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
                   850                                  855                                  860

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
                   865                                  870                                  875                                  880

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
                   885                                  890                                  895

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr  
                   900                                  905                                  910

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
                   915                                  920                                  925

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu  
                   930                                  935                                  940

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys  
                   945                                  950                                  955                                  960

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu  
                   965                                  970                                  975

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly  
                   980                                  985                                  990

Lys

<210> 528  
 <211> 991  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 528

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Tyr Met His Trp Val Arg Gln Ala Pro Gly Leu Cys Leu Glu Trp Met  
 35 40 45

Gly Ile Ile Asn Pro Ser Asp Gly Ser Thr Ser Tyr Ala Gln Lys Phe  
 50 55 60

Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Asn Thr Val Tyr  
 65 70 75 80

Met Asp Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Gly Asn Ser Ala Phe Tyr Ser Tyr Tyr Asp Met Asp Val  
 100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln  
 130 135 140



Thr Pro Leu Ser Leu Pro Val Thr Leu Gly Gln Pro Ala Ser Ile Ser  
145 150 155 160

Cys Arg Ser Ser Gln Ser Leu Val Tyr Arg Asp Gly Asn Thr Tyr Leu  
165 170 175

Ser Trp Phe Gln Gln Arg Pro Gly Gln Ser Pro Arg Arg Leu Ile Tyr  
180 185 190

Lys Val Ser Asn Trp Gln Ser Gly Val Pro Asp Arg Phe Ser Gly Gly  
195 200 205

Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu  
210 215 220

Asp Val Gly Val Tyr Tyr Cys Met Gln Gly Thr His Trp Pro Pro Thr  
225 230 235 240

Phe Gly Cys Gly Thr Lys Val Glu Ile Lys Ser Gly Gly Gly Gly Ser  
245 250 255

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
260 265 270

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asn Lys Tyr  
275 280 285

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
290 295 300

Ala Arg Ile Arg Ser Lys Tyr Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp  
305 310 315 320

Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Thr  
325 330 335

Ala Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Val Tyr  
 340 345 350

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Ile Ser Tyr Trp  
 355 360 365

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 370 375 380

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Thr Val Val  
 385 390 395 400

Thr Gln Glu Pro Ser Leu Thr Val Ser Pro Gly Gly Thr Val Thr Leu  
 405 410 415

Thr Cys Gly Ser Ser Thr Gly Ala Val Thr Ser Gly Asn Tyr Pro Asn  
 420 425 430

Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly Leu Ile Gly Gly  
 435 440 445

Thr Lys Phe Leu Ala Pro Gly Thr Pro Ala Arg Phe Ser Gly Ser Leu  
 450 455 460

Leu Gly Gly Lys Ala Ala Leu Thr Leu Ser Gly Val Gln Pro Glu Asp  
 465 470 475 480

Glu Ala Glu Tyr Tyr Cys Val Leu Trp Tyr Ser Asn Arg Trp Val Phe  
 485 490 495

Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly Gly Asp Lys Thr  
 500 505 510

