

SEQUENCE LISTING

<110> MAKSYUTOV, AMIR
ARTEMEV, TIMUR

<120> UNIVERSAL INFLUENZA VACCINES AND METHODS FOR THEIR GENERATION

<130> 27584-0002W01

<150> US 61/331,665

<151> 2010-05-05

<160> 128

<170> FastSEQ for Windows Version 4.0

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<211> 221

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 1

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Pro Leu Ile Leu Arg Asp Cys Ser Val Ala Gly Trp Leu Leu Gly Asn
 1      5      10      15
Pro Met Cys Asp Glu Phe Ile Asn Val Pro Glu Trp Ser Tyr Ile Val
 20      25      30
Glu Lys Ala Asn Pro Ala Asn Asp Leu Cys Tyr Pro Gly Asn Phe Asn
 35      40      45
Asp Tyr Glu Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu
 50      55      60
Lys Ile Gln Ile Ile Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser
 65      70      75      80
Ser Gly Val Ser Ser Ala Cys Pro Tyr Leu Gly Ser Pro Ser Phe Phe
 85      90      95
Arg Asn Val Val Trp Leu Ile Lys Lys Asn Ser Thr Tyr Pro Thr Ile
 100     105     110
Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu Trp
 115     120     125
Gly Ile His His Pro Asn Asp Ala Ala Glu Gln Thr Lys Leu Tyr Gln
 130     135     140
Asn Pro Thr Thr Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg
 145     150     155     160
Leu Val Pro Arg Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly
 165     170     175
Arg Met Glu Phe Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn
 180     185     190
Phe Glu Ser Asn Gly Asn Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile
 195     200     205
Val Lys Lys Gly Asp Ser Thr Ile Met Lys Ser Glu Leu
 210     215     220

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<210> 2

<211> 221

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<220>

<223> Synthetic peptide

<400> 2

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Pro Leu Ile Leu Arg Asp Cys Ser Val Ala Gly Trp Leu Leu Gly Asn
 1      5      10      15
Pro Met Cys Asp Glu Phe Ile Asn Val Pro Glu Trp Ser Tyr Ile Val

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60701534.txt

		20					25				30				
Glu	Lys	Ala	Asn	Pro	Val	Asn	Asp	Leu	Cys	Tyr	Pro	Gly	Asp	Phe	Asn
		35					40					45			
Asp	Tyr	Glu	Glu	Leu	Lys	His	Leu	Leu	Ser	Arg	Ile	Asn	His	Phe	Glu
	50					55					60				
Lys	Ile	Gln	Ile	Ile	Pro	Lys	Ser	Ser	Trp	Ser	Ser	His	Glu	Ala	Ser
65					70					75					80
Leu	Gly	Val	Ser	Ser	Ala	Cys	Pro	Tyr	Gln	Gly	Lys	Ser	Ser	Phe	Phe
			85						90					95	
Arg	Asn	Val	Val	Trp	Leu	Ile	Lys	Lys	Asn	Ser	Thr	Tyr	Pro	Thr	Ile
			100					105					110		
Lys	Arg	Ser	Tyr	Asn	Asn	Thr	Asn	Gln	Glu	Asp	Leu	Leu	Val	Leu	Trp
		115					120					125			
Gly	Ile	His	His	Pro	Asn	Asp	Ala	Ala	Glu	Gln	Thr	Lys	Leu	Tyr	Gln
	130					135					140				
Asn	Pro	Thr	Thr	Tyr	Ile	Ser	Val	Gly	Thr	Ser	Thr	Leu	Asn	Gln	Arg
145					150					155					160
Leu	Val	Pro	Arg	Ile	Ala	Thr	Arg	Ser	Lys	Val	Asn	Gly	Gln	Ser	Gly
			165						170					175	
Arg	Met	Glu	Phe	Phe	Trp	Thr	Ile	Leu	Lys	Pro	Asn	Asp	Ala	Ile	Asn
			180					185					190		
Phe	Glu	Ser	Asn	Gly	Asn	Phe	Ile	Ala	Pro	Glu	Tyr	Ala	Tyr	Lys	Ile
		195					200					205			
Val	Lys	Lys	Gly	Asp	Ser	Thr	Ile	Met	Lys	Ser	Glu	Leu			
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<220>

