

SEQUENCE LISTING

<110> HOUHOU, LEILA
 PETREMANN, MATHIEU
 HOLLANDE, FREDERIC
 JOUBERT, DOMINIQUE
 <120> PROPHYLAXIS OF COLORECTAL AND GASTROINTESTINAL CANCER
 <130> 382657-004WO
 <150> 61/317,245
 <151> 2010-04-24
 <160> 106
 <170> PatentIn version 3.5
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 Gly Tyr Ile Phe Thr Ser Tyr Trp
 1 5
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 Thr Arg Arg Asp Ser Pro Gln Tyr
 1 5
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 Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr
 1 5 10
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 Lys Val Ser
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 <211> 9
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Phe Gln Gly Ser His Val Pro Phe Thr
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Gly Tyr Thr Phe Ser Ser Ser Trp
1           5
<210> 8
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1           5
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Ala Thr Asp Gly Asn Tyr Asp Trp Phe Ala Tyr
1           5           10
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1           5           10
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Ser Gln Ser Thr His Val Pro Pro Thr
1           5
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Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Ile Phe Thr Ser Tyr
           20           25           30

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

<210> 13

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<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 13

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

<210> 14

<211> 118

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<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 14

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 1 5 10 15
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 20 25 30
 Trp Ile Glu Trp Leu Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
 35 40 45
 Gly Glu Phe Leu Pro Gly Ser Gly Ser Thr Asp Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser Ser Asp Thr Ala Tyr
 65 70 75 80
 Met Leu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
 85 90 95
 Ala Thr Asp Gly Asn Tyr Asp Trp Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ala
 115

<210> 15

<211> 112

<212> PRT

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<223> Description of Artificial Sequence: Synthetic polypeptide
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      20      25      30
Ser Gly Val Thr Tyr Leu His Trp Tyr Leu Gln Lys Pro Gly Gln Ser
      35      40      45
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
      50      55      60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
      85      90      95
Thr His Val Pro Pro Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
      100      105      110

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<210> 16

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<222> (1)..(345)

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1      5      10      15
tcc gtg aag atg tcc tgc aag gct tct ggc tac atc ttt acc agc tac      96
Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Ile Phe Thr Ser Tyr
      20      25      30
tgg gta cac tgg gtt aaa cag agg cct gga cag ggt cta gaa tgg att      144
Trp Val His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
      35      40      45
ggg ggt ttt tat cct gga aat agt gat tct agg tac aac cag aaa ttc      192
Gly Gly Phe Tyr Pro Gly Asn Ser Asp Ser Arg Tyr Asn Gln Lys Phe
      50      55      60
aag ggc aag gcc aca ctg act gca gtc aca tcc gcc agt act gcc tac      240
Lys Gly Lys Ala Thr Leu Thr Ala Val Thr Ser Ala Ser Thr Ala Tyr
65      70      75      80
atg gac ctc agc agc ctg aca aat gag gac tct gcg gtc tat ttc tgt      288
Met Asp Leu Ser Ser Leu Thr Asn Glu Asp Ser Ala Val Tyr Phe Cys
      85      90      95
aca aga aga gat agt ccc cag tac tgg ggc caa ggc acc act ctc aca      336
Thr Arg Arg Asp Ser Pro Gln Tyr Trp Gly Gln Gly Thr Thr Leu Thr
      100      105      110
gtc tcc tca      345
Val Ser Ser
      115

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<210> 17

<211> 336

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> CDS

<222> (1)..(336)

<400> 17

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Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1      5      10      15
gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt      96
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20      25      30
aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct      144
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35      40      45
cca aag ctc ctg atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca      192
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50      55      60
gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc      240
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
agc aga ctg gag gct gag gat ctg gga gtt tat tac tgc ttt caa ggt      288
Ser Arg Leu Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85      90      95
tca cat gtt ccg ttc acg ttc gga ggg ggg acc aag ctg gaa ata aaa      336
Ser His Val Pro Phe Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100      105      110

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Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly Ala
1      5      10      15
tca gtg aag ata tcc tgc aag gct act ggc tac aca ttc agt agc tcc      96
Ser Val Lys Ile Ser Cys Lys Ala Thr Gly Tyr Thr Phe Ser Ser Ser
20      25      30
tgg ata gag tgg tta aaa cag agg cct gga cat ggc ctt gag tgg att      144
Trp Ile Glu Trp Leu Lys Gln Arg Pro Gly His Gly Leu Glu Trp Ile
35      40      45
gga gag ttt tta cct gga agt ggt agt aca gac tac aat gag aag ttc      192
Gly Glu Phe Leu Pro Gly Ser Gly Ser Thr Asp Tyr Asn Glu Lys Phe
50      55      60
aag ggc aag gcc aca ttc act gca gac aca tcc tcc gac aca gcc tac      240
Lys Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser Ser Asp Thr Ala Tyr
65      70      75      80
atg cta ctc agc agc ctg aca tct gag gac tct gcc gtc tat tac tgt      288
Met Leu Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85      90      95
gca act gat ggt aat tat gac tgg ttt gct tac tgg ggc caa ggg act      336
Ala Thr Asp Gly Asn Tyr Asp Trp Phe Ala Tyr Trp Gly Gln Gly Thr
100      105      110
ctg gtc act gtc tct gca
Leu Val Thr Val Ser Ala
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<210> 19
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<212> DNA
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<221> CDS