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser  
 515 520 525

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg  
530 535 540 779

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro  
545 550 555 560

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala  
565 570 575

Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg Cys Val  
580 585 590

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr  
595 600 605

Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr  
610 615 620

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu  
625 630 635 640

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys  
645 650 655

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser  
660 665 670

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp  
675 680 685

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser  
690 695 700

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala  
705 710 715 720

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Gly

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 725 |     |     |     |     |     |     |     | 730 |     |     |     | 780 |     | 735 |     |     |  |
| Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly |     |  |
|     |     |     | 740 |     |     |     |     | 745 |     |     |     |     | 750 |     |     |     |  |
| Gly | Ser | Gly | Gly | Gly | Gly | Ser | Gly | Gly | Gly | Gly | Ser | Asp | Lys | Thr | His |     |  |
|     |     | 755 |     |     |     |     | 760 |     |     |     |     | 765 |     |     |     |     |  |
| Thr | Cys | Pro | Pro | Cys | Pro | Ala | Pro | Glu | Leu | Leu | Gly | Gly | Pro | Ser | Val |     |  |
|     |     | 770 |     |     |     |     | 775 |     |     |     |     | 780 |     |     |     |     |  |
| Phe | Leu | Phe | Pro | Pro | Lys | Pro | Lys | Asp | Thr | Leu | Met | Ile | Ser | Arg | Thr |     |  |
| 785 |     |     |     |     | 790 |     |     |     |     | 795 |     |     |     |     |     | 800 |  |
| Pro | Glu | Val | Thr | Cys | Val | Val | Val | Asp | Val | Ser | His | Glu | Asp | Pro | Glu |     |  |
|     |     |     | 805 |     |     |     |     | 810 |     |     |     |     | 815 |     |     |     |  |
| Val | Lys | Phe | Asn | Trp | Tyr | Val | Asp | Gly | Val | Glu | Val | His | Asn | Ala | Lys |     |  |
|     |     |     | 820 |     |     |     |     | 825 |     |     |     |     | 830 |     |     |     |  |
| Thr | Lys | Pro | Cys | Glu | Glu | Gln | Tyr | Gly | Ser | Thr | Tyr | Arg | Cys | Val | Ser |     |  |
|     |     | 835 |     |     |     |     | 840 |     |     |     |     | 845 |     |     |     |     |  |
| Val | Leu | Thr | Val | Leu | His | Gln | Asp | Trp | Leu | Asn | Gly | Lys | Glu | Tyr | Lys |     |  |
|     |     | 850 |     |     |     |     | 855 |     |     |     |     | 860 |     |     |     |     |  |
| Cys | Lys | Val | Ser | Asn | Lys | Ala | Leu | Pro | Ala | Pro | Ile | Glu | Lys | Thr | Ile |     |  |
| 865 |     |     |     |     | 870 |     |     |     |     | 875 |     |     |     |     |     | 880 |  |
| Ser | Lys | Ala | Lys | Gly | Gln | Pro | Arg | Glu | Pro | Gln | Val | Tyr | Thr | Leu | Pro |     |  |
|     |     |     | 885 |     |     |     |     | 890 |     |     |     |     | 895 |     |     |     |  |
| Pro | Ser | Arg | Glu | Glu | Met | Thr | Lys | Asn | Gln | Val | Ser | Leu | Thr | Cys | Leu |     |  |
|     |     |     | 900 |     |     |     |     | 905 |     |     |     |     | 910 |     |     |     |  |
| Val | Lys | Gly | Phe | Tyr | Pro | Ser | Asp | Ile | Ala | Val | Glu | Trp | Glu | Ser | Asn |     |  |
|     |     | 915 |     |     |     |     | 920 |     |     |     |     | 925 |     |     |     |     |  |

781

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser  
930 935 940

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg  
945 950 955 960

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu  
965 970 975

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys  
980 985 990

<210> 529  
<211> 118  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 529

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala

782

85

90

95

Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser  
115

<210> 530  
<211> 108  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 530

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 Ser Val Asn Lys Asn  
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 Gln Tyr Asp Arg Ser Pro  
85 90 95

Leu Thr Phe Gly Cys Gly Thr Lys Val Glu Ile Lys  
100 105

<210> 531  
 <211> 241  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 531

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
 1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
 20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
 35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
 85 90 95

Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
 130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
 145 150 155 160

784

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys

<210> 532  
<211> 496  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 532

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Phe  
20 25 30

Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Cys Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60



Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Arg Ile Ala Val Ala Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Asn Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Asp Arg Ser Pro Leu Thr Phe Gly Cys Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly Gly  
245 250 255

Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser  
                   260                                  265                                  270

Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala Pro  
                   275                                  280                                  285

Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn Asn  
                   290                                  295                                  300

Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile Ser  
   305                                  310                                  315                                  320

Arg Asp Asp Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Asn Leu Lys  
                                   325                                  330                                  335