<223> Synthetic peptide

<400> 3

Pro	Leu	Ile	Leu	Arg	Asp	Cys	Ser	Val	Ala	Gly	Trp	Leu	Leu	Gly	Asn
1				5					10					15	
Pro	Met	Cys	Asp	Glu	Phe	Ile	Asn	Val	Pro	Glu	Trp	Ser	Tyr	Ile	Val
			20					25					30		
Glu	Lys	Ala	Ser	Pro	Ala	Asn	Asp	Leu	Cys	Tyr	Pro	Gly	Asp	Phe	Asn
		35					40					45			
Asp	Tyr	Glu	Glu	Leu	Lys	His	Leu	Leu	Ser	Arg	Ile	Asn	His	Phe	Glu
	50					55					60				
Lys	Ile	Gln	Ile	Ile	Pro	Arg	Ser	Ser	Trp	Ser	Asn	His	Asp	Ala	Ser
65					70					75					80
Ser	Gly	Val	Ser	Ser	Ala	Cys	Pro	Tyr	Asn	Gly	Arg	Ser	Ser	Phe	Phe
			85						90					95	
Arg	Asn	Val	Val	Trp	Leu	Ile	Lys	Lys	Asp	Asn	Ala	Tyr	Pro	Thr	Ile
			100					105					110		
Lys	Arg	Ser	Tyr	Asn	Asn	Thr	Asn	Gln	Glu	Asp	Leu	Leu	Val	Leu	Trp
		115					120					125			
Gly	Ile	His	His	Pro	Asn	Asp	Ala	Ala	Glu	Gln	Thr	Lys	Leu	Tyr	Gln
	130					135					140				
Asn	Pro	Thr	Thr	Tyr	Ile	Ser	Val	Gly	Thr	Ser	Thr	Leu	Asn	Gln	Arg
145					150					155					160
Leu	Val	Pro	Arg	Ile	Ala	Thr	Arg	Ser	Lys	Val	Asn	Gly	Gln	Ser	Gly
			165						170					175	
Arg	Met	Glu	Phe	Phe	Trp	Thr	Ile	Leu	Lys	Pro	Asn	Asp	Ala	Ile	Asn
			180					185					190		
Phe	Glu	Ser	Asn	Gly	Asn	Phe	Ile	Ala	Pro	Glu	Tyr	Ala	Tyr	Lys	Ile
		195					200					205			
Val	Lys	Lys	Gly	Asp	Ser	Thr	Ile	Met	Lys	Ser	Glu	Leu			
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<213> Artificial Sequence

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<223> Synthetic peptide

<400> 4

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Pro Leu Ile Leu Arg Asp Cys Ser Val Ala Gly Trp Leu Leu Gly Asn
 1      5      10      15
Pro Met Cys Asp Glu Phe Ile Asn Val Pro Glu Trp Ser Tyr Ile Val
      20      25      30
Glu Lys Ala Asn Pro Thr Asn Asp Leu Cys Tyr Pro Gly Ser Phe Asn
      35      40      45
Asp Tyr Glu Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu
      50      55      60
Lys Ile Gln Ile Ile Pro Lys Ser Ser Trp Ser Asn His Glu Ala Ser
65      70      75      80
Ser Gly Val Ser Ser Ala Cys Pro Tyr Gln Gly Thr Pro Ser Phe Phe
      85      90      95
Arg Asn Val Val Trp Leu Ile Lys Lys Asn Asn Ala Tyr Pro Thr Ile
      100      105      110
Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu Trp
      115      120      125
Gly Ile His His Pro Asn Asn Glu Ala Glu Gln Thr Arg Leu Tyr Gln
      130      135      140
Asn Pro Thr Thr Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg
145      150      155      160
Leu Val Pro Arg Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly
      165      170      175
Arg Met Glu Phe Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn
      180      185      190
Phe Glu Ser Asn Gly Asn Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile
      195      200      205
Val Lys Lys Gly Asp Ser Thr Ile Met Lys Ser Glu Leu
      210      215      220

