

913116_ST25
SEQUENCE LISTING

<110> Katholieke Universiteit Leuven
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE
UNIVERSITE DE BORDEAUX
UNIVERSITE DE BORDEAUX

<120> A YEAST MODEL FOR SYNERGISTIC TOXICITY

<130> 913116-IR/AC/FD

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<141> 2014-11-07

<150> GB1319656.3
<151> 2013-11-07

<160> 55

<170> PatentIn version 3.5

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<213> Homo sapiens

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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala Thr
35 40

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

Gly Leu Met Val Gly Gly Val Val
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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile
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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

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

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

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Asp Ala Glu Phe Arg Arg Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

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Asp Ala Glu Phe Arg His Asn Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Gly Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
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Gly Leu Met Val Gly Gly Val Val Ile Ala
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<400> 11

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Gly Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Gln Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
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<400> 13

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Lys Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
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<400> 14

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

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

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<213> Homo sapiens

<400> 15

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Thr
35 40

<210> 16

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<213> Homo sapiens

<400> 16

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Val
35 40

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<213> Homo sapiens

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

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Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

<210> 18
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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Thr Ile
 20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

<210> 19
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<400> 19

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Val Leu Met Val Gly Gly Val Val Ile Ala
 35 40

<210> 20
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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
 1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
 20 25 30

Gly Thr Met Val Gly Gly Val Val Ile Ala
 35 40

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<400> 21

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Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Cys Gly Val Val Ile Ala
35 40

<210> 22
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<213> Homo sapiens

<400> 22

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Ile Ile Ala
35 40

<210> 23
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<400> 23

Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln
1 5 10 15

Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile
20 25 30

Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Met Ser Lys Gly Glu
35 40 45

Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp
50 55 60

Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala
65 70 75 80

Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu
85 90 95

Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln
100 105 110

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Cys Phe Ala Arg Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys
115 120 125

Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys
130 135 140

Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp
145 150 155 160

Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp
165 170 175

Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn
180 185 190

Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe
195 200 205

Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His
210 215 220

Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp
225 230 235 240

Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu
245 250 255

Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile
260 265 270

Thr His Gly Met Asp Glu Leu Tyr Lys
275 280

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Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu

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60

50

55

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

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

Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val Phe
100 105 110

Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
115 120 125

Val Gly Gly Val Val Ile Ala
130 135

<210> 25

<211> 373

<212> PRT

<213> Artificial Sequence

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<400> 25

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

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

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

Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val Phe
100 105 110

Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
115 120 125

Val Gly Gly Val Val Ile Ala Met Ser Lys Gly Glu Glu Leu Phe Thr
130 135 140

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Gly Val Val Pro Ile Leu Val Glu Leu Asp Gly Asp Val Asn Gly His
145 150 155 160

Lys Phe Ser Val Ser Gly Glu Gly Glu Gly Asp Ala Thr Tyr Gly Lys
165 170 175

Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly Lys Leu Pro Val Pro Trp
180 185 190

Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly Val Gln Cys Phe Ala Arg
195 200 205

Tyr Pro Asp His Met Lys Gln His Asp Phe Phe Lys Ser Ala Met Pro
210 215 220

Glu Gly Tyr Val Gln Glu Arg Thr Ile Phe Phe Lys Asp Asp Gly Asn
225 230 235 240

Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu Gly Asp Thr Leu Val Asn
245 250 255

Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys Glu Asp Gly Asn Ile Leu
260 265 270

Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser His Asn Val Tyr Ile Met
275 280 285

Ala Asp Lys Gln Lys Asn Gly Ile Lys Val Asn Phe Lys Ile Arg His
290 295 300

Asn Ile Glu Asp Gly Ser Val Gln Leu Ala Asp His Tyr Gln Gln Asn
305 310 315 320

Thr Pro Ile Gly Asp Gly Pro Val Leu Leu Pro Asp Asn His Tyr Leu
325 330 335

Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro Asn Glu Lys Arg Asp His
340 345 350

Met Val Leu Leu Glu Phe Val Thr Ala Ala Gly Ile Thr His Gly Met
355 360 365

Asp Glu Leu Tyr Lys
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<400> 26

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

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

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

Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val Phe
100 105 110

Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
115 120 125

Val Gly Gly Val Val Ile Ala Gly Ala Gly Ala Gly Ala Met Ser Lys
130 135 140

Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp
145 150 155 160

Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly
165 170 175

Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly
180 185 190

Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly
195 200 205

Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Lys Gln His Asp Phe
210 215 220

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

Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu
245 250 255

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys

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260

265

270

Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser
 275 280 285

His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val
 290 295 300

Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala
 305 310 315 320

Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu
 325 330 335

Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro
 340 345 350

Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala
 355 360 365

Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys
 370 375

<210> 27

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<212> PRT

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

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
 35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
 50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
 65 70 75 80

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

Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val Phe
 100 105 110

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Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
115 120 125

