

SEQUENCE LISTING

<110> GENZYME CORPORATION

<120> BONE-TARGETING ANTIBODIES

<130> 022548.W0012

<140>

<141>

<150> 62/448,763

<151> 2017-01-20

<160> 40

<170> PatentIn version 3.5

<210> 1

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 1

Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp	Asp
1				5						10

<210> 2

<211> 445

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 2

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

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

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

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

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

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

Ala Arg Gly Asp Gly Asn Tyr Ala Leu Asp Ala Met Asp Tyr Trp Gly
100 105 110

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

Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val
130 135 140

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

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

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

Ser Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val Ala His Pro
195 200 205

Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly
210 215 220

Cys Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile
225 230 235 240

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

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

Phe Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Lys
275 280 285

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

Pro Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg
305 310 315 320

Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
325 330 335

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

Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr
355 360 365

Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln
370 375 380

Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asp Thr Asp Gly
385 390 395 400

Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu
405 410 415

Ala Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn
420 425 430

His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys
435 440 445

<210> 3

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 3

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

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

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

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

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

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

Ala Arg Gly Asp Gly Asn Tyr Ala Leu Asp Ala Met Asp Tyr Trp Gly
100 105 110

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

Val Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val
130 135 140

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

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

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

Ser Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val Ala His Pro
195 200 205

Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly
Page 4

210		215		220
Cys 225	Lys	Pro	Cys	Ile 230
			Cys	Thr 235
			Val	Pro 240
			Val	Val 245
			Val	Val 250
			Val	Val 255
			Val	Val 260
			Val	Val 265
			Val	Val 270
			Val	Val 275
			Val	Val 280
			Val	Val 285
			Val	Val 290
			Val	Val 295
			Val	Val 300
			Val	Val 305
			Val	Val 310
			Val	Val 315
			Val	Val 320
			Val	Val 325
			Val	Val 330
			Val	Val 335
			Val	Val 340
			Val	Val 345
			Val	Val 350
			Val	Val 355
			Val	Val 360
			Val	Val 365
			Val	Val 370
			Val	Val 375
			Val	Val 380
			Val	Val 385
			Val	Val 390
			Val	Val 395
			Val	Val 400
			Val	Val 405
			Val	Val 410
			Val	Val 415
			Val	Val 420
			Val	Val 425
			Val	Val 430

His His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys Asp Asp Asp
435 440 445

Asp Asp Asp Asp Asp Asp Asp
450 455

<210> 4

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 4

Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp His Val Gln Leu Gln Gln
1 5 10 15

Ser Gly Pro Glu Leu Val Arg Pro Gly Ala Ser Val Lys Leu Ser Cys
20 25 30

Lys Ala Ser Gly Tyr Ile Phe Ile Thr Tyr Trp Met Asn Trp Val Lys
35 40 45

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Gln Ile Phe Pro Ala
50 55 60

Ser Gly Ser Thr Asn Tyr Asn Glu Met Phe Glu Gly Lys Ala Thr Leu
65 70 75 80

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

Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala Arg Gly Asp Gly Asn
100 105 110

Tyr Ala Leu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr
115 120 125

Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro
130 135 140

Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu Val
 145 150 155 160

Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ser
 165 170 175

Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Asp Leu
 180 185 190

Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro Ser
 195 200 205

Gln Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val
 210 215 220

Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys
 225 230 235 240

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

Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val
 260 265 270

Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp
 275 280 285

Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu Gln Phe
 290 295 300

Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp
 305 310 315 320

Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe
 325 330 335

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

Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys
 355 360 365

Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp
 370 375 380

Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys
 385 390 395 400

Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser
 405 410 415

Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr
 420 425 430

Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser
 435 440 445

Leu Ser His Ser Pro Gly Lys
 450 455

<210> 5
 <211> 465
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 5
 Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp His Val Gln Leu Gln Gln
 1 5 10 15

Ser Gly Pro Glu Leu Val Arg Pro Gly Ala Ser Val Lys Leu Ser Cys
 20 25 30

Lys Ala Ser Gly Tyr Ile Phe Ile Thr Tyr Trp Met Asn Trp Val Lys
 35 40 45

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Gln Ile Phe Pro Ala
 50 55 60