Thr Glu Asp Thr Ala Val Tyr Tyr Cys Val Arg His Gly Asn Phe Gly  
                   340                                  345                                  350

Asn Ser Tyr Ile Ser Tyr Trp Ala Tyr Trp Gly Gln Gly Thr Leu Val  
                   355                                  360                                  365

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
                   370                                  375                                  380

Gly Gly Ser Gln Thr Val Val Thr Gln Glu Pro Ser Leu Thr Val Ser  
   385                                  390                                  395                                  400

Pro Gly Gly Thr Val Thr Leu Thr Cys Gly Ser Ser Thr Gly Ala Val  
                                   405                                  410                                  415

Thr Ser Gly Asn Tyr Pro Asn Trp Val Gln Gln Lys Pro Gly Gln Ala  
                   420                                  425                                  430

Pro Arg Gly Leu Ile Gly Gly Thr Lys Phe Leu Ala Pro Gly Thr Pro  
                   435                                  440                                  445

Ala Arg Phe Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Leu  
450 455 787 460

Ser Gly Val Gln Pro Glu Asp Glu Ala Glu Tyr Tyr Cys Val Leu Trp  
465 470 475 480

Tyr Ser Asn Arg Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu  
485 490 495

<210> 533  
<211> 227  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 533

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

788

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro Gly Lys  
225

<210> 534  
<211> 225  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 534

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro  
225

<210> 535  
<211> 227  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 535

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

791

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro Gly Lys  
225

<210> 536  
<211> 225  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 536

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val

50

55

792

60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro  
 225

&lt;210&gt; 537

&lt;211&gt; 227



&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Synthetic peptide

&lt;400&gt; 537

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro

165 794 175  
 Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190  
 Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205  
 His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220  
 Pro Gly Lys  
 225

<210> 538  
 <211> 225  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 538

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro  
225

<210> 539  
<211> 227  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 539

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205 797

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro Gly Lys  
225

<210> 540  
<211> 225  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 540

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr Tyr  
65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

798

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro  
225

<210> 541  
<211> 484  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 541

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

800

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
225 230 235 240

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
245 250 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu  
260 265 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu  
275 280 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser  
290 295 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu  
305 310 315 320

Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr  
325 330 335

Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn  
340 345 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro  
355 360 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln  
370 375 380

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val  
385 390 395 400

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val  
405 410 415



801

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro  
                   420                  425                  430

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr  
           435                  440                  445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val  
       450                  455                  460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu  
 465                  470                  475                  480

Ser Pro Gly Lys

<210> 542  
 <211> 480  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 542

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1                  5                  10                  15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
           20                  25                  30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
       35                  40                  45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
       50                  55                  60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr  
 65                  70                  75                  80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
                     85                    90                    95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
                     100                    105                    110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
                     115                    120                    125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
                     130                    135                    140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
                     145                    150                    155                    160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
                     165                    170                    175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
                     180                    185                    190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
                     195                    200                    205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
                     210                    215                    220

Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
                     225                    230                    235                    240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp  
                     245                    250                    255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
                     260                    265                    270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
275 280 803 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
290 295 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
305 310 315 320

Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Gly Ser Thr Tyr Arg  
325 330 335

Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
340 345 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
355 360 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
385 390 395 400

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
405 410 415

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
420 425 430

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro

|     |     |            |     |
|-----|-----|------------|-----|
| 465 | 470 | 804<br>475 | 480 |
|-----|-----|------------|-----|

470

804

480

|                       |                     |
|-----------------------|---------------------|
| $\langle 210 \rangle$ | 543                 |
| $\langle 211 \rangle$ | 484                 |
| $\langle 212 \rangle$ | PRT                 |
| $\langle 213 \rangle$ | Artificial Sequence |