Val Cys Gly Val Val Ile Ala
130 135

<210> 28
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<213> Artificial Sequence

<220>
<223> synthetic polypeptide

<400> 28

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
65 70 75 80

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

Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val Phe
100 105 110

Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly Leu Met
115 120 125

Val Cys Gly Val Val Ile Ala Gly Ala Gly Ala Gly Ala Met Ser Lys
130 135 140

Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val Glu Leu Asp
145 150 155 160

Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu Gly Glu Gly
165 170 175

Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys Thr Thr Gly
180 185 190

Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe Gly Tyr Gly

195

200

205

Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Lys Gln His Asp Phe
 210 215 220

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

Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val Lys Phe Glu
 245 250 255

Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile Asp Phe Lys
 260 265 270

Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn Tyr Asn Ser
 275 280 285

His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly Ile Lys Val
 290 295 300

Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val Gln Leu Ala
 305 310 315 320

Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro Val Leu Leu
 325 330 335

Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser Lys Asp Pro
 340 345 350

Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val Thr Ala Ala
 355 360 365

Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys
 370 375

<210> 29
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<400> 29

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
 1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
 20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
 35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
 50 55 60

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Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
 65 70 75 80
 Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Gln Pro His Thr Glu
 85 90 95
 Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
 100 105 110
 Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
 115 120 125
 Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
 130 135 140
 Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
 145 150 155 160
 Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
 165 170 175
 Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
 180 185 190
 Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
 195 200 205
 Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
 210 215 220
 Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
 225 230 235 240
 Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
 245 250 255
 Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
 260 265 270
 Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln
 275 280 285
 Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly
 290 295 300
 Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser
 305 310 315 320
 Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln
 325 330 335

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Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser
340 345 350

Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn
355 360 365

Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala
370 375 380

Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser
385 390 395 400

Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 30
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<212> PRT
<213> Homo sapiens

<400> 30

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
65 70 75 80

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

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

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Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 31
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<400> 31

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
65 70 75 80

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
130 135 140

Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
145 150 155 160

Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
165 170 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
180 185 190

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Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
195 200 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
210 215 220

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
225 230 235 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
245 250 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
260 265 270

Gly Lys Val Gln Ile Ile Asn Lys Leu Asp Leu Ser Asn Val Gln Ser
275 280 285

Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly Ser
290 295 300

Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser Lys
305 310 315 320

Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln Val
325 330 335

Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser Lys
340 345 350

Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn Lys
355 360 365

Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala Lys
370 375 380

Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser Gly
385 390 395 400

Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser Ile
405 410 415

Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val Ser
420 425 430

Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 32
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<213> Homo sapiens

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<400> 32

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
65 70 75 80

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
130 135 140

Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
145 150 155 160

Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
165 170 175

Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
180 185 190

Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
195 200 205

Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
210 215 220

Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
225 230 235 240

Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
245 250 255

Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Val

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260

265

270

Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln
 275 280 285

Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly
 290 295 300

Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser
 305 310 315 320

Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln
 325 330 335

Val Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser
 340 345 350

Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn
 355 360 365

Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala
 370 375 380

Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser
 385 390 395 400

Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
 405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
 420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
 435 440

<210> 33
 <211> 441
 <212> PRT
 <213> Homo sapiens

<400> 33

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
 1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
 20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
 35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
 50 55 60

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Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
 65 70 75 80
 Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Gln Pro His Thr Glu
 85 90 95
 Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
 100 105 110
 Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
 115 120 125
 Ser Lys Ser Lys Asp Gly Thr Gly Ser Asp Asp Lys Lys Ala Lys Gly
 130 135 140
 Ala Asp Gly Lys Thr Lys Ile Ala Thr Pro Arg Gly Ala Ala Pro Pro
 145 150 155 160
 Gly Gln Lys Gly Gln Ala Asn Ala Thr Arg Ile Pro Ala Lys Thr Pro
 165 170 175
 Pro Ala Pro Lys Thr Pro Pro Ser Ser Gly Glu Pro Pro Lys Ser Gly
 180 185 190
 Asp Arg Ser Gly Tyr Ser Ser Pro Gly Ser Pro Gly Thr Pro Gly Ser
 195 200 205
 Arg Ser Arg Thr Pro Ser Leu Pro Thr Pro Pro Thr Arg Glu Pro Lys
 210 215 220
 Lys Val Ala Val Val Arg Thr Pro Pro Lys Ser Pro Ser Ser Ala Lys
 225 230 235 240
 Ser Arg Leu Gln Thr Ala Pro Val Pro Met Pro Asp Leu Lys Asn Val
 245 250 255
 Lys Ser Lys Ile Gly Ser Thr Glu Asn Leu Lys His Gln Pro Gly Gly
 260 265 270
 Gly Lys Val Gln Ile Ile Asn Lys Lys Leu Asp Leu Ser Asn Val Gln
 275 280 285
 Ser Lys Cys Gly Ser Lys Asp Asn Ile Lys His Val Pro Gly Gly Gly
 290 295 300
 Ser Val Gln Ile Val Tyr Lys Pro Val Asp Leu Ser Lys Val Thr Ser
 305 310 315 320
 Lys Cys Gly Ser Leu Gly Asn Ile His His Lys Pro Gly Gly Gly Gln
 325 330 335