<222> (1)..(336)

<400> 19

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1			5						10					15		
gat	caa	gcc	tcc	atc	tct	tgc	aga	tct	agt	cag	agc	ctt	gta	cac	agt	96
Asp	Gln	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Val	His	Ser	
		20						25					30			
agt	gga	gtc	acc	tat	tta	cat	tgg	tac	ctg	cag	aag	cca	ggc	cag	tct	144
Ser	Gly	Val	Thr	Tyr	Leu	His	Trp	Tyr	Leu	Gln	Lys	Pro	Gly	Gln	Ser	
		35					40					45				
cca	aag	ctc	ctg	atc	tac	aaa	ggt	tcc	aac	cga	ttt	tct	ggg	gtc	cca	192
Pro	Lys	Leu	Leu	Ile	Tyr	Lys	Val	Ser	Asn	Arg	Phe	Ser	Gly	Val	Pro	
	50					55				60						
gac	agg	ttc	agt	ggc	agt	gga	tca	ggg	aca	gat	ttc	aca	ctc	aag	atc	240
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	
65				70					75					80		
agc	aga	gtg	gag	gct	gag	gat	ctg	gga	ggt	tat	ttc	tgc	tct	caa	agt	288
Ser	Arg	Val	Glu	Ala	Glu	Asp	Leu	Gly	Val	Tyr	Phe	Cys	Ser	Gln	Ser	
			85					90						95		
aca	cat	ggt	cct	ccc	acg	ttc	ggc	tcg	ggg	aca	aag	ttg	gaa	ata	aaa	336
Thr	His	Val	Pro	Pro	Thr	Phe	Gly	Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys	
			100					105					110			

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<211> 80

<212> PRT

<213> Homo sapiens

<400> 20

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

<210> 21

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 21

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala	
1				5					10					15		
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ile	Phe	Thr	Ser	Tyr	
			20					25					30			
Trp	Val	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Arg	Leu	Glu	Trp	Met	
		35					40					45				
Gly	Gly	Phe	Tyr	Pro	Gly	Asn	Ser	Asp	Ser	Arg	Tyr	Ser	Gln	Lys	Phe	
	50					55				60						
Gln	Gly	Arg	Val	Thr	Ile	Thr	Arg	Asp	Thr	Ser	Ala	Ser	Thr	Ala	Tyr	
65				70					75					80		
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	
			85					90						95		
Thr	Arg	Arg	Asp	Ser	Pro	Gln	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	
			100					105					110			

Val Ser Ser

115
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 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
 20 25 30
 Asn Gly Asn Thr Tyr Leu Glu Trp Phe Gln Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Arg Arg Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
 85 90 95
 Ser His Val Pro Phe Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110
 <210> 23
 <211> 118
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 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 23
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Ser Ser
 20 25 30
 Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45
 Gly Ile Phe Leu Pro Gly Ser Gly Ser Thr Asp Tyr Ala Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Thr Asp Gly Asn Tyr Asp Trp Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ser
 115
 <210> 24
 <211> 112
 <212> PRT
 <213> Artificial Sequence
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 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 24
 Asp Ile Val Met Thr Gln Thr Pro Leu Ser Leu Ser Val Thr Pro Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Val His Ser
 20 25 30
 Ser Gly Val Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile

65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ser Gln Ser
 85 90 95
 Thr His Val Pro Pro Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 25

<211> 14

<212> PRT

<213> Homo sapiens

<400> 25

Ser Trp Lys Pro Arg Ser Gln Gln Pro Asp Ala Pro Leu Gly

1 5 10

<210> 26

<211> 16

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

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<221> MOD_RES

<222> (15)..(15)

<223> Ahx

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<210> 27

<211> 26

<212> PRT

<213> Homo sapiens

<400> 27

Gln Gly Pro Trp Leu Glu Glu Glu Glu Glu Ala Tyr Gly Trp Met Asp

1 5 10 15

Phe Gly Arg Arg Ser Ala Glu Asp Glu Asn

20 25

<210> 28

<211> 5

<212> PRT

<213> Homo sapiens

<400> 28

Asp Ala Pro Leu Gly

1 5

<210> 29

<211> 6

<212> PRT

<213> Homo sapiens

<400> 29

Pro Asp Ala Pro Leu Gly

1 5

<210> 30

<211> 7

<212> PRT

<213> Homo sapiens

<400> 30

Pro Arg Ser Gln Gln Pro Asp

1 5

<210> 31

<211> 9

<212> PRT

<213> Homo sapiens

<400> 31

Trp Lys Pro Arg Ser Gln Gln Pro Asp

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1                5
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<213> Homo sapiens
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Phe Gly Arg Arg
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Met Asp Phe Gly Arg
1                5
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<400> 35
Ala Glu Asp Glu Asn
1                5
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<211> 8
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<213> Homo sapiens
<400> 36
Gly Trp Met Asp Phe Gly Arg Arg
1                5
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<400> 37
Gly Phe Thr Phe Thr Thr Tyr Ala
1                5
<210> 38
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Gly Phe Ile Phe Ser Ser Tyr Gly
1                5
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<400> 39