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<210> 5

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<213> Artificial Sequence

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<223> Synthetic peptide

<400> 5

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Pro Leu Ile Leu Arg Asp Cys Ser Val Ala Gly Trp Leu Leu Gly Asn
 1      5      10      15
Pro Met Cys Asp Glu Phe Ile Asn Val Pro Glu Trp Ser Tyr Ile Val
      20      25      30
Glu Lys Asp Asn Pro Val Asn Gly Leu Cys Tyr Pro Gly Asp Phe Asn
      35      40      45
Asp Tyr Glu Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu
      50      55      60
Lys Ile Gln Ile Ile Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser
65      70      75      80
Leu Gly Val Ser Ser Ala Cys Pro Tyr Leu Gly Arg Ser Ser Phe Phe
      85      90      95
Arg Asn Val Val Trp Leu Ile Lys Lys Asn Ser Thr Tyr Pro Thr Ile
      100      105      110
Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu Trp
      115      120      125
Gly Ile His His Pro Asn Asp Ala Ala Glu Gln Ile Lys Leu Tyr Gln
      130      135      140
Asn Pro Asn Thr Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg
145      150      155      160
Leu Val Pro Arg Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly
      165      170      175

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60701534.txt

Arg	Met	Glu	Phe	Phe	Trp	Thr	Ile	Leu	Lys	Pro	Asn	Asp	Ala	Ile	Asn
			180					185					190		
Phe	Glu	Ser	Asn	Gly	Asn	Phe	Ile	Ala	Pro	Glu	Asn	Ala	Tyr	Lys	Ile
		195					200					205			
Val	Lys	Lys	Gly	Asp	Ser	Thr	Ile	Met	Lys	Ser	Glu	Leu			
	210					215					220				

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 <213> Artificial Sequence

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<400> 6	Pro	Lys	Ser	Ser	Trp	Ser	Asp	His	Glu	Ala	Ser	Ser	Gly	Val	Ser	Ser
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	Ala	Cys	Pro	Tyr	Leu	Gly	Ser	Pro	Ser	Phe	Gly	Cys	Gly			
				20					25							

<210> 7
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<400> 7	Pro	Lys	Ser	Ser	Trp	Ser	Ser	His	Glu	Ala	Ser	Leu	Gly	Val	Ser	Ser
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	Ala	Cys	Pro	Tyr	Gln	Gly	Lys	Ser	Ser	Phe	Gly	Cys	Gly			
				20					25							

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	Ala	Cys	Pro	Tyr	Asn	Gly	Arg	Ser	Ser	Phe	Gly	Cys	Gly			
				20					25							

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	Ala	Cys	Pro	Tyr	Gln	Gly	Thr	Pro	Ser	Phe	Gly	Cys	Gly			
				20					25							

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 1 5 10 15
 Ala Cys Pro Tyr Leu Gly Arg Ser Ser Phe Gly Cys Gly
 20 25

<210> 11
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 1 5 10 15
 Ala Ala Pro Tyr Leu Gly Ser Pro Ser Phe Gly
 20 25

<210> 12
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 Ala Ala Pro Tyr Gln Gly Lys Ser Ser Phe Gly
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<210> 13
 <211> 27
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 <213> Artificial Sequence

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 1 5 10 15
 Ala Ala Pro Tyr Asn Gly Arg Ser Ser Phe Gly
 20 25

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 1 5 10 15
 Ala Ala Pro Tyr Gln Gly Thr Pro Ser Phe Gly
 20 25

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 Ala Ala Pro Tyr Leu Gly Arg Ser Ser Phe Gly
 20 25