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Met Glu Val Lys Ser Glu Lys Leu Asp Phe Lys Asp Arg Val Gln Ser
340 345 350

Lys Ile Gly Ser Leu Asp Asn Ile Thr His Val Pro Gly Gly Gly Asn
355 360 365

Lys Lys Ile Glu Thr His Lys Leu Thr Phe Arg Glu Asn Ala Lys Ala
370 375 380

Lys Thr Asp His Gly Ala Glu Ile Val Tyr Lys Ser Pro Val Val Ser
385 390 395 400

Gly Asp Thr Ser Pro Arg His Leu Ser Asn Val Ser Ser Thr Gly Ser
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 34
<211> 441
<212> PRT
<213> Homo sapiens

<400> 34

Met Ala Glu Pro Arg Gln Glu Phe Glu Val Met Glu Asp His Ala Gly
1 5 10 15

Thr Tyr Gly Leu Gly Asp Arg Lys Asp Gln Gly Gly Tyr Thr Met His
20 25 30

Gln Asp Gln Glu Gly Asp Thr Asp Ala Gly Leu Lys Glu Ser Pro Leu
35 40 45

Gln Thr Pro Thr Glu Asp Gly Ser Glu Glu Pro Gly Ser Glu Thr Ser
50 55 60

Asp Ala Lys Ser Thr Pro Thr Ala Glu Asp Val Thr Ala Pro Leu Val
65 70 75 80

Asp Glu Gly Ala Pro Gly Lys Gln Ala Ala Ala Gln Pro His Thr Glu
85 90 95

Ile Pro Glu Gly Thr Thr Ala Glu Glu Ala Gly Ile Gly Asp Thr Pro
100 105 110

Ser Leu Glu Asp Glu Ala Ala Gly His Val Thr Gln Ala Arg Met Val
115 120 125

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

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Gly Asp Thr Ser Pro Trp His Leu Ser Asn Val Ser Ser Thr Gly Ser
405 410 415

Ile Asp Met Val Asp Ser Pro Gln Leu Ala Thr Leu Ala Asp Glu Val
420 425 430

Ser Ala Ser Leu Ala Lys Gln Gly Leu
435 440

<210> 35

<211> 238

<212> PRT

<213> Aequorea victoria

<400> 35

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

Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
20 25 30

Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
35 40 45

Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe
50 55 60

Gly Tyr Gly Val Gln Cys Phe Ala Arg Tyr Pro Asp His Met Lys Gln
65 70 75 80

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

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

Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
115 120 125

Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
130 135 140

Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
145 150 155 160

Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val
165 170 175

Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
180 185 190

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 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
 195 200 205

Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
 210 215 220

Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys
 225 230 235

<210> 36
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 36

Gly Ala Gly Ala Gly Ala
 1 5

<210> 37
 <211> 92
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic polypeptide

<400> 37

Met Arg Phe Pro Ser Ile Phe Thr Ala Val Leu Phe Ala Ala Ser Ser
 1 5 10 15

Ala Leu Ala Ala Pro Val Asn Thr Thr Thr Glu Asp Glu Thr Ala Gln
 20 25 30

Ile Pro Ala Glu Ala Val Ile Gly Tyr Leu Asp Leu Glu Gly Asp Phe
 35 40 45

Asp Val Ala Val Leu Pro Phe Ser Asn Ser Thr Asn Asn Gly Leu Leu
 50 55 60

Phe Ile Asn Thr Thr Ile Ala Ser Ile Ala Ala Lys Glu Glu Gly Val
 65 70 75 80

Ser Leu Asp Lys Arg Glu Ala Glu Ala Gln Val Thr
 85 90

<210> 38
 <211> 846
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

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<400> 38
 atggatgcag aattccgaca tgactcagga tatgaagttc atcatcaaaa attggtgttc 60
 ttgacagaag atgtgggttc aaacaaaggt gcaatcattg gactcatggt gggcgggtgtt 120
 gtcatacgca tgtctaaagg tgaagaatta ttcactggtg ttgtcccaat ttggttgaa 180
 ttagatggtg atgttaatgg tcacaaattt tctgtctccg gtgaagggtga aggtgatgct 240
 acttacggta aattgacctt aaaattttatt tgtactactg gtaaattgcc agttccatgg 300
 ccaaccttag tcactacttt cggttatggt gttcaatggt ttgctagata cccagatcat 360
 atgaaacaac atgacttttt caagtctgcc atgccagaag gttatgttca agaaagaact 420
 atttttttca aagatgacgg taactacaag accagagctg aagtcaagtt tgaagggtgat 480
 accttagtta atagaatcga attaaaaggt attgatttta aagaagatgg taacatttta 540
 ggtcacaaat tggaatacaa ctataactct cacaatgttt acatcatggc tgacaaacaa 600
 aagaatggta tcaaagttta cttcaaaatt agacacaaca ttgaagatgg ttctgttcaa 660
 ttagctgacc attatcaaca aaatactcca attggtgatg gtccagtctt gttaccagac 720
 aaccattact tatccactca atctgcctta tccaaagatc caaacgaaaa gagagaccac 780
 atggtcttgt tagaatttgt tactgctgct ggtattaccc atggtatgga tgaattgtac 840
 aaataa 846