Ser Gly Ser Thr Asn Tyr Asn Glu Met Phe Glu Gly Lys Ala Thr Leu
 65 70 75 80

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

Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala Arg Gly Asp Gly Asn
100 105 110

Tyr Ala Leu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr
115 120 125

Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro
130 135 140

Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu Val
145 150 155 160

Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ser
165 170 175

Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Asp Leu
180 185 190

Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro Ser
195 200 205

Gln Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val
210 215 220

Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile Cys
225 230 235 240

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

Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val Val
260 265 270

Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp
275 280 285

Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu Gln Phe
290 295 300

Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln Asp
305 310 315 320

Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe
325 330 335

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

Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys
355 360 365

Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp
370 375 380

Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys
385 390 395 400

Asn Thr Gln Pro Ile Met Asp Thr Asp Gly Ser Tyr Phe Val Tyr Ser
405 410 415

Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr
420 425 430

Cys Ser Val Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser
435 440 445

Leu Ser His Ser Pro Gly Lys Asp Asp Asp Asp Asp Asp Asp Asp
450 455 460

Asp
465

<210> 6
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 6

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

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ser Gly Gln Pro Pro
35 40 45

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

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

Pro Val Glu Ala Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Asn Asn
85 90 95

Glu Asp Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
100 105 110

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

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

Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln
145 150 155 160

Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
165 170 175

Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
180 185 190

His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro
195 200 205

Ile Val Lys Ser Phe Asn Arg Asn Glu Cys

210

215

<210> 7

<211> 228

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 7

Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asn Ile Val Leu Thr Gln
 1 5 10 15

Ser Pro Ala Ser Leu Ala Val Ser Leu Gly Gln Arg Ala Thr Ile Ser
 20 25 30

Cys Arg Ala Ser Glu Ser Val Asp Ser Tyr Gly Asn Ser Phe Met His
 35 40 45

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

Ala Ser Asn Leu Glu Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly
 65 70 75 80

Ser Arg Thr Asp Phe Thr Leu Thr Ile Asp Pro Val Glu Ala Asp Asp
 85 90 95

Ala Ala Thr Tyr Tyr Cys Gln Gln Asn Asn Glu Asp Pro Leu Thr Phe
 100 105 110

Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala Pro Thr
 115 120 125

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

Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile Asn Val
 145 150 155 160

Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu Asn Ser

165

170

175

Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser Ser Thr
 180 185 190

Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr Thr Cys
 195 200 205

Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser Phe Asn
 210 215 220

Arg Asn Glu Cys
 225

<210> 8

<211> 228

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 8

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

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ser Gly Gln Pro Pro
 35 40 45

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

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

Pro Val Glu Ala Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Asn Asn
 85 90 95

Glu Asp Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
 Page 13

100					105					110					
Ala	Asp	Ala	Ala	Pro	Thr	Val	Ser	Ile	Phe	Pro	Pro	Ser	Ser	Glu	Gln
		115					120					125			
Leu	Thr	Ser	Gly	Gly	Ala	Ser	Val	Val	Cys	Phe	Leu	Asn	Asn	Phe	Tyr
	130					135					140				
Pro	Lys	Asp	Ile	Asn	Val	Lys	Trp	Lys	Ile	Asp	Gly	Ser	Glu	Arg	Gln
145					150					155					160
Asn	Gly	Val	Leu	Asn	Ser	Trp	Thr	Asp	Gln	Asp	Ser	Lys	Asp	Ser	Thr
				165					170					175	
Tyr	Ser	Met	Ser	Ser	Thr	Leu	Thr	Leu	Thr	Lys	Asp	Glu	Tyr	Glu	Arg
			180					185					190		
His	Asn	Ser	Tyr	Thr	Cys	Glu	Ala	Thr	His	Lys	Thr	Ser	Thr	Ser	Pro
		195					200					205			
Ile	Val	Lys	Ser	Phe	Asn	Arg	Asn	Glu	Cys	Asp	Asp	Asp	Asp	Asp	Asp
	210					215					220				
Asp	Asp	Asp	Asp												
225															

<210> 9
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 9
 Gly Gly Gly Gly Ser
 1 5

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 10
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10

<210> 11
<211> 233
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 11
Asn Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ser Gly Gln Pro Pro
35 40 45

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

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

Pro Val Glu Ala Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Asn Asn
85 90 95