<210> 16
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 1 5 10 15

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<400> 17
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<400> 18
 Pro Asn Asp Ala Ala Glu Gln Ile Lys Leu Tyr Gln Asn Pro Asn Thr
 1 5 10 15

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Asp Lys Glu Ser Thr Gln Lys Ala Ile Asp Gly Val Thr Asn Lys Val
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 Asn Ser Ile Ile Asp Lys
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Ile Leu Asp Gly Glu Asn Cys Thr Leu Ile Asp Ala Leu Leu Gly Asp
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 Pro Gln Cys Asp Gly Phe Gln Asn Lys Lys Trp Asp Leu Phe Val Glu
 20 25 30
 Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
 35 40 45
 Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 50 55 60
 Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
 65 70 75 80
 Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe Phe Ser Arg Leu Asn Trp
 85 90 95
 Leu Thr His Leu Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
 100 105 110
 Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
 115 120 125
 Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Gln Ala Ser Gly Arg
 130 135 140
 Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
 145 150 155 160
 Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
 165 170 175
 Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
 180 185 190
 Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser Gly Lys Ser
 195 200 205
 Ser Ile Met Arg Ser Asp Ala
 210 215

<210> 21

<211> 215

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 21

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

60701534.txt

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

<210> 22
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<220>
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Pro	Gln	Cys	Asp	Gly	Phe	Gln	Asn	Lys	Lys	Trp	Asp	Leu	Phe	Val	Glu
			20					25					30		
Arg	Ser	Lys	Ala	Tyr	Ser	Asn	Cys	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
		35				40						45			
Ala	Ser	Leu	Arg	Ser	Leu	Val	Ala	Ser	Ser	Gly	Thr	Leu	Glu	Phe	Asn
		50				55					60				
Asn	Glu	Ser	Phe	Asn	Trp	Thr	Gly	Val	Thr	Gln	Asn	Gly	Thr	Ser	Ser
65					70					75					80
Ala	Cys	Lys	Arg	Arg	Ser	Asn	Asn	Ser	Phe	Phe	Ser	Arg	Leu	Asn	Trp
				85					90					95	
Leu	Thr	His	Leu	Lys	Phe	Lys	Tyr	Pro	Ala	Leu	Asn	Val	Thr	Met	Pro
			100					105					110		
Asn	Asn	Glu	Gln	Phe	Asp	Lys	Leu	Tyr	Ile	Trp	Gly	Val	His	His	Pro
		115					120					125			
Gly	Thr	Asp	Asn	Asp	Gln	Ile	Ser	Leu	Tyr	Ala	Gln	Ala	Ser	Gly	Arg
		130				135					140				
Ile	Thr	Val	Ser	Thr	Lys	Arg	Ser	Gln	Gln	Thr	Val	Ile	Pro	Asn	Ile
145					150					155					160
Gly	Ser	Arg	Pro	Arg	Val	Arg	Asn	Ile	Pro	Ser	Arg	Ile	Ser	Ile	Tyr
				165					170					175	
Trp	Thr	Ile	Val	Lys	Pro	Gly	Asp	Ile	Leu	Leu	Ile	Asn	Ser	Thr	Gly
			180					185					190		
Asn	Leu	Ile	Ala	Pro	Arg	Gly	Tyr	Phe	Lys	Ile	Arg	Ser	Gly	Lys	Ser
		195					200					205			
Ser	Ile	Met	Arg	Ser	Asp	Ala									
	210					215									

<210> 23
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<400> 23															
Ile	Leu	Asp	Gly	Glu	Asn	Cys	Thr	Leu	Ile	Asp	Ala	Leu	Leu	Gly	Asp
1				5					10					15	