<210> 39
 <211> 405
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 39
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 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120
 tacttagatt tagaagggga ttctgatgtt gctgttttgc ctttttccaa cagcacaat 180
 aacgggttat tgttttataaa tactactatt gccagcattg ctgctaaaga agaaggggta 240
 tctttggata aaagagaggc tgaagctcag gtcaccatgg atgcagaatt ccgacatgac 300
 tcaggatatg aagttcatca tcaaaaattg gtgttctttg cagaagatgt gggttcaaac 360
 aaaggtgcaa tcattggact catggtgggc ggtgttgtca tagcg 405

<210> 40
 <211> 1122
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 40
 atgagatttc cttcaatttt tactgcagtt ttattcgcag catcctccgc attagctgct 60
 ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt 120

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tacttagatt tagaagggga tttcgatgtt gctgttttgc cattttccaa cagcacaat	180
aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta	240
tctttggata aaagagaggc tgaagctcag gtcaccatgg atgcagaatt cgcacatgac	300
tcaggatatg aagttcatca tcaaaaattg gtgttctttg cagaagatgt gggttcaaac	360
aaaggtgcaa tcattggact catggtgggc ggtgttgtca tagcgaatgc taaaggtgaa	420
gaattattca ctggtgttgt cccaattttg gttgaattag atggtgatgt taatggtcac	480
aaattttctg tctccggtga aggtgaaggt gatgctactt acggtaaatt gaccttaaaa	540
tttatttgta ctactggtaa attgccagtt ccatggccaa ccttagtcac tactttcggg	600
tatggtgttc aatgttttgc tagataccca gatcatatga aacaacatga ctttttcaag	660
tctgccatgc cagaaggtta tgttcaagaa agaactattt ttttcaaaga tgacggtaac	720
tacaagacca gagctgaagt caagtttgaa ggtgatacct tagttaatag aatcgaatta	780
aaaggtattg attttaaaga agatggtaac attttaggtc acaaattgga atacaactat	840
aactctcaca atgtttacat catggctgac aaacaaaaga atggtatcaa agttaacttc	900
aaaattagac acaacattga agatggttct gttcaattag ctgaccatta tcaacaaaat	960
actccaattg gtgatgggcc agtcttggtt ccagacaacc attacttatc cactcaatct	1020
gccttatcca aagatccaaa cgaaaagaga gaccacatgg tcttggttaga atttgttact	1080
gctgctggta ttacccatgg tatggatgaa ttgtacaaat aa	1122

<210> 41

<211> 1140

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic polynucleotide

<400> 41

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ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggg	120
tacttagatt tagaagggga tttcgatgtt gctgttttgc cattttccaa cagcacaat	180
aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta	240
tctttggata aaagagaggc tgaagctcag gtcaccatgg atgcagaatt cgcacatgac	300
tcaggatatg aagttcatca tcaaaaattg gtgttctttg cagaagatgt gggttcaaac	360
aaaggtgcaa tcattggact catggtgggc ggtgttgtca tagcgggtgc tggcgccggg	420
gctatgtcta aaggtgaaga attattcact ggtgttgtcc caattttggg tgaattagat	480
ggtgatgtta atggtcacia attttctgtc tccggtgaag gtgaagggtga tgctacttac	540
ggtaaattga ccttaaaatt tatttgact actggtaaatt tgccagttcc atggccaacc	600
ttagtcacta ctttcgggta tgggtgttcaa tgttttgcta gataccaga tcatatgaaa	660
caacatgact ttttcaagtc tgccatgcc gaagggtatg ttcaagaaag aactatTTTT	720

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ttcaaagatg acggttaacta caagaccaga gctgaagtca agtttgaagg tgatacctta	780
gttaatagaa tcgaattaaa aggtattgat tttaaagaag atggtaacat tttaggtcac	840
aaattggaat acaactataa ctctcacaat gtttacaatca tggctgacaa acaaaagaat	900
ggtatcaaag ttaacttcaa aattagacac aacattgaag atggttctgt tcaattagct	960
gaccattatc aacaaaatac tccaattggg gatgggtccag tcttggttacc agacaacat	1020
tacttatcca ctcaatctgc cttatccaaa gatccaaacg aaaagagaga ccacatgggc	1080
ttgttagaat ttgttactgc tgctgggtatt acccatggta tggatgaatt gtacaaataa	1140