Glu Asp Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
100 105 110

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

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

Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln
 145 150 155 160

Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
 165 170 175

Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
 180 185 190

His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro
 195 200 205

Ile Val Lys Ser Phe Asn Arg Asn Glu Cys Gly Gly Gly Gly Ser Asp
 210 215 220

Asp Asp Asp Asp Asp Asp Asp Asp Asp
 225 230

<210> 12

<211> 238

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 12

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

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

Gly Asn Ser Phe Met His Trp Tyr Gln Gln Lys Ser Gly Gln Pro Pro
 35 40 45

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

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

Pro Val Glu Ala Asp Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Asn Asn
85 90 95

Glu Asp Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
100 105 110

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

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

Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln
145 150 155 160

Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr
165 170 175

Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg
180 185 190

His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro
195 200 205

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

Gly Gly Gly Ser Asp Asp Asp Asp Asp Asp Asp Asp Asp
225 230 235

<210> 13
<211> 447
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 13
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

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

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

Gly Gly Val Ile Pro Ile Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe
50 55 60

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

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

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

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

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

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

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

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

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

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

<210> 14
<211> 457
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 14
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

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

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

Gly Gly Val Ile Pro Ile Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe
50 55 60

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Asp Asp Asp Asp Asp Asp Asp Asp Asp
450 455

<210> 15
<211> 215
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 15
Glu Thr 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 Leu Gly Ser Ser
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 Pro 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 Ala Asp Ser Pro
85 90 95

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 16
<211> 457
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 16
Asp Asp Asp Asp Asp Asp Asp Asp Asp Gln Val Gln Leu Val Gln
1 5 10 15

Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys
20 25 30

Lys Ala Ser Gly Tyr Thr Phe Ser Ser Asn Val Ile Ser Trp Val Arg
35 40 45

Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Gly Val Ile Pro Ile
50 55 60

Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe Lys Gly Arg Val Thr Ile
65 70 75 80

Thr Ala Asp Glu Ser Thr Ser Thr Thr Tyr Met Glu Leu Ser Ser Leu
85 90 95

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ser Thr Leu Gly Leu
100 105 110

Val Leu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
115 120 125

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

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

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
165 170 175

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
180 185 190

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
195 200 205

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

Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro
225 230 235 240

Ala Pro Glu Phe Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
245 250 255

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

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

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
290 295 300

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

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
325 330 335

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
370 375 380

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
385 390 395 400

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

Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val
420 425 430

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

Lys Ser Leu Ser Leu Ser Leu Gly Lys
450 455

<210> 17

<211> 467

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 17

Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Gln Val Gln Leu Val Gln
1 5 10 15

Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys
20 25 30

Lys Ala Ser Gly Tyr Thr Phe Ser Ser Asn Val Ile Ser Trp Val Arg
35 40 45

Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Gly Val Ile Pro Ile
50 55 60

Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe Lys Gly Arg Val Thr Ile
65 70 75 80

Thr Ala Asp Glu Ser Thr Ser Thr Thr Tyr Met Glu Leu Ser Ser Leu
85 90 95

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Ser Thr Leu Gly Leu
100 105 110