<211> 484

<212> PRT

### <213> Artificial Sequence

<220>  
<223> Synthetic peptide

<223> Synthetic peptide

<400> 543

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

1

5

10

15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

20

25

30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

35

40

45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
50 55 60

50

55

60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
65 70 75 80

65

70

75

80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

85

90

95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

100

105

110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

115

120

125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
130 135 140

130

135

140

805  
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
210 215 220

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
225 230 235 240

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
245 250 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu  
260 265 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu  
275 280 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser  
290 295 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu  
305 310 315 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr  
325 330 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn



807

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met

808

195

200

205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 225 230 235 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp  
 245 250 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 260 265 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 275 280 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 290 295 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 305 310 315 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
 325 330 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
 340 345 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
 355 360 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
 370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
 385 390 395 400



Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
                   405                  410                  415

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
                   420                  425                  430

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
                   435                  440                  445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
                   450                  455                  460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
 465                  470                  475                  480

<210> 545  
 <211> 484  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 545

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1                  5                  10                  15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
                   20                  25                  30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
                   35                  40                  45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
                   50                  55                  60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr Tyr

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 65         |            |            |            | 70         |            |            |            | 810<br>75  |            |            |            | 80         |            |            |            |
| Arg        | Val        | Val        | Ser        | Val<br>85  | Leu        | Thr        | Val        | Leu        | His<br>90  | Gln        | Asp        | Trp        | Leu        | Asn<br>95  | Gly        |
| Lys        | Glu        | Tyr        | Lys<br>100 | Cys        | Lys        | Val        | Ser        | Asn<br>105 | Lys        | Ala        | Leu        | Pro        | Ala<br>110 | Pro        | Ile        |
| Glu        | Lys        | Thr<br>115 | Ile        | Ser        | Lys        | Ala        | Lys<br>120 | Gly        | Gln        | Pro        | Arg        | Glu<br>125 | Pro        | Gln        | Val        |
| Tyr        | Thr<br>130 | Leu        | Pro        | Pro        | Ser        | Arg<br>135 | Glu        | Glu        | Met        | Thr        | Lys<br>140 | Asn        | Gln        | Val        | Ser        |
| Leu<br>145 | Thr        | Cys        | Leu        | Val        | Lys<br>150 | Gly        | Phe        | Tyr        | Pro        | Ser<br>155 | Asp        | Ile        | Ala        | Val        | Glu<br>160 |
| Trp        | Glu        | Ser        | Asn        | Gly<br>165 | Gln        | Pro        | Glu        | Asn        | Asn<br>170 | Tyr        | Lys        | Thr        | Thr        | Pro<br>175 | Pro        |
| Val        | Leu        | Asp        | Ser<br>180 | Asp        | Gly        | Ser        | Phe        | Phe<br>185 | Leu        | Tyr        | Ser        | Lys        | Leu<br>190 | Thr        | Val        |
| Asp        | Lys        | Ser<br>195 | Arg        | Trp        | Gln        | Gln        | Gly<br>200 | Asn        | Val        | Phe        | Ser        | Cys<br>205 | Ser        | Val        | Met        |
| His<br>210 | Glu        | Ala        | Leu        | His        | Asn        | His<br>215 | Tyr        | Thr        | Gln        | Lys        | Ser<br>220 | Leu        | Ser        | Leu        | Ser        |
| Pro<br>225 | Gly        | Lys        | Gly        | Gly        | Gly<br>230 | Gly        | Ser        | Gly        | Gly        | Gly<br>235 | Gly        | Ser        | Gly        | Gly        | Gly<br>240 |
| Gly        | Ser        | Gly        | Gly        | Gly<br>245 | Gly        | Ser        | Gly        | Gly        | Gly<br>250 | Gly        | Ser        | Gly        | Gly        | Gly<br>255 | Gly        |
| Ser        | Asp        | Lys        | Thr<br>260 | His        | Thr        | Cys        | Pro        | Pro<br>265 | Cys        | Pro        | Ala        | Pro        | Glu<br>270 | Leu        | Leu        |

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu  
 275 280 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser  
 290 295 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu  
 305 310 315 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr  
 325 330 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn  
 340 345 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro  
 355 360 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln  
 370 375 380