<210> 42
 <211> 405
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 42	
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ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt	120
tacttagatt tagaagggga tttcgatggt gctgttttgc cttttccaa cagcacaat	180
aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta	240
tctttggata aaagagaggc tgaagctcag gtcacatgg atgcagaatt ccgacatgac	300
tcaggatatg aagttcatca tcaaaaattg gtgttctttg cagaagatgt gggttcaaac	360
aaaggtgcaa tcattggact catggtgtgc ggtgttgtca tagcg	405

<210> 43
 <211> 1140
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic polynucleotide

<400> 43	
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ccagtcaaca ctacaacaga agatgaaacg gcacaaattc cggctgaagc tgtcatcggt	120
tacttagatt tagaagggga tttcgatggt gctgttttgc cttttccaa cagcacaat	180
aacgggttat tgtttataaa tactactatt gccagcattg ctgctaaaga agaaggggta	240
tctttggata aaagagaggc tgaagctcag gtcacatgg atgcagaatt ccgacatgac	300
tcaggatatg aagttcatca tcaaaaattg gtgttctttg cagaagatgt gggttcaaac	360
aaaggtgcaa tcattggact catggtgtgc ggtgttgtca tagcgggtgc tggcgccggt	420
gctatgtcta aaggtgaaga attattcact ggtgttgtcc caattttggg tgaattagat	480
ggtgatgtta atggtcacaa attttctgtc tccgggtgaag gtgaaggtga tgctacttac	540
ggtaaattga ccttaaaatt tatttgtact actggtaaatt tgccagttcc atggccaacc	600

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ttagtcacta ctttcggtta tgggtgttcaa tgttttgcta gatacccaga tcatatgaaa	660
caacatgact ttttcaagtc tgccatgccca gaagggttatg ttcaagaaag aactatTTTT	720
ttcaaagatg acggttaacta caagaccaga gctgaagtca agtttgaagg tgatacctta	780
gttaatagaa tcgaattaaa aggtattgat tttaaagaag atggtaacat tttaggtcac	840
aaattggaat acaactataa ctctcacaat gtttacatca tggctgacaa acaaaagaat	900
ggtatcaaag ttaacttcaa aattagacac aacattgaag atgggttctgt tcaattagct	960
gaccattatc aacaaaatac tccaattggg gatgggtccag tcttggtacc agacaacat	1020
tacttatcca ctcaatctgc cttatccaaa gatccaaacg aaaagagaga ccacatggtc	1080
ttgttagaat ttgttactgc tgctgggtatt acccatggta tggatgaatt gtacaaataa	1140

<210> 44
 <211> 1326
 <212> DNA
 <213> Homo sapiens

<400> 44	
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gctggcctga aagaatctcc cctgcagacc cccactgagg acggatctga ggaaccgggc	180
tctgaaacct ctgatgctaa gagcactcca acagcggaag atgtgacagc acccttagtg	240
gatgagggag ctcccggaac gcaggctgcc gcgcagcccc acacggagat cccagaagga	300
accacagctg aagaagcagg cattggagac acccccagcc tgggaagacga agctgctggt	360
cacgtgaccc aagctcgcac ggtcagtaaa agcaaagacg ggactggaag cgatgacaaa	420
aaagccaagg gggctgatgg taaaacgaag atcgccacac cgcggggagc agccccctca	480
ggccagaagg gccaggccaa cgccaccagg attccagcaa aaaccccgcc cgctccaaag	540
acaccaccca gctctggtga acctccaaaa tcaggggatc gcagcggcta cagcagcccc	600
ggctccccag gcactcccgg cagccgctcc cgcaccccggt cccttccaac cccacccacc	660
cgggagccca agaagggtggc agtgggtccgt actccaccca agtcgccgtc ttccgccaag	720
agccgcctgc agacagcccc cgtgcccattg ccagacctga agaattgtcaa gtccaagatc	780
ggctccactg agaacctgaa gcaccagccg ggaggcgagg aggtgcagat aattaataag	840
aagctggatc ttagcaacgt ccagtccaag tgtgggtcaa aggataatat caaacacgtc	900
ccgggaggcg gcagtgtgca aatagtctac aaaccagttg acctgagcaa ggtgacctcc	960
aagtgtggct cattaggcaa catccatcat aaaccaggag gtggccagggt ggaagtaaaa	1020
tctgagaagc ttgacttcaa ggacagagtc cagtcgaaga ttgggtccct ggacaatatc	1080
accacagctc ctggcgaggg aaataaaaaag attgaaaccc acaagctgac cttccgcgag	1140
aacgccaagg ccaagacaga ccacggggcg gagatcgtgt acaagtcgcc agtggtgtct	1200
ggggacacgt ctccacggca tctcagcaat gtctcctcca ccggcagcat cgacatggta	1260