Val Leu Asp Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
115 120 125

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

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

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
165 170 175

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
180 185 190

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
195 200 205

Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val

210						215						220					
Asp	Lys	Arg	Val	Glu	Ser	Lys	Tyr	Gly	Pro	Pro	Cys	Pro	Pro	Cys	Pro		
225					230					235					240		
Ala	Pro	Glu	Phe	Leu	Gly	Gly	Pro	Ser	Val	Phe	Leu	Phe	Pro	Pro	Lys		
				245					250						255		
Pro	Lys	Asp	Thr	Leu	Met	Ile	Ser	Arg	Thr	Pro	Glu	Val	Thr	Cys	Val		
			260					265					270				
Val	Val	Asp	Val	Ser	Gln	Glu	Asp	Pro	Glu	Val	Gln	Phe	Asn	Trp	Tyr		
		275					280					285					
Val	Asp	Gly	Val	Glu	Val	His	Asn	Ala	Lys	Thr	Lys	Pro	Arg	Glu	Glu		
	290					295					300						
Gln	Phe	Asn	Ser	Thr	Tyr	Arg	Val	Val	Ser	Val	Leu	Thr	Val	Leu	His		
305					310					315					320		
Gln	Asp	Trp	Leu	Asn	Gly	Lys	Glu	Tyr	Lys	Cys	Lys	Val	Ser	Asn	Lys		
				325					330					335			
Gly	Leu	Pro	Ser	Ser	Ile	Glu	Lys	Thr	Ile	Ser	Lys	Ala	Lys	Gly	Gln		
			340					345					350				
Pro	Arg	Glu	Pro	Gln	Val	Tyr	Thr	Leu	Pro	Pro	Ser	Gln	Glu	Glu	Met		
		355					360					365					
Thr	Lys	Asn	Gln	Val	Ser	Leu	Thr	Cys	Leu	Val	Lys	Gly	Phe	Tyr	Pro		
	370					375					380						
Ser	Asp	Ile	Ala	Val	Glu	Trp	Glu	Ser	Asn	Gly	Gln	Pro	Glu	Asn	Asn		
385					390					395					400		
Tyr	Lys	Thr	Thr	Pro	Pro	Val	Leu	Asp	Ser	Asp	Gly	Ser	Phe	Phe	Leu		
				405					410					415			
Tyr	Ser	Arg	Leu	Thr	Val	Asp	Lys	Ser	Arg	Trp	Gln	Glu	Gly	Asn	Val		
			420					425					430				

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

Lys Ser Leu Ser Leu Ser Leu Gly Lys Asp Asp Asp Asp Asp Asp
450 455 460

Asp Asp Asp
465

<210> 18
<211> 225
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 18
Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Glu Thr Val Leu Thr Gln
1 5 10 15

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
20 25 30

Cys Arg Ala Ser Gln Ser Leu Gly Ser Ser Tyr Leu Ala Trp Tyr Gln
35 40 45

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

Arg Ala Pro Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
65 70 75 80

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
85 90 95

Tyr Tyr Cys Gln Gln Tyr Ala Asp Ser Pro Ile Thr Phe Gly Gln Gly
100 105 110

Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
115 120 125

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

Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys
 145 150 155 160

Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu
 165 170 175

Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu
 180 185 190

Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr
 195 200 205

His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
 210 215 220

Cys
 225

<210> 19
 <211> 225
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 19
 Glu Thr 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 Leu Gly Ser Ser
 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 Pro 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 Ala Asp Ser Pro
85 90 95

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys Asp Asp Asp Asp Asp Asp Asp Asp
210 215 220

Asp
225

<210> 20
<211> 235
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 20

Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Glu Thr Val Leu Thr Gln
 1 5 10 15

Ser Pro Gly Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser
 20 25 30

Cys Arg Ala Ser Gln Ser Leu Gly Ser Ser Tyr Leu Ala Trp Tyr Gln
 35 40 45

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

Arg Ala Pro Gly Ile Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr
 65 70 75 80

Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val
 85 90 95

Tyr Tyr Cys Gln Gln Tyr Ala Asp Ser Pro Ile Thr Phe Gly Gln Gly
 100 105 110

Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile
 115 120 125

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

Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys
 145 150 155 160

Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu
 165 170 175

Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu
 180 185 190

Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr
 195 200 205

His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
 210 215 220

Cys Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp
 225 230 235

<210> 21
 <211> 230
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic
 polypeptide"

<400> 21
 Glu Thr 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 Leu Gly Ser Ser
 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 Pro 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 Ala Asp Ser Pro
 85 90 95

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys Gly Gly Gly Gly Ser Asp Asp Asp Asp
210 215 220

Asp Asp Asp Asp Asp Asp
225 230

<210> 22
<211> 235
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 22
Glu Thr 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 Leu Gly Ser Ser
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 Pro 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 Ala Asp Ser Pro
85 90 95