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Gly Tyr Thr Phe Thr Ser Tyr Tyr

1 5

<210> 40

<211> 9

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 40

Gly Tyr Ser Ile Thr Ser Asp Tyr Ala

1 5

<210> 41

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 41

Ile Ser Ser Gly Gly Thr Tyr Thr

1 5

<210> 42

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 42

Ile Asn Thr Phe Gly Asp Arg Thr

1 5

<210> 43

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 43

Ile Asn Pro Ser Asn Gly Gly Thr

1 5

<210> 44

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 44

Ile Ser Phe Ser Gly Tyr Thr

1 5

<210> 45

<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 45

Ala Thr Gln Gly Asn Tyr Ser Leu Asp Phe

1 5 10

<210> 46

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide
 <400> 46

Ala Arg Gly Thr Gly Thr Tyr
 1 5

<210> 47

<211> 10

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide
 <400> 47

Thr Arg Gly Gly Tyr Tyr Pro Phe Asp Tyr
 1 5 10

<210> 48

<211> 14

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide
 <400> 48

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

<210> 49

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide
 <400> 49

Lys Ser Leu Arg His Thr Lys Gly Ile Thr Phe
 1 5 10

<210> 50

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide
 <400> 50

Gln Ser Leu Leu Asp Ser Asp Gly Lys Thr Tyr
 1 5 10

<210> 51

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide
 <400> 51

Ser Gln His Arg Thr Tyr Thr
 1 5

<210> 52

<211> 3

<212> PRT

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<223> Description of Artificial Sequence: Synthetic peptide
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Gln Met Ser
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<210> 53

<211> 3

<212> PRT

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<213> Artificial Sequence
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<400> 53
Leu Val Ser
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<400> 54
Val Lys Lys Asp Gly Ser His
1          5
<210> 55
<211> 9
<212> PRT
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<400> 55
Ala Gln Asn Leu Glu Leu Pro Leu Thr
1          5
<210> 56
<211> 9
<212> PRT
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<223> Description of Artificial Sequence: Synthetic peptide
<400> 56
Trp Gln Gly Thr His Phe Pro Gln Thr
1          5
<210> 57
<211> 9
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<223> Description of Artificial Sequence: Synthetic peptide
<400> 57
Trp Gln Gly Thr His Ser Pro Tyr Thr
1          5
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<223> Description of Artificial Sequence: Synthetic peptide
<400> 58
Gly Val Gly Asp Ala Ile Lys Gly Gln Ser Val Phe Val
1          5          10
<210> 59
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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1          5          10          15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Thr Tyr

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<210> 60
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<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic polypeptide
<400> 60
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1          5          10          15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
          20          25          30
Gly Met Ser Trp Val Arg Gln Ser Pro Asp Arg Arg Leu Glu Leu Val
          35          40          45
Ala Ser Ile Asn Thr Phe Gly Asp Arg Thr Tyr Tyr Pro Asp Ser Val
          50          55          60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65          70          75          80
Leu Gln Met Thr Ser Leu Lys Ser Glu Asp Thr Ala Ile Tyr Tyr Cys
          85          90          95
Ala Arg Gly Thr Gly Thr Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
          100          105          110
Ser Ser

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<210> 61
<211> 117
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polypeptide
<400> 61
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
1          5          10          15
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
          20          25          30
Tyr Met Tyr Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
          35          40          45
Gly Glu Ile Asn Pro Ser Asn Gly Gly Thr Asn Phe Asn Glu Lys Phe
          50          55          60
Lys Ser Lys Ala Thr Leu Thr Val Asp Lys 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
Thr Arg Gly Gly Tyr Tyr Pro Phe Asp Tyr Trp Gly Gln Gly Thr Thr
          100          105          110
Leu Thr Val Ser Ser
          115
<210> 62
<211> 121

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<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 62

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Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1      5      10      15
Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp
20      25      30
Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp
35      40      45
Met Gly Tyr Ile Ser Phe Ser Gly Tyr Thr Ser Tyr Asn Pro Ser Leu
50      55      60
Lys Ser Arg Ile Ser Val Thr Arg Asp Thr Ser Arg Asn Gln Phe Phe
65      70      75      80
Leu Gln Leu Thr Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys
85      90      95
Ala Arg Glu Val Asn Tyr Gly Asp Ser Tyr His Phe Asp Tyr Trp Gly
100     105     110
Gln Gly Thr Ile Val Thr Val Ser Ser
115     120

```

<210> 63

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 63

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Asp Ile Val Met Thr Gln Ala Ala Ser Ser Asn Pro Val Thr Leu Gly
1      5      10      15
Thr Ser Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Arg His Thr
20      25      30
Lys Gly Ile Thr Phe Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35      40      45
Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Leu Ala Ser Gly Val Pro
50      55      60
Asp Arg Phe Ser Ser Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile
65      70      75      80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Ala Gln Asn
85      90      95
Leu Glu Leu Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100     105     110