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gactcgcccc agctcgccac gctagctgac gaggtgtctg cctccctggc caagcagggg	1320
ttgtga	1326

<210> 45
 <211> 1326
 <212> DNA
 <213> Homo sapiens

<400> 45 atggctgagc cccgccagga gttcgaagtg atggaagatc acgctgggac gtacggggtg	60
ggggacagga aagatcaggg gggctacacc atgcaccaag accaagaggg tgacacggac	120
gctggcctga aagaatctcc cctgcagacc cccactgagg acggatctga ggaaccgggc	180
tctgaaacct ctgatgctaa gagcactcca acagcggaag atgtgacagc acccttagtg	240
gatgagggag ctcccggcaa gcaggctgcc gcgcagcccc acacggagat cccagaagga	300
accacagctg aagaagcagg cattggagac acccccagcc tggaagacga agctgctggt	360
cacgtgacct aagctcgcat ggtcagtaaa agcaaagacg ggactggaag cgatgacaaa	420
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ggccagaagg gccaggccaa cgccaccagg attccagcaa aaaccccgcc cgctccaaag	540
acaccacca gctctggtga acctccaaaa tcaggggatc gcagcggcta cagcagcccc	600
ggctccccag gcactcccg gagccgctcc cgcaccccg cctttccaac cccaccacc	660
cgggagccca agaaggtggc agtgggtccgt actccacca agtcgccgtc ttccgccaag	720
agccgcctgc agacagcccc cgtgcccatt ccagacctga agaattgtcaa gtccaagatc	780
ggctccactg agaacctgaa gcaccagccg ggaggcggga aggtgcagat aattaataag	840
aagctggatc ttagcaacgt ccagtcgaag tgtgggtcaa aggataatat caaacacgtc	900
ctgggagggc gcagtgtgca aatagtctac aaaccagttg acctgagcaa ggtgacctcc	960
aagtgtggct cattaggcaa catccatcat aaaccaggag gtggccagggt ggaagtaaaa	1020
tctgagaagc ttgacttcaa ggacagagtc cagtcgaaga ttgggtccct ggacaatatc	1080
accacgtcc ctggcggagg aaataaaaag attgaaaccc acaagctgac cttccgcgag	1140
aacgccaag ccaagacaga ccacggggcg gagatcgtgt acaagtcgcc agtgggtgtct	1200
ggggacacgt ctccacggca tctcagcaat gtctcctcca ccggcagcat cgacatggta	1260
gactcgcccc agctcgccac gctagctgac gaggtgtctg cctccctggc caagcagggg	1320
ttgtga	1326

<210> 46
 <211> 1322
 <212> DNA
 <213> Homo sapiens

<400> 46 tggctgagcc ccgccaggag ttcgaagtga tggaagatca cgctgggacg tacggggttg	60
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ctggcctgaa agaatctccc ctgcagaccc ccactgagga cggatctgag gaaccgggct	180
ctgaaacctc tgatgctaag agcactccaa cagcgggaaga tgtgacagca cccttagtg	240
atgagggagc tcccggcaag caggctgccg cgcagcccca cacggagatc ccagaaggaa	300
ccacagctga agaagcaggc attggagaca cccccagcct ggaagacgaa gctgctggtc	360
acgtgacca agctcgcacg gtcagtaaaa gcaaagacgg gactggaagc gatgacaaaa	420
aagccaaggg ggctgatggt aaaacgaaga tcgccacacc gcggggagca gcccctccag	480
gccagaaggg ccaggccaac gccaccagga ttccagcaaa aaccccgccc gctccaaaga	540
caccaccag ctctggtgaa cctccaaaat caggggatcg cagcggctac agcagccccg	600
gctccccagg cactcccggc agccgctccc gcaccccgct ccttccaacc ccaccaccc	660
gggagcccaa gaaggtggca gtggtccgta ctccaccaa gtcgccgtct tccgccaaga	720
gccgcctgca gacagcccc gtgcccacgc cagacctgaa gaatgtcaag tccaagatcg	780
gctccactga gaacctgaag caccagccgg gaggcgggaa ggtgcagata attaataagc	840
tggatcttag caacgtccag tccaagtgtg gctcaaagga taatatcaaa cacgtcccgg	900
gaggcggcag tgtgcaaata gtctacaaac cagttgacct gagcaagggtg acctccaagt	960
gtggctcatt aggcaacatc catcataaac caggaggtgg ccagggtgaa gtaaaatctg	1020
agaagcttga cttcaaggac agagtccagt cgaagattgg gtccctggac aatatcacc	1080
acgtccctgg cggaggaaat aaaaagattg aaaccacaa gctgaccttc cgcgagaacg	1140
ccaaagccaa gacagaccac ggggcggaga tcgtgtacaa gtcgccagtg gtgtctgggg	1200
acacgtctcc acggcatctc agcaatgtct cctccaccgg cagcatcgac atggtagact	1260
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ga	1322