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

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

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

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

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

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

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

Ser Phe Asn Arg Gly Glu Cys Gly Gly Gly Gly Ser Gly Gly Gly Gly
210 215 220

Ser Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp
225 230 235

<210> 23
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 23
caggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc 60
tcctgcaagg cttctggata caccttcagt agcaatgtta tcagctgggt gcgccaggcc 120
cctggacaag ggctcgagt gatggggggg gtcattccta ttgttgatat tgcgaactac 180
gcacagagat tcaagggcag agtcacgatt accgcggacg aatccactag tacaacttac 240

atggagttga gcagcctgag gtctgaggac acggccgtgt attactgtgc gagcacactt	300
ggctctcgcc tggatgctat ggactactgg ggtcagggtta cgttagtac ggtctcgagt	360
gcttccacca agggcccatc cgtcttcccc ctggcgccct gctccaggag cacctccgag	420
agcacagccg ccctgggctg cctgggtcaag gactacttcc ccgaaccggt gacggtgtcg	480
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca	540
ggactctact ccctcagcag cgtgggtgacc gtgccctcca gcagcttggg cacgaagacc	600
tacacctgca acgtagatca caagcccagc aacaccaagg tcgacaagag agttgagtcc	660
aaatatggtc ccccatgccc accatgcccga gcacctgagt tcctgggggg accatcagtc	720
ttcctgttcc ccccaaaacc caaggacact ctcatgatct cccggacccc tgaggtcacg	780
tgcgtgggtg tggacgtgag ccaggaagac cccgaggtcc agttcaactg gtacgtggat	840
ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagttcaa cagcacgtac	900
cgtgtgggtca gcgtcctcac cgtcctgcac caggactggc tgaacggcaa ggagtacaag	960
tgcaaggctc ccaacaaagg cctcccgtcc tccatcgaga aaaccatctc caaagccaaa	1020
gggcagcccc gagagccaca ggtgtacacc ctgcccccat cccaggagga gatgaccaag	1080
aaccaggtca gcctgacctg cctgggtcaaa ggcttctacc ccagcgacat cgccgtggag	1140
tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc	1200
gacggctcct tcttcctcta cagcaggcta accgtggaca agagcaggtg gcaggagggg	1260
aatgtcttct catgctccgt gatgcatgag gctctgcaca accactacac acagaagagc	1320
ctctccctgt ctctggggaa atga	1344

<210> 24

<211> 1374

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 24

gacgacgatg atgacgatga cgacgacgat cagggtgcagc tgggtgcagtc tggggctgag	60
---	----

gtgaagaagc ctgggtcctc ggtgaaggtc tcctgcaagg cttctggata caccttcagt	120
---	-----

agcaatgtta tcagctgggt ggcaggcc cctggacaag ggctcgagt gatggggggg	180
gtcatcccta ttgttgatat tgcgaactac gcacagagat tcaagggcag agtcacgatt	240
accgcggacg aatccactag tacaacttac atggagttga gcagcctgag gtctgaggac	300
acggccgtgt attactgtgc gagcacactt ggtctcgtcc tggatgctat ggactactgg	360
ggtcagggtta cgttagtac ggtctcgagt gcttcacca agggcccatc cgtcttcccc	420
ctggcgccct gctccaggag cacctccgag agcacagccg ccctgggctg cctggtcaag	480
gactacttcc ccgaaccggt gacggtgtcg tggaactcag gcgccctgac cagcggcgtg	540
cacaccttcc cggctgtcct acagtcctca ggactctact ccctcagcag cgtggtgacc	600
gtgccctcca gcagcttggg cacgaagacc tacacctgca acgtagatca caagcccagc	660
aacaccaagg tcgacaagag agttgagtcc aaatatggtc ccccatgccc accatgccc	720
gcacctgagt tcctgggggg accatcagtc ttcctgttcc cccaaaacc caaggacact	780
ctcatgatct cccggacccc tgaggtcacg tgcgtgggtg tggacgtgag ccaggaagac	840
cccgagggtc agttcaactg gtacgtggat ggcgtggagg tgcataatgc caagacaaag	900
ccgcgggagg agcagttcaa cagcacgtac cgtgtggtca gcgtcctcac cgtcctgcac	960
caggactggc tgaacggcaa ggagtacaag tgcaaggtct ccaacaaagg cctcccgtcc	1020
tccatcgaga aaaccatctc caaagccaaa gggcagcccc gagagccaca ggtgtacacc	1080
ctgcccccat cccaggagga gatgaccaag aaccagggtc gcctgacctg cctggtcaaa	1140
ggcttctacc ccagcgacat cgccgtggag tgggagagca atgggcagcc ggagaacaac	1200
tacaagacca cgcctcccgt gctggactcc gacggctcct tcttcctcta cagcaggcta	1260
accgtggaca agagcagggt gcaggagggg aatgtcttct catgctccgt gatgcatgag	1320
gctctgcaca accactacac acagaagagc ctctccctgt ctctggggaa atga	1374