60701534.txt

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Pro Gln Cys Asp Gly Phe Gln Asn Lys Lys Trp Asp Leu Phe Val Glu
      20      25      30
Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
      35      40      45
Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
      50      55      60
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
      65      70      75      80
Ala Cys Lys Arg Arg Ser Asn Lys Ser Phe Phe Ser Arg Leu Asn Trp
      85      90      95
Leu Thr Gln Leu Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
      100      105      110
Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
      115      120      125
Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Gln Ala Ser Gly Arg
      130      135      140
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
      145      150      155      160
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
      165      170      175
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
      180      185      190
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser Gly Lys Ser
      195      200      205
Ser Ile Met Arg Ser Asp Ala
      210      215

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<210> 24
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<220>
 <223> Synthetic peptide

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<400> 24
Ile Leu Asp Gly Glu Asn Cys Thr Leu Ile Asp Ala Leu Leu Gly Asp
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Pro Gln Cys Asp Gly Phe Gln Asn Lys Asn Trp Asp Leu Phe Val Glu
      20      25      30
Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
      35      40      45
Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
      50      55      60
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
      65      70      75      80
Ala Cys Ile Arg Arg Ser Asn Lys Ser Phe Phe Ser Arg Leu Asn Trp
      85      90      95
Leu Thr His Ser Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
      100      105      110
Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
      115      120      125
Gly Thr Asp Asn Asp Gln Thr Phe Leu Tyr Ala Gln Ala Ser Gly Arg
      130      135      140
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
      145      150      155      160
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
      165      170      175
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
      180      185      190
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser Gly Lys Ser
      195      200      205
Ser Ile Met Arg Ser Asp Ala
      210      215

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<210> 25

<211> 215
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 <213> Artificial Sequence

<220>
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<400> 25
 Ile Leu Asp Gly Glu Asn Cys Thr Leu Ile Asp Ala Leu Leu Gly Asp
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 Pro Gln Cys Asp Gly Phe Gln Asn Lys Asn Trp Asp Leu Phe Val Glu
 20 25 30
 Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
 35 40 45
 Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 50 55 60
 Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Tyr
 65 70 75 80
 Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe Phe Ser Arg Leu Asn Trp
 85 90 95
 Leu Thr His Leu Glu Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
 100 105 110
 Asn Asn Glu Lys Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
 115 120 125
 Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Arg Ala Ser Gly Arg
 130 135 140
 Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
 145 150 155 160
 Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
 165 170 175
 Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
 180 185 190
 Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser Gly Lys Ser
 195 200 205
 Ser Ile Met Arg Ser Asp Ala
 210 215

<210> 26
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<220>
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 Asn Gly Thr Ser Ser Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 27
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<220>
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<400> 27
 Asn Gly Thr Ser Ser Ala Cys Lys Arg Gly Ser Asn Asn Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 28
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 <213> Artificial Sequence

<220>
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<400> 28
 Asn Gly Thr Ser Ser Ala Cys Lys Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 29
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<220>
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<400> 29
 Asn Gly Thr Ser Ser Ala Cys Lys Arg Arg Ser Asn Lys Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 30
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 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 30
 Asn Gly Thr Ser Ser Ala Cys Ile Arg Arg Ser Asn Lys Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 31
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<400> 31
 Asn Gly Thr Ser Tyr Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15
 Cys Gly

<210> 32
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 32
 Asn Gly Thr Ser Ser Ala Ala Ile Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15

<210> 33
 <211> 16
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 <213> Artificial Sequence

<220>
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<400> 33
 Asn Gly Thr Ser Ser Ala Ala Lys Arg Gly Ser Asn Asn Ser Phe Gly
 1 5 10 15

<210> 34
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 34
 Asn Gly Thr Ser Ser Ala Ala Lys Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15

<210> 35
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 35
 Asn Gly Thr Ser Ser Ala Ala Lys Arg Arg Ser Asn Lys Ser Phe Gly
 1 5 10 15

<210> 36
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<220>
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<400> 36
 Asn Gly Thr Ser Ser Ala Ala Ile Arg Arg Ser Asn Lys Ser Phe Gly
 1 5 10 15

<210> 37
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<220>
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<400> 37
 Asn Gly Thr Ser Tyr Ala Ala Ile Arg Arg Ser Asn Asn Ser Phe Gly
 1 5 10 15