<210> 47
 <211> 1326
 <212> DNA
 <213> Homo sapiens

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ggggacagga aagatcaggg gggctacacc atgcaccaag accaagaggg tgacacggac	120
gctggcctga aagaatctcc cctgcagacc ccactgagg acggatctga ggaaccgggc	180
tctgaaacct ctgatgctaa gagcactcca acagcggaa atgtgacagc acccttagtg	240
gatgagggag ctcccggcaa gcaggctgcc gcgcagcccc acacggagat ccagaagga	300
accacagctg aagaagcagg cattggagac acccccagcc tggaagacga agctgctggt	360
cacgtgacct aagctcgcac ggtcagtaaa agcaaagacg ggactggaag cgatgacaaa	420
aaagccaagg gggctgatgg taaaacgaag atcgccacac cgcggggagc agcccctcca	480
ggccagaagg gccaggccaa cgccaccagg attccagcaa aaaccccgcc cgctccaaag	540
acaccacca gctctggtga acctccaaaa tcaggggatc gcagcggcta cagcagcccc	600

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ggctccccag	gcactcccgg	cagccgctcc	cgcaccccg	cccttccaac	cccaccacc	660
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agccgcctgc	agacagcccc	cgtgcccatt	ccagacctga	agaatgtcaa	gtccaagatc	780
ggctccactg	agaacctgaa	gcaccagccg	ggagtcggga	aggtgcagat	aattaataag	840
aagctggatc	ttagcaacgt	ccagtccaag	tgtgggtcaa	aggataatat	caaacacgtc	900
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ggggacacgt	ctccacggca	tctcagcaat	gtctcctcca	ccggcagcat	cgacatggta	1260
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ttgtga						1326

<210> 48
 <211> 1326
 <212> DNA
 <213> Homo sapiens

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ggggacagga	aagatcaggg gggctacacc atgcaccaag accaagaggg tgacacggac 120
gctggcctga	aagaatctcc cctgcagacc cccactgagg acggatctga ggaaccgggc 180
tctgaaacct	ctgatgctaa gagcactcca acagcggaag atgtgacagc acccttagtg 240
gatgagggag	ctcccggcaa gcaggctgcc gcgcagcccc acacggagat cccagaagga 300
accacagtct	aagaagcagg cattggagac acccccagcc tggaagacga agctgctggg 360
cacgtgacct	aagctcgcat ggtcagtaaa agcaaagacg ggactggaag cgatgacaaa 420
aaagccaagg	gggctgatgg taaaacgaag atcgccacac cgcggggagc agcccctcca 480
ggccagaagg	gccaggccaa cgccaccagg attccagcaa aaaccccgcc cgctccaaag 540
acaccacca	gctctggtga acctccaaaa tcaggggata gcagcggcta cagcagcccc 600
ggctccccag	gcactcccgg cagccgctcc cgcaccccg
cgggagccca	agaaggtggc agtgggtccg actccaccca agtcgccg
agccgcctgc	agacagcccc cgtgcccatt ccagacctga agaatgtcaa gtccaagatc 780
ggctccactg	agaacctgaa gcaccagccg ggaggcggga aggtgcagat aattaataag 840
aagctggatc	ttagcaacgt ccagtccaag tgtgggtcaa aggataatat caaacacgtc 900
ccgggaggcg	gcagtgtgca aatagtctac aaaccagttg acctgagcaa ggtgacctcc 960
aagtgtggct	cattaggcaa catccatcat aaaccaggag gtggccagat ggaagtaaaa 1020

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accacacgtcc ctggcggagg aaataaaaag attgaaaccc acaagctgac cttccgcgag	1140
aacgccaaag ccaagacaga ccacggggcg gagatcgtgt acaagtcgcc agtggtgtct	1200
ggggacacgt ctccacggca tctcagcaat gtctcctcca ccggcagcat cgacatggta	1260
gactcgcccc agctcgccac gctagctgac gaggtgtctg cctccctggc caagcagggg	1320
ttgtga	1326