<210> 25

<211> 1374

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 25

cagggtgcagc tggtgcagtc tggggctgag gtgaagaagc ctgggtcctc ggtgaaggtc	60
--	----

tcctgcaagg cttctggata caccttcagt agcaatgtta tcagctgggt gcgccaggcc	120
cctggacaag ggctcgagt gatggggggg gtcaccccta ttgttgatat tgcgaactac	180
gcacagagat tcaagggcag agtcacgatt accgcggacg aatccactag tacaacttac	240
atggagttga gcagcctgag gtctgaggac acggccgtgt attactgtgc gagcacactt	300
ggctctgtcc tggatgctat ggactactgg ggtcagggta cgttagtgac ggtctcgagt	360
gcttccacca agggcccatc cgtcttcccc ctggcgccct gctccaggag cacctccgag	420
agcacagccg ccctgggctg cctgggtcaag gactacttcc ccgaaccggt gacggtgtcg	480
tggaactcag gcgccctgac cagcggcgtg cacaccttcc cggctgtcct acagtcctca	540
ggactctact ccctcagcag cgtggtgacc gtgccctcca gcagcttggg cacgaagacc	600
tacacctgca acgtagatca caagcccagc aacaccaagg tcgacaagag agttgagtcc	660
aaatatggtc ccccatgccc accatgcccga gcacctgagt tcctgggggg accatcagtc	720
ttcctgttcc ccccaaaacc caaggacact ctcagtatct cccggacccc tgaggtcacg	780
tgctgtgggg tggacgtgag ccaggaagac cccgaggtcc agttcaactg gtacgtggat	840
ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagttcaa cagcacgtac	900
cgtgtgggtca gcgtcctcac cgtcctgcac caggactggc tgaacggcaa ggagtacaag	960
tgcaagggtct ccaacaaagg cctcccgtcc tccatcgaga aaaccatctc caaagccaaa	1020
gggcagcccc gagagccaca ggtgtacacc ctgcccccat cccaggagga gatgaccaag	1080
aaccagggtca gcctgacctg cctgggtcaaa ggcttctacc ccagcgacat cgccgtggag	1140
tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc	1200
gacggctcct tcttcctcta cagcaggcta accgtggaca agagcaggtg gcaggagggg	1260
aatgtcttct catgctccgt gatgcatgag gctctgcaca accactacac acagaagagc	1320
ctctccctgt ctctggggaa agacgacgat gatgacgatg acgacgacga ttga	1374

<210> 26

<211> 1404

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 26

gacgacgatg atgacgatga cgacgacgat caggtgcagc tgggtgcagtc tggggctgag	60
gtgaagaagc ctgggtcctc ggtgaaggtc tcctgcaagg cttctggata caccttcagt	120
agcaatgtta tcagctgggt gcgccaggcc cctggacaag ggctcgagtg gatggggggg	180
gtcatcccta ttgttgatat tgcgaactac gcacagagat tcaagggcag agtcacgatt	240
accgcggacg aatccactag tacaacttac atggagttga gcagcctgag gtctgaggac	300
acggccgtgt attactgtgc gagcacactt ggtctcgtcc tggatgctat ggactactgg	360
ggtcagggta cgttagtgac ggtctcgagt gcttcacca agggcccatc cgtcttcccc	420
ctggcgccct gctccaggag cacctccgag agcacagccg ccctgggctg cctggtcaag	480
gactacttcc ccgaaccggt gacggtgtcg tggaactcag gcgccctgac cagcggcgtg	540
cacaccttcc cggctgtcct acagtcctca ggactctact ccctcagcag cgtggtgacc	600
gtgccctcca gcagcttggg cacgaagacc tacacctgca acgtagatca caagcccagc	660
aacaccaagg tcgacaagag agttgagtcc aaatatggtc ccccatgccc accatgccc	720
gcacctgagt tcctgggggg accatcagtc ttctgtttcc ccccaaaacc caaggacact	780
ctcatgatct cccggacccc tgaggtcacg tgcgtggtgg tggacgtgag ccaggaagac	840
cccgaggtcc agttcaactg gtacgtggat ggcgtggagg tgcataatgc caagacaaag	900
ccgcggggagg agcagttcaa cagcacgtac cgtgtggtca gcgtcctcac cgtcctgcac	960
caggactggc tgaacggcaa ggagtacaag tgcaaggctc ccaacaaagg cctcccgtcc	1020
tccatcgaga aaaccatctc caaagccaaa gggcagcccc gagagccaca ggtgtacacc	1080
ctgcccccat cccaggagga gatgaccaag aaccagggtca gcctgacctg cctggtcaaa	1140
ggcttctacc ccagcgacat cgccgtggag tgggagagca atgggcagcc ggagaacaac	1200
tacaagacca cgcctcccggt gctggactcc gacggctcct tcttctctta cagcaggcta	1260
accgtggaca agagcagggtg gcaggagggg aatgtcttct catgctccgt gatgcatgag	1320
gctctgcaca accactacac acagaagagc ctctccctgt ctctggggaa agacgacgat	1380
gatgacgatg acgacgacga ttga	1404