```

<210> 64

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 64

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Asp Val Val Leu Thr Gln Thr Pro Leu Thr Leu Ser Val Thr Ile Gly
1      5      10      15
Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Asp Ser
20      25      30
Asp Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Arg Pro Gly Gln Ser
35      40      45
Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50      55      60
Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Trp Gln Gly
85      90      95

```

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

<210> 65

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 65

Asp Val Val Met Thr Gln Thr Pro Leu Thr Leu Ser Val Thr Ile Gly
 1 5 10 15
 Arg Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Asp Ser
 20 25 30
 Asp Gly Lys Thr Tyr Leu Tyr Trp Leu Leu Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Lys Arg Leu Ile Tyr Leu Val Ser Glu Leu Asp Ser Gly Val Pro
 50 55 60
 Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Trp Gln Gly
 85 90 95
 Thr His Ser Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 66

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 66

Gln Leu Ala Leu Thr Gln Ser Ser Ser Ala Ser Phe Ser Leu Gly Ala
 1 5 10 15
 Ser Ala Lys Leu Thr Cys Thr Leu Ser Ser Gln His Arg Thr Tyr Thr
 20 25 30
 Ile Glu Trp Tyr Gln Gln Gln Ser Leu Lys Pro Pro Lys Tyr Val Met
 35 40 45
 Glu Val Lys Lys Asp Gly Ser His Ser Thr Gly His Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Asp Arg Tyr Leu Ser Ile Ser
 65 70 75 80
 Asn Ile Gln Pro Glu Asp Glu Ala Ile Tyr Ile Cys Gly Val Gly Asp
 85 90 95
 Ala Ile Lys Gly Gln Ser Val Phe Val Phe Gly Gly Gly Thr Lys Val
 100 105 110

Thr Val Leu
 115

<210> 67

<211> 351

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> CDS

<222> (1)..(351)

<400> 67

gaa gtg cag ctg gtg gag tct ggg gga ggc tta gtg aag cct gga ggg
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1 5 10 15
 tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc act ttc act acc tat
 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Thr Tyr

48

96

```

                20                25                30
gcc atg tct tgg gtt cgc cag act ccg gag aag agg ctg gag tgg gtc      144
Ala Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
                35                40                45
gca acc att agt agt ggt ggt act tac acc tac tat cca gac agt gtg      192
Ala Thr Ile Ser Ser Gly Gly Thr Tyr Thr Tyr Tyr Pro Asp Ser Val
                50                55                60
aag ggt cga ttc acc atc tcc aga gac aat gcc aag aac gcc cta tac      240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ala Leu Tyr
65                70                75                80
ctg caa atg agc agt ctg agg tct gag gac acg gcc atg tat tac tgt      288
Leu Gln Met Ser Ser Leu Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                90                95
gca aca cag ggg aat tac tct ttg gac ttc tgg ggc caa ggc acc tct      336
Ala Thr Gln Gly Asn Tyr Ser Leu Asp Phe Trp Gly Gln Gly Thr Ser
                100                105                110
ctc aca gtc tcc tca
Leu Thr Val Ser Ser
                115

```

<210> 68

<211> 342

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> CDS

<222> (1)..(342)

<400> 68

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gag gtg cag ctg gtg gag tct ggg gga ggc ttg gtg cag cct gga ggg      48
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1                5                10                15
tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc att ttc agt agc tat      96
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
                20                25                30
ggc atg tct tgg gtt cgc cag tct cca gac agg agg ctg gag ttg gtc      144
Gly Met Ser Trp Val Arg Gln Ser Pro Asp Arg Arg Leu Glu Leu Val
                35                40                45
gca agt att aat act ttt ggt gat aga acc tat tat cca gac agt gtg      192
Ala Ser Ile Asn Thr Phe Gly Asp Arg Thr Tyr Tyr Pro Asp Ser Val
                50                55                60
aag ggc cga ttc acc atc tcc aga gac aat gcc aag aac acc ctg tac      240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65                70                75                80
ctg caa atg acc agt ctg aag tct gag gac aca gcc att tat tac tgt      288
Leu Gln Met Thr Ser Leu Lys Ser Glu Asp Thr Ala Ile Tyr Tyr Cys
                85                90                95
gca aga ggg acc gga acc tac tgg ggc caa ggc acc act ctc aca gtc      336
Ala Arg Gly Thr Gly Thr Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
                100                105                110
tcc tca
Ser Ser

```

<210> 69

<211> 351

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> CDS

<222> (1)..(351)