<210> 49
 <211> 1326
 <212> DNA
 <213> Homo sapiens

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ggggacagga aagatcaggg gggctacacc atgcaccaag accaagaggg tgacacggac	120
gctggcctga aagaatctcc cctgcagacc cccactgagg acggatctga ggaaccgggc	180
tctgaaacct ctgatgctaa gagcactcca acagcggaag atgtgacagc acccttagtg	240
gatgagggag ctcccggcaa gcaggctgcc gcgcagcccc acacggagat cccagaagga	300
accacagctg aagaagcagg cattggagac acccccagcc tggaagacga agctgctggt	360
cacgtgacct aagctcgcat ggtcagtaaa agcaaagacg ggactggaag cgatgacaaa	420
aaagccaagg gggctgatgg taaaacgaag atcgccacac cgcggggagc agccccctcca	480
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ggctccccag gcaactccgg cagccgctcc cgcaccccg ccttccaac cccaccacc	660
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agccgcctgc agacagcccc cgtgcccatt ccagacctga agaattgtcaa gtccaagatc	780
ggctccactg agaacctgaa gcaccagccg ggaggcggga aggtgcagat aattaataag	840
aagctggatc ttagcaacgt ccagtcgaag tgtgggtcaa aggataatat caaacacgtc	900
ccgggaggcg gcagtgtgca aatagtctac aaaccagttg acctgagcaa ggtgacctcc	960
aagtgtggct cattaggcaa catccatcat aaaccaggag gtggccagggt ggaagtaaaa	1020
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accacacgtcc ctggcggagg aaataaaaag attgaaaccc acaagctgac cttccgcgag	1140
aacgccaaag ccaagacaga ccacggggcg gagatcgtgt acaagtcgcc agtggtgtct	1200
ggggacacgt ctccatggca tctcagcaat gtctcctcca ccggcagcat cgacatggta	1260
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ttgtga	1326

<210> 50
 <211> 717

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<212> DNA
 <213> *Aequorea victoria*

<400> 50
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 gatgttaatg gtcacaaatt ttctgtctcc ggtgaagggt aaggatgatgc tacttacggg 120
 aaattgacct taaaatttat ttgtactact ggtaaattgc cagttccatg gccaacctta 180
 gtcactactt tcggttatgg tgttcaatgt tttgctagat acccagatca tatgaaacaa 240
 catgactttt tcaagtctgc catgccagaa ggttatgttc aagaaagaac tatttttttc 300
 aaagatgacg gtaactacaa gaccagagct gaagtcaagt ttgaagggtga taccttagtt 360
 aatagaatcg aattaaagg tattgatttt aaagaagatg gtaacatttt aggtcacaaa 420
 ttggaataca actataactc tcacaatgtt tacatcatgg ctgacaaaca aaagaatggg 480
 atcaaagtta acttcaaaat tagacacaac attgaagatg gttctgttca attagctgac 540
 cattatcaac aaaatactcc aattgggtgat ggtccagtct tgttaccaga caaccattac 600
 ttatccactc aatctgcctt atccaaagat ccaaacgaaa agagagacca catgggtcttg 660
 ttagaatttg ttactgctgc tgggtattacc catgggtatgg atgaattgta caaataa 717

<210> 51
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic nucleotide

<400> 51
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<210> 52
 <211> 616
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> synthetic nucleotide

<400> 52
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 tattgaagta cggattagaa gccgccgagc gggtgacagc cctccgaagg aagactctcc 120
 tccgtgcgtc ctcgtcttca ccggtcgcgt tcctgaaacg cagatgtgcc tcgcgccgca 180
 ctgctccgaa caataaagat tctacaatac tagcttttat gggttatgaag aggaaaaatt 240
 ggcagtaacc tggccccaca aaccttcaaa tgaacgaatc aaattaacaa ccataggatg 300
 ataatgcgat tagtttttta gccttatttc tggggtaatt aatcagcgaa gcgatgattt 360
 ttgatctcga cctcgagcag atccgccagg cgtgtatata gcgtggatgg ccaggcaact 420
 ttagtgctga cacatacagg catatatata tgtgtgagac gacacatgat catatggcat 480
 gcatgtgctc tgtatgtata taaaactctt gttttcttct tttctctaaa tattctttcc 540

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ttatacatta ggtcctttgt agcataaatt actatacttc tatagacacg caaacacaaa	600
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<210> 53
 <211> 681
 <212> DNA
 <213> *Saccharomyces cerevisiae*

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tacatgccca aaataggggg cggtgttacac agaatatata acatcgtagg tgtctgggtg	180
aacagtttat tcctggcatc cactaaatat aatggagccc gctttttaag ctggcatcca	240
gaaaaaaaa gaatcccagc accaaaatat tgttttcttc accaaccatc agttcatagg	300
tccattctct tagcgcaact acagagaaca ggggcacaaa caggcaaaaa acgggcacaa	360
cctcaatgga gtgatgcaac ctgcctggag taaatgatga cacaaggcaa ttgaccacg	420
catgtatcta tctcattttc ttacaccttc tattaccttc tgctctctct gatttgga	480
aagctgaaaa aaaaggttga aaccagttcc ctgaaattat tcccctactt gactaataag	540
tatataaaga cggtaggtat tgattgtaat tctgtaaatc ttttcttaa acttcttaaa	600
ttctactttt atagtttagtc ttttttttag ttttaaaaca ccaagaactt agtttcgaat	660
aaacacacat aaacaaacaa a	681

<210> 54
 <211> 4
 <212> PRT
 <213> *Homo sapiens*

<400> 54

Lys Asp Glu Leu
 1

<210> 55
 <211> 4
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 55

His Asp Glu Leu
 1