<210> 38
 <211> 16
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 <213> Artificial Sequence

<220>
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<400> 38
 Pro Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Gln Ala Ser Gly
 1 5 10 15

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

<220>
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<400> 39
 Pro Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Arg Ala Ser Gly
 1 5 10 15

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<400> 40
 Pro Gly Thr Asp Asn Asp Gln Ile Ser Leu Tyr Ala Gln Ala Ser Gly
 1 5 10 15

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<400> 41
 Pro Gly Thr Asp Asn Asp Gln Thr Phe Leu Tyr Ala Gln Ala Ser Gly
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<210> 42
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 1 5 10 15

<210> 43

<211> 21
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<220>
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<400> 43
 Val Pro Asn Gly Thr Ile Val Lys Thr Ile Thr Asn Asp Gln Ile Glu
 1 5 10 15
 Val Thr Asn Ala Thr
 20

<210> 44
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 44
 Asp Leu Lys Ser Thr Gln Ala Ala Ile Asn Gln Ile Asn Gly Lys Leu
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 Asn Arg Leu Ile Gly Lys
 20

<210> 45
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 45
 Asp Leu Lys Ser Thr Gln Ala Ala Ile Asn Gln Ile Asn Gly Lys Leu
 1 5 10 15
 Asn Arg Leu Glu Gly Lys
 20

<210> 46
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 46
 Asp Leu Lys Ser Thr Gln Ala Ala Asp Asn Gln Ile Asn Gly Lys Leu
 1 5 10 15
 Asn Arg Leu Ile Gly Lys
 20

<210> 47
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 47

Asp Leu Lys Ser Thr Gln Ala Ala Asp Asn Gln Ile Asn Gly Lys Leu
 1 5 10 15
 Asn Arg Leu Glu Gly Lys
 20

<210> 48
 <211> 220
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<400> 48
 Pro Leu Gln Leu Gly Asn Cys Ser Val Ala Gly Trp Ile Leu Gly Asn
 1 5 10 15
 Pro Glu Cys Glu Leu Leu Ile Ser Lys Glu Ser Trp Ser Tyr Ile Val
 20 25 30
 Glu Lys Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly His Phe Ala
 35 40 45
 Asp Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu
 50 55 60
 Arg Phe Glu Ile Phe Pro Lys Ser Ser Trp Pro Asn His Thr Val Thr
 65 70 75 80
 Gly Val Ser Ala Ser Cys Ser His Asn Gly Glu Ser Ser Phe Tyr Arg
 85 90 95
 Asn Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser
 100 105 110
 Lys Ser Tyr Ala Asn Asn Lys Glu Lys Glu Val Leu Val Leu Trp Gly
 115 120 125
 Val His His Pro Pro Asn Ile Gly Asp Gln Lys Ala Leu Tyr His Thr
 130 135 140
 Glu Asn Ala Tyr Val Ser Val Val Ser Ser His Tyr Ser Arg Lys Phe
 145 150 155 160
 Thr Pro Glu Ile Ala Lys Arg Pro Lys Val Arg Asp Gln Glu Gly Arg
 165 170 175
 Ile Asn Tyr Tyr Trp Thr Leu Leu Glu Pro Gly Asp Thr Ile Ile Phe
 180 185 190
 Glu Ala Asn Gly Asn Leu Ile Ala Pro Arg Tyr Ala Phe Ala Leu Ser
 195 200 205
 Arg Gly Phe Gly Ser Gly Ile Ile Asn Ser Asn Ala
 210 215 220

<210> 49
 <211> 221
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<400> 49
 Pro Leu Gln Leu Gly Asn Cys Ser Val Ala Gly Trp Ile Leu Gly Asn
 1 5 10 15
 Pro Glu Cys Glu Leu Leu Ile Ser Lys Glu Ser Trp Ser Tyr Ile Val
 20 25 30
 Glu Lys Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly His Phe Ala
 35 40 45
 Asp Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu
 50 55 60
 Arg Phe Glu Ile Phe Pro Lys Glu Ser Ser Trp Pro Asn His Thr Val
 65 70 75 80
 Thr Gly Val Ser Ala Ser Cys Ser His Asn Gly Lys Ser Ser Phe Tyr
 85 90 95
 Arg Asn Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn Leu
 100 105 110