<400> 69

cag gtc caa ctg cag cag tct ggg gct gaa ctg gtg aag cct ggg gct	48
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala	
1 5 10 15	
tca gtg aag ttg tcc tgc aag gct tct ggc tac acc ttc acc agc tac	96
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr	
20 25 30	
tat atg tac tgg gtg aag cag agg cct gga caa ggc ctt gag tgg att	144
Tyr Met Tyr Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile	
35 40 45	
gga gag att aat cct agc aat ggt ggt act aac ttc aat gag aag ttc	192
Gly Glu Ile Asn Pro Ser Asn Gly Gly Thr Asn Phe Asn Glu Lys Phe	
50 55 60	
aag agc aag gcc aca ctg act gta gac aaa tcc tcc agc aca gca tac	240
Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr	
65 70 75 80	
atg caa ctc agc agc ctg aca tct gag gac tct gcg gtc tat tac tgt	288
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys	
85 90 95	
aca aga ggc ggt tac tac ccc ttt gac tac tgg ggc caa ggc acc act	336
Thr Arg Gly Gly Tyr Tyr Pro Phe Asp Tyr Trp Gly Gln Gly Thr Thr	
100 105 110	
ctc acagtc tcc tca	351
Leu Thr Val Ser Ser	
115	

<210> 70

<211> 363

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polynucleotide

<220>

<221> CDS

<222> (1)..(363)

<400> 70

gat gtg cag ctt cag gag tcg gga cct ggc ctg gtg aaa cct tct cag	48
Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln	
1 5 10 15	
tct ctg tcc ctc aca tgc act gtc act ggc tac tca atc acc agt gat	96
Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp	
20 25 30	
tat gcc tgg aat tgg atc cgg cag ttt cca gga aac aaa ctg gag tgg	144
Tyr Ala Trp Asn Trp Ile Arg Gln Phe Pro Gly Asn Lys Leu Glu Trp	
35 40 45	
atg ggc tac ata agc ttc agt ggt tac act agt tac aac cca tct ctc	192
Met Gly Tyr Ile Ser Phe Ser Gly Tyr Thr Ser Tyr Asn Pro Ser Leu	
50 55 60	
aaa agt cga atc tct gtc act cgg gac aca tcc agg aac caa ttc ttc	240
Lys Ser Arg Ile Ser Val Thr Arg Asp Thr Ser Arg Asn Gln Phe Phe	
65 70 75 80	
ctc cag ttg act tct gtg act act gag gac aca gcc aca tat tac tgt	288
Leu Gln Leu Thr Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys	
85 90 95	
gca aga gag gtc aac tat ggg gac tcc tac cac ttt gac tac tgg ggc	336
Ala Arg Glu Val Asn Tyr Gly Asp Ser Tyr His Phe Asp Tyr Trp Gly	
100 105 110	
caa ggc acc att gtc aca gtc tcc tca	363
Gln Gly Thr Ile Val Thr Val Ser Ser	
115 120	

<210> 71

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<211> 336
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide
<220>
<221> CDS
<222> (1)..(336)
<400> 71
gac att gtg atg acg cag gct gca tcc tct aat cca gtc act ctt gga      48
Asp Ile Val Met Thr Gln Ala Ala Ser Ser Asn Pro Val Thr Leu Gly
1      5      10      15
aca tcc gct tcc atc tcc tgc agg tct agt aag agt ctc cga cat act      96
Thr Ser Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Arg His Thr
20      25      30
aaa ggc atc act ttt ttg tat tgg tat ctg cag aag cca ggc cag tct      144
Lys Gly Ile Thr Phe Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35      40      45
cct cag ctc ctg att tat cag atg tcc aac ctt gcc tca gga gtc cca      192
Pro Gln Leu Leu Ile Tyr Met Ser Asn Leu Ala Ser Gly Val Pro
50      55      60
gac agg ttc agt agc agt ggg tca gga act gat ttc aca ctg aga atc      240
Asp Arg Phe Ser Ser Ser Gly Ser Gly Thr Asp Phe Thr Leu Arg Ile
65      70      75      80
agc aga gtg gag gct gag gat ttg ggt gtt tat tac tgt gct caa aat      288
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Ala Gln Asn
85      90      95
cta gaa ctt ccg ctc acg ttc ggt gct ggg acc aag ctg gag ctg aaa      336
Leu Glu Leu Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100      105      110

<210> 72
<211> 336
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide
<220>
<221> CDS
<222> (1)..(336)
<400> 72
gat gtt gtg ctg acc cag act cca ctc act ttg tcg gtt acc att gga      48
Asp Val Val Leu Thr Gln Thr Pro Leu Thr Leu Ser Val Thr Ile Gly
1      5      10      15
caa cca gcc tcc atc tcc tgc aag tca agt cag agc ctc tta gat agt      96
Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Asp Ser
20      25      30
gat gga aag aca tat ttg aat tgg ttg tta cag agg cca ggc cag tct      144
Asp Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Arg Pro Gly Gln Ser
35      40      45
cca aag cgc cta atc tat ctg gtg tct aaa ctg gac tct gga gtc cct      192
Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
50      55      60
gac agg ttc act ggc agt gga tca ggg aca gat ttc aca ctg aaa atc      240
Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
agc aga gtg gag gct gag gat ttg gga gtt tat tat tgc tgg caa ggt      288
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Trp Gln Gly
85      90      95
aca cat ttt cct cag acg ttc ggt gga ggc acc aag ctg gaa atc aaa      336
Thr His Phe Pro Gln Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100      105      110