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val  
 385 390 395 400

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val  
 405 410 415

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro  
 420 425 430

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr  
 435 440 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val  
 450 455 460

812

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu  
465 470 475 480

Ser Pro Gly Lys

<210> 546  
<211> 480  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 546

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
50 55 60

His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr Tyr  
65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 225 230 235 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp  
 245 250 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
 260 265 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
 275 280 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
 290 295 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
 305 310 315 320

814

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Gly Ser Thr Tyr Arg  
325 330 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
340 345 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
355 360 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
385 390 395 400

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
405 410 415

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
420 425 430

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp  
435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
465 470 475 480

<210> 547

<211> 484

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

&lt;400&gt; 547

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly  
 225 230 235 240

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly  
 245 250 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu  
 260 265 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu  
 275 280 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser  
 290 295 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu  
 305 310 315 320

Val His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr  
 325 330 335

Tyr Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn  
 340 345 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro  
 355 360 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln  
 370 375 380



Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val  
 385 390 817 395 400

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val  
 405 410 415

Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro  
 420 425 430

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr  
 435 440 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val  
 450 455 460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu  
 465 470 475 480

Ser Pro Gly Lys

<210> 548  
 <211> 480  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Synthetic peptide

<400> 548

Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly  
 1 5 10 15

Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met  
 20 25 30

Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His  
 35 40 45

Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val  
 50 55 60

His Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr Tyr  
 65 70 75 80

Arg Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly  
 85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile  
 100 105 110

Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val  
 115 120 125

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser  
 130 135 140

Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu  
 145 150 155 160

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro  
 165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val  
 180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met  
 195 200 205

His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser  
 210 215 220

Pro Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
 225 230 235 240

819  
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp  
245 250 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly  
260 265 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile  
275 280 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu  
290 295 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His  
305 310 315 320

Asn Ala Lys Thr Lys Pro Cys Glu Glu Gln Tyr Asn Ser Thr Tyr Arg  
325 330 335

Cys Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys  
340 345 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu  
355 360 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr  
370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu  
385 390 395 400

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp  
405 410 415

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val  
420 425 430

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp

435

440

820

445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His  
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro  
465 470 475 480

<210> 549

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 549

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
1 5 10 15

Gly Gly Gly Ser  
20

<210> 550

<211> 25

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 550

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser  
20 25

<210> 551

<211> 30

821

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 551

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
20 25 30

<210> 552  
<211> 35  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 552

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly  
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
20 25 30

Gly Gly Ser  
35

<210> 553  
<211> 40  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 553

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly

822

1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly  
20 25 30

Gly Gly Ser Gly Gly Gly Gly Ser  
35 40

<210> 554  
<211> 503  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic peptide

<400> 554

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu  
1 5 10 15

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Asp Ser Ile Ser Ser Tyr  
20 25 30

Tyr Trp Thr Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45

Gly Tyr Ile Tyr Tyr Ser Gly Thr Thr Asn Tyr Asn Pro Ser Leu Lys  
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Ser Gln Phe Ser Leu  
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala  
85 90 95

Ser Ile Ala Val Arg Gly Phe Phe Phe Asp Tyr Trp Gly Gln Gly Thr  
100 105 110

823

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
115 120 125

Gly Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Gly Thr Leu  
130 135 140

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln  
145 150 155 160

Ser Val Ser Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln  
165 170 175

Ala Pro Arg Leu Leu Ile Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile  
180 185 190

Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr  
195 200 205

Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln  
210 215 220

Tyr Gly Thr Ser Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile  
225 230 235 240

Lys Arg Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Glu Ser Gly  
245 250 255

Gly Gly Leu Val Gln Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala  
260 265 270

Ser Gly Phe Thr Phe Asn Lys Tyr Ala Met Asn Trp Val Arg Gln Ala  
275 280 285

Pro Gly Lys Gly Leu Glu Trp Val Ala Arg Ile Arg Ser Lys Tyr Asn  
290 295 300

Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Asp Arg Phe Thr Ile