60701534.txt

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

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<210> 50
 <211> 222
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

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<400> 50
Pro Leu Gln Leu Gly Asn Cys Ser Val Ala Gly Trp Ile Leu Gly Asn
1 5 10 15
Pro Glu Cys Glu Leu Leu Ile Ser Lys Glu Ser Trp Ser Tyr Ile Val
20 25 30
Glu Thr Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly Tyr Phe Ala
35 40 45
Asp Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu
50 55 60
Arg Phe Glu Ile Phe Pro Lys Glu Ser Ser Trp Pro Asn His Thr Val
65 70 75 80
Thr Lys Gly Val Thr Ala Ser Cys Ser His Asn Gly Lys Ser Ser Phe
85 90 95
Tyr Arg Asn Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn
100 105 110
Leu Ser Met Ser Tyr Val Asn Asn Lys Glu Lys Glu Val Leu Val Leu
115 120 125
Trp Gly Val His His Pro Pro Asn Ile Gly Asp Gln Arg Ala Leu Tyr
130 135 140
His Thr Glu Asn Ala Tyr Val Ser Val Val Ser Ser His Tyr Ser Arg
145 150 155 160
Lys Phe Thr Pro Glu Ile Ala Lys Arg Pro Lys Val Arg Asp Gln Glu
165 170 175
Gly Arg Ile Asn Tyr Tyr Trp Thr Leu Leu Glu Pro Gly Asp Thr Ile
180 185 190
Ile Phe Glu Ala Asn Gly Asn Leu Ile Ala Pro Arg Tyr Ala Phe Ala
195 200 205
Leu Ser Arg Gly Phe Gly Ser Gly Ile Ile Asn Ser Asn Ala
210 215 220

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<210> 51
 <211> 222
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

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<400> 51
Pro Leu His Leu Gly Lys Cys Asn Ile Ala Gly Trp Ile Leu Gly Asn
1 5 10 15
Pro Glu Cys Glu Ser Leu Ser Thr Ala Ser Ser Trp Ser Tyr Ile Val
20 25 30

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60701534.txt

Glu	Thr	Ser	Ser	Ser	Asp	Asn	Gly	Thr	Cys	Tyr	Pro	Gly	Asp	Phe	Ile
		35					40					45			
Asp	Tyr	Glu	Glu	Leu	Arg	Glu	Gln	Leu	Ser	Ser	Val	Ser	Ser	Phe	Glu
	50					55					60				
Arg	Phe	Glu	Ile	Phe	Pro	Lys	Thr	Ser	Ser	Trp	Pro	Asn	His	Asp	Ser
65					70					75					80
Asn	Lys	Gly	Val	Thr	Ala	Ala	Cys	Pro	His	Ala	Gly	Ala	Lys	Ser	Phe
				85					90					95	
Tyr	Lys	Asn	Leu	Ile	Trp	Leu	Val	Lys	Lys	Gly	Asn	Ser	Tyr	Pro	Lys
		100						105					110		
Leu	Ser	Lys	Ser	Tyr	Ile	Asn	Asp	Lys	Gly	Lys	Glu	Val	Leu	Val	Leu
		115					120					125			
Trp	Gly	Ile	His	His	Pro	Ser	Thr	Ser	Ala	Asp	Gln	Gln	Ser	Leu	Tyr
	130					135					140				
Gln	Asn	Ala	Asp	Ala	Tyr	Val	Phe	Val	Gly	Ser	Ser	Arg	Tyr	Ser	Lys
145					150					155					160
Lys	Phe	Lys	Pro	Glu	Ile	Ala	Ile	Arg	Pro	Lys	Val	Arg	Asp	Gln	Glu
				165					170					175	
Gly	Arg	Met	Asn	Tyr	Tyr	Trp	Thr	Leu	Val	Glu	Pro	Gly	Asp	Lys	Ile
			180					185					190		
Thr	Phe	Glu	Ala	Thr	Gly	Asn	Leu	Val	Val	Pro	Arg	Tyr	Ala	Phe	Ala
		195					200					205			
Met	Glu	Arg	Asn	Ala	Gly	Ser	Gly	Ile	Ile	Ile	Ser	Asp	Thr		
	210					215					220				