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<210> 73
<211> 336
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide
<220>
<221> CDS
<222> (1)..(336)
<400> 73
gat gtt gtg atg acc cag act cca ctc act ttg tcg gtt acc att ggg      48
Asp Val Val Met Thr Gln Thr Pro Leu Thr Leu Ser Val Thr Ile Gly
1      5      10      15
cgc cca gcc tcc atc tct tgc aag tca agt cag agc ctc tta gac agt      96
Arg Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Asp Ser
20      25      30
gat gga aag aca tat ttg tat tgg ttg tta cag agg cca ggc cag tct      144
Asp Gly Lys Thr Tyr Leu Tyr Trp Leu Leu Gln Arg Pro Gly Gln Ser
35      40      45
cca aag cgc cta atc tat ctg gtg tct gag ctg gac tct gga gtc cct      192
Pro Lys Arg Leu Ile Tyr Leu Val Ser Glu Leu Asp Ser Gly Val Pro
50      55      60
gac agg atc act ggc agt ggg tcg ggg aca gat ttc aca ctg aag atc      240
Asp Arg Ile Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
agc aga gtg gag gct gag gat ttg gga gtt tat tat tgc tgg caa gga      288
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Trp Gln Gly
85      90      95
aca cat tct ccg tac acg ttc gga ggg ggg acc aag ctg gaa ata aaa      336
Thr His Ser Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100      105      110

<210> 74
<211> 345
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polynucleotide
<220>
<221> CDS
<222> (1)..(345)
<400> 74
caa ctt gcg ctc act cag tca tct tca gcc tct ttc tcc ctg gga gcc      48
Gln Leu Ala Leu Thr Gln Ser Ser Ser Ala Ser Phe Ser Leu Gly Ala
1      5      10      15
tca gca aaa cta acg tgc act ttg agt agt caa cac aga acg tac acc      96
Ser Ala Lys Leu Thr Cys Thr Leu Ser Ser Gln His Arg Thr Tyr Thr
20      25      30
att gaa tgg tat cag caa cag tca ctc aag cct cct aag tat gtg atg      144
Ile Glu Trp Tyr Gln Gln Gln Ser Leu Lys Pro Pro Lys Tyr Val Met
35      40      45
gag gtt aag aaa gat gga agc cac agc aca ggt cat ggg att cct gat      192
Glu Val Lys Lys Asp Gly Ser His Ser Thr Gly His Gly Ile Pro Asp
50      55      60
cgc ttc tct gga tcc agt tct ggt gct gat cgc tac ctc agc att tcc      240
Arg Phe Ser Gly Ser Ser Ser Gly Ala Asp Arg Tyr Leu Ser Ile Ser
65      70      75      80
aac atc cag cct gaa gat gaa gca ata tac atc tgt ggt gtg ggt gat      288
Asn Ile Gln Pro Glu Asp Glu Ala Ile Tyr Ile Cys Gly Val Gly Asp
85      90      95
gca att aag gga caa tct gtg ttt gtt ttc ggc ggt ggc acc aag gtc      336
Ala Ile Lys Gly Gln Ser Val Phe Val Phe Gly Gly Gly Thr Lys Val

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100 105 110 345
 act gtc cta
 Thr Val Leu
 115
 <210> 75
 <211> 117
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 75
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Thr Tyr
 20 25 30
 Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Ser Ile Ser Ser Gly Gly Thr Tyr Thr Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Thr Gln Gly Asn Tyr Ser Leu Asp Phe Trp Gly Gln Gly Thr Thr
 100 105 110
 Val Thr Val Ser Ser
 115
 <210> 76
 <211> 112
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 76
 Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15
 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Arg His Thr
 20 25 30
 Lys Gly Ile Thr Phe Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ala Gln Asn
 85 90 95
 Leu Glu Leu Pro Leu Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110
 <210> 77
 <211> 117
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 77
 Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Thr Tyr
 20 25 30
 Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

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

<210> 78

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 78

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15
 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Arg His Thr
 20 25 30
 Lys Gly Ile Thr Phe Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ala Gln Asn
 85 90 95
 Leu Glu Leu Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110

<210> 79

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 79

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Thr Thr Tyr
 20 25 30
 Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Thr Ile Ser Ser Gly Gly Thr Tyr Thr Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Thr Gln Gly Asn Tyr Ser Leu Asp Phe Trp Gly Gln Gly Thr Thr
 100 105 110
 Val Thr Val Ser Ser
 115

<210> 80

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 80

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
 20 25 30
 Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Asn Ile Asn Thr Phe Gly Asp Arg Thr Tyr Tyr Val Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Thr Gly Thr Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
 100 105 110
 Ser Ser