<210> 27

<211> 648

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 27

gaaacggtac tcacgcagtc tccaggtacc ctgtctttgt ctccagggga aagagccacc	60
ctctcctgca gggccagtca gagtcttggc agcagctact tagcctggta tcagcagaaa	120
cctggtcagg ctcccaggct cctcatctat ggtgcatcca gcagggcacc tggcatccca	180
gacaggttca gtggcagtgg gtctggtacc gacttcactc tcaccatcag ccgactggag	240
cctgaagatt ttgcagttta ttactgtcag cagtatgctg actcaccgat caccttcggc	300
caagggaacac gactggagat taaacgtacg gtggctgcac catctgtctt catcttcccg	360
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc	420
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc	480
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg	540
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag	600
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgtttag	648

<210> 28

<211> 678

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 28

gacgacgatg atgacgatga cgacgacgat gaaacggtac tcacgcagtc tccaggtacc	60
ctgtctttgt ctccagggga aagagccacc ctctcctgca gggccagtca gagtcttggc	120
agcagctact tagcctggta tcagcagaaa cctggtcagg ctcccaggct cctcatctat	180
ggtgcatcca gcagggcacc tggcatccca gacaggttca gtggcagtgg gtctggtacc	240
gacttcactc tcaccatcag ccgactggag cctgaagatt ttgcagttta ttactgtcag	300
cagtatgctg actcaccgat caccttcggc caagggaacac gactggagat taaacgtacg	360
gtggctgcac catctgtctt catcttcccg ccatctgatg agcagttgaa atctggaact	420

gcctctgttg tgtgcctgct gaataacttc tatcccagag aggccaaagt acagtggaag	480
gtggataacg ccctccaatc gggtaactcc caggagagtg tcacagagca ggacagcaag	540
gacagcacct acagcctcag cagcaccctg acgctgagca aagcagacta cgagaaacac	600
aaagtctacg cctgcgaagt cacccatcag ggcctgagct cgcccgtcac aaagagcttc	660
aacaggggag agtgttag	678

<210> 29
 <211> 678
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 29	
gaaacggtac tcacgcagtc tccaggtacc ctgtctttgt ctccagggga aagagccacc	60
ctctcctgca gggccagtca gagtcttggc agcagctact tagcctggta tcagcagaaa	120
cctggtcagg ctcccaggct cctcatctat ggtgcatcca gcagggcacc tggcatccca	180
gacaggttca gtggcagtgg gtctggtacc gacttcactc tcaccatcag ccgactggag	240
cctgaagatt ttgcagttta ttactgtcag cagtatgctg actcaccgat caccttcggc	300
caagggacac gactggagat taaacgtacg gtggctgcac catctgtctt catcttcccg	360
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc	420
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc	480
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg	540
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt cacccatcag	600
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgtgacga cgatgatgac	660
gatgacgacg acgattag	678

<210> 30
 <211> 708
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic

polynucleotide"