<210> 81

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
 20 25 30
 Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Arg Arg Leu Ile Tyr Leu Val Ser Asn Arg Asp Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Trp Gln Gly
 85 90 95
 Thr His Phe Pro Gln Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105 110

<210> 82

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 82

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Ser Tyr
 20 25 30
 Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Ser Ile Asn Thr Phe Gly Asp Arg Thr Tyr Tyr Val Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Thr Gly Thr Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
 100 105 110
 Ser Ser

<210> 83

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<211> 112
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polypeptide
<400> 83
Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1      5      10      15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
20      25      30
Asp Gly Lys Thr Tyr Leu Asn Trp Phe Gln Gln Arg Pro Gly Gln Ser
35      40      45
Pro Arg Arg Leu Ile Tyr Leu Val Ser Lys Arg Asp Ser Gly Val Pro
50      55      60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Trp Gln Gly
85      90      95
Thr His Phe Pro Gln Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
100     105     110

<210> 84
<211> 117
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polypeptide
<400> 84
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1      5      10      15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20      25      30
Tyr Met Tyr Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35      40      45
Gly Ile Ile Asn Pro Ser Asn Gly Gly Thr Ser Tyr Ala Gln Lys Phe
50      55      60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Thr Ser Thr Val Tyr
65      70      75      80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85      90      95
Thr Arg Gly Gly Tyr Tyr Pro Phe Asp Tyr Trp Gly Gln Gly Thr Thr
100     105     110
Val Thr Val Ser Ser
115

<210> 85
<211> 112
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic polypeptide
<400> 85
Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
1      5      10      15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
20      25      30
Asp Gly Lys Thr Tyr Leu Tyr Trp Phe Gln Gln Arg Pro Gly Gln Ser
35      40      45
Pro Arg Arg Leu Ile Tyr Leu Val Ser Asn Arg Asp Ser Gly Val Pro
50      55      60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65      70      75      80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Trp Gln Gly

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				85					90					95			
Thr	His	Ser	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys		
			100					105					110				

<210> 86

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 86

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala		
1				5					10					15			
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Ser	Tyr		
			20					25					30				
Tyr	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Met		
		35					40					45					
Gly	Ile	Ile	Asn	Pro	Ser	Asn	Gly	Gly	Thr	Ser	Tyr	Ala	Gln	Lys	Phe		
	50					55					60						
Gln	Gly	Arg	Val	Thr	Met	Thr	Arg	Asp	Thr	Ser	Thr	Ser	Thr	Val	Tyr		
65					70				75						80		
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys		
				85					90					95			
Thr	Arg	Gly	Gly	Tyr	Tyr	Pro	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Thr		
			100					105					110				
Val	Thr	Val	Ser	Ser													
				115													

<210> 87

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 87

Asp	Val	Val	Met	Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Leu	Gly		
1				5					10					15			
Gln	Pro	Ala	Ser	Ile	Ser	Cys	Arg	Ser	Ser	Gln	Ser	Leu	Leu	Asp	Ser		
			20					25					30				
Asp	Gly	Lys	Thr	Tyr	Leu	Asn	Trp	Phe	Gln	Gln	Arg	Pro	Gly	Gln	Ser		
		35					40					45					
Pro	Arg	Arg	Leu	Ile	Tyr	Leu	Val	Ser	Asn	Arg	Asp	Ser	Gly	Val	Pro		
		50				55					60						
Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile		
65					70				75					80			
Ser	Arg	Val	Glu	Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Trp	Gln	Gly		
				85					90					95			
Thr	His	Ser	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys		
			100					105					110				

<210> 88

<211> 117

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 88

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys	Pro	Gly	Ala		
1				5					10					15			
Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Thr	Phe	Thr	Ser	Tyr		
			20					25					30				
Tyr	Met	Tyr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Met		
		35					40					45					

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

<210> 89

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 89

Asp Val Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Leu Gly
 1 5 10 15
 Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Asp Ser
 20 25 30
 Asp Gly Lys Thr Tyr Leu Tyr Trp Phe Gln Gln Arg Pro Gly Gln Ser
 35 40 45
 Pro Arg Arg Leu Ile Tyr Leu Val Ser Glu Arg Asp Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Trp Gln Gly
 85 90 95
 Thr His Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105 110

<210> 90

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 90

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Tyr Ser Ile Thr Ser Asp
 20 25 30
 Tyr Ala Trp Asn Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 Ile Gly Tyr Ile Ser Phe Ser Gly Tyr Thr Tyr Tyr Asn Pro Ser Leu
 50 55 60
 Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
 65 70 75 80
 Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Val Asn Tyr Gly Asp Ser Tyr His Phe Asp Tyr Trp Gly
 100 105 110
 Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 91

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 91

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1 5 10 15
 Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Arg Thr Tyr Thr
 20 25 30
 Ile Glu Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
 35 40 45
 Lys Val Lys Lys Asp Gly Ser His Ser Lys Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
 85 90 95
 Ala Ile Lys Gly Gln Ser Val Phe Val Phe Gly Gly Gly Thr Lys Val
 100 105 110