<400> 30

gacgacgatg atgacgatga cgacgacgat gaaacggtac tcacgcagtc tccaggtacc	60
ctgtctttgt ctccagggga aagagccacc ctctcctgca gggccagtca gagtcttggc	120
agcagctact tagcctggta tcagcagaaa cctggtcagg ctcccaggct cctcatctat	180
ggtgcatcca gcagggcacc tggcatccca gacaggttca gtggcagtgg gtctggtacc	240
gacttcactc tcaccatcag ccgactggag cctgaagatt ttgcagttta ttactgtcag	300
cagtatgctg actcaccgat caccttcggc caaggacac gactggagat taaacgtacg	360
gtggctgcac catctgtctt catcttcccg ccatctgatg agcagttgaa atctggaact	420
gcctctgttg tgtgcctgct gaataacttc tatcccagag aggccaaagt acagtggaag	480
gtggataacg ccctccaatc gggtaactcc caggagagtgc tcacagagca ggacagcaag	540
gacagcacct acagcctcag cagcacctg acgctgagca aagcagacta cgagaaacac	600
aaagtctacg cctgcgaagt caccatcag ggcctgagct cgcccgtcac aaagagcttc	660
aacaggggag agtgtgacga cgatgatgac gatgacgacg acgattag	708

<210> 31

<211> 693

<212> DNA

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 31

gaaacggtac tcacgcagtc tccaggtacc ctgtctttgt ctccagggga aagagccacc	60
ctctcctgca gggccagtca gagtcttggc agcagctact tagcctggta tcagcagaaa	120
cctggtcagg ctcccaggct cctcatctat ggtgcatcca gcagggcacc tggcatccca	180
gacaggttca gtggcagtgg gtctggtacc gacttcactc tcaccatcag ccgactggag	240
cctgaagatt ttgcagttta ttactgtcag cagtatgctg actcaccgat caccttcggc	300
caaggacac gactggagat taaacgtacg gtggctgcac catctgtctt catcttcccg	360
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc	420
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc	480

caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg	540
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag	600
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgtggcgg aggcggcagc	660
gacgacgatg atgacgatga cgacgacgat tag	693

<210> 32
 <211> 708
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 32	
gaaacggtac tcacgcagtc tccaggtacc ctgtctttgt ctccagggga aagagccacc	60
ctctcctgca gggccagtc gagtcttggc agcagctact tagcctggta tcagcagaaa	120
cctggtcagg ctcccaggct cctcatctat ggtgcatcca gcagggcacc tggcatccca	180
gacaggttca gtggcagtg gtctggtacc gacttcactc tcaccatcag ccgactggag	240
cctgaagatt ttgcagttta ttactgtcag cagtatgctg actcaccgat caccttcggc	300
caagggaac gactggagat taaacgtacg gtggctgcac catctgtctt catcttccc	360
ccatctgatg agcagttgaa atctggaact gcctctgttg tgtgcctgct gaataacttc	420
tatcccagag aggccaaagt acagtggaag gtggataacg ccctccaatc gggtaactcc	480
caggagagtg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg	540
acgctgagca aagcagacta cgagaaacac aaagtctacg cctgcgaagt caccatcag	600
ggcctgagct cgcccgtcac aaagagcttc aacaggggag agtgtggcgg aggcggcagc	660
ggcggaggcg gcagcgacga cgatgatgac gatgacgacg acgattag	708

<210> 33
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <221> source
 <223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 33
Ser Asn Val Ile Ser
1 5

<210> 34
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 34
Gly Val Ile Pro Ile Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe Lys
1 5 10 15

Gly

<210> 35
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 35
Thr Leu Gly Leu Val Leu Asp Ala Met Asp Tyr
1 5 10

<210> 36
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 36
Arg Ala Ser Gln Ser Leu Gly Ser Ser Tyr Leu Ala
1 5 10

<210> 37

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 37
Gly Ala Ser Ser Arg Ala Pro
1 5

<210> 38
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 38
Gln Gln Tyr Ala Asp Ser Pro Ile Thr
1 5

<210> 39
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 39
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15

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

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

Gly Gly Val Ile Pro Ile Val Asp Ile Ala Asn Tyr Ala Gln Arg Phe
50 55 60

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 40

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 40

Glu Thr 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 Leu Gly Ser Ser
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 Pro 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 Ala Asp Ser Pro
85 90 95

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