Glu Ile Lys
 115

<210> 92

<211> 121

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 92

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Tyr Ser Ile Thr Ser Asp
 20 25 30
 Tyr Ala Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 Ile Gly Tyr Ile Ser Phe Ser Gly Tyr Thr Tyr Tyr Asn Pro Ser Leu
 50 55 60
 Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
 65 70 75 80
 Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Val Asn Tyr Gly Asp Ser Tyr His Phe Asp Tyr Trp Gly
 100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 93

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 93

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1 5 10 15
 Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Arg Thr Tyr Thr
 20 25 30
 Ile Ala Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
 35 40 45
 Lys Val Lys Lys Asp Gly Ser His Ser Lys Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
 85 90 95
 Ala Ile Lys Gly Gln Ser Val Phe Val Phe Gly Gly Gly Thr Lys Val
 100 105 110

Glu Ile Lys

115
 <210> 94
 <211> 121
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 94
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Tyr Ser Ile Thr Ser Asp
 20 25 30
 Tyr Ala Trp Asn Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp
 35 40 45
 Ile Gly Tyr Ile Ser Phe Ser Gly Tyr Thr Ser Tyr Asn Pro Ser Leu
 50 55 60
 Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
 65 70 75 80
 Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Val Asn Tyr Gly Asp Ser Tyr His Phe Asp Tyr Trp Gly
 100 105 110
 Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120
 <210> 95
 <211> 115
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic polypeptide
 <400> 95
 Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
 1 5 10 15
 Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Arg Thr Tyr Thr
 20 25 30
 Ile Glu Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
 35 40 45
 Glu Val Lys Lys Asp Gly Ser His Ser Lys Gly Asp Gly Ile Pro Asp
 50 55 60
 Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
 65 70 75 80
 Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
 85 90 95
 Ala Ile Lys Gly Gln Ser Val Phe Val Phe Gly Gly Gly Thr Lys Val
 100 105 110
 Glu Ile Lys
 115
 <210> 96
 <211> 29
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Description of Artificial Sequence: Synthetic peptide
 <220>
 <221> MOD_RES
 <222> (2)..(3)
 <223> Ahx
 <400> 96
 Cys Xaa Xaa Gln Gly Pro Trp Leu Glu Glu Glu Glu Ala Tyr Gly
 1 5 10 15
 Trp Met Asp Phe Gly Arg Arg Ser Ala Glu Asp Glu Asn

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                20                25
<210> 97
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<220>
<221> MOD_RES
<222> (2)..(3)
<223> Ahx
<400> 97
Cys Xaa Xaa Phe Gly Arg Arg Ser Ala Glu Asp Glu Asn
1          5          10
<210> 98
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<220>
<221> MOD_RES
<222> (11)..(12)
<223> Ahx
<400> 98
Phe Gly Arg Arg Ser Ala Glu Asp Glu Asn Xaa Xaa Cys
1          5          10
<210> 99
<211> 15
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic peptide
<400> 99
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1          5          10          15
<210> 100
<211> 101
<212> PRT
<213> Homo sapiens
<400> 100
Met Gln Arg Leu Cys Val Tyr Val Leu Ile Phe Ala Leu Ala Leu Ala
1          5          10          15
Ala Phe Ser Glu Ala Ser Trp Lys Pro Arg Ser Gln Gln Pro Asp Ala
20          25          30
Pro Leu Gly Thr Gly Ala Asn Arg Asp Leu Glu Leu Pro Trp Leu Glu
35          40          45
Gln Gln Gly Pro Ala Ser His His Arg Arg Gln Leu Gly Pro Gln Gly
50          55          60
Pro Pro His Leu Val Ala Asp Pro Ser Lys Lys Gln Gly Pro Trp Leu
65          70          75          80
Glu Glu Glu Glu Glu Ala Tyr Gly Trp Met Asp Phe Gly Arg Arg Ser
85          90          95
Ala Glu Asp Glu Asn
100
<210> 101
<211> 80
<212> PRT
<213> Homo sapiens
<400> 101
Ser Trp Lys Pro Arg Ser Gln Gln Pro Asp Ala Pro Leu Gly Thr Gly

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<210> 102
<211> 34
<212> PRT
<213> Homo sapiens
<400> 102
Gln Leu Gly Pro Gln Gly Pro Pro His Leu Val Ala Asp Pro Ser Lys
1          5          10          15
Lys Gln Gly Pro Trp Leu Glu Glu Glu Glu Glu Ala Tyr Gly Trp Met
          20          25          30
Asp Phe

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Asp Phe Gly
35
<210> 104
<211> 17
<212> PRT
<213> Homo sapiens
<400> 104
Gln Gly Pro Trp Leu Glu Glu Glu Glu Glu Ala Tyr Gly Trp Met Asp
1 5 10 15
Phe

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<210> 106
<211> 6
<212> PRT
<213> Homo sapiens
<400> 106
Ser Ala Glu Asp Glu Asn
1 5
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