<210> 52
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 52
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Cys
 1 5 10 15
 Ser His Asn Gly Lys Ser Ser Phe Gly Cys Gly
 20 25

<210> 53
 <211> 27
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 53
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Cys
 1 5 10 15
 Ser His Asn Gly Glu Ser Ser Phe Gly Cys Gly
 20 25

<210> 54
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 54
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Lys Gly Val Thr Ala Ser
 1 5 10 15
 Cys Ser His Asn Gly Lys Ser Ser Phe Gly Cys Gly
 Page 17

20

25

<210> 55
 <211> 28
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 55
 Thr Ser Ser Trp Pro Asn His Asp Ser Asn Lys Gly Val Thr Ala Ala
 1 5 10 15
 Cys Pro His Ala Gly Ala Lys Ser Phe Gly Cys Gly
 20 25

<210> 56
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 56
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Ala
 1 5 10 15
 Ser His Asn Gly Lys Ser Ser Phe Gly
 20 25

<210> 57
 <211> 25
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 57
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Ala
 1 5 10 15
 Ser His Asn Gly Glu Ser Ser Phe Gly
 20 25

<210> 58
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 58
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Lys Gly Val Thr Ala Ser
 1 5 10 15
 Ala Ser His Asn Gly Lys Ser Ser Phe Gly
 20 25

<210> 59
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 59

Thr	Ser	Ser	Trp	Pro	Asn	His	Asp	Ser	Asn	Lys	Gly	Val	Thr	Ala	Ala
1				5					10					15	
Ala	Pro	His	Ala	Gly	Ala	Lys	Ser	Phe	Gly						
			20					25							

<210> 60

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 60

Asp	Gln	Lys	Ser	Thr	Gln	Asn	Ala	Ile	Asp	Gly	Ile	Thr	Asn	Lys	Val
1				5					10					15	
Asn	Ser	Val	Ile	Glu	Lys										
			20												

<210> 61

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 61

Lys	Ala	Asn	Pro	Ala	Asn	Asp	Leu	Cys	Tyr	Pro	Gly	Asn	Phe	Asn	Asp
1				5					10					15	
Tyr	Glu	Glu	Leu	Lys	His	Leu	Leu	Ser	Arg	Ile	Asn	His	Phe	Glu	Lys
			20					25					30		
Ile	Gln	Ile	Ile	Pro	Lys	Ser	Ser	Trp	Ser	Asp	His	Glu	Ala	Ser	Ser
		35				40						45			
Gly	Val	Ser	Ser	Ala	Cys	Pro	Tyr	Leu	Gly	Ser	Pro	Ser	Phe	Phe	Arg
	50					55					60				
Asn	Val	Val	Trp	Leu	Ile	Lys	Lys	Asn	Ser	Thr	Tyr	Pro	Thr	Ile	Lys
65				70					75					80	
Arg	Ser	Tyr	Asn	Asn	Thr	Asn	Gln	Glu	Asp	Leu	Leu	Val	Leu	Trp	Gly
			85					90					95		
Ile	His	His	Pro	Asn	Asp	Ala	Ala	Glu	Gln	Thr	Lys	Leu	Tyr	Gln	Asn
			100					105					110		
Pro	Thr	Thr	Tyr	Ile	Ser	Val	Gly	Thr	Ser	Thr	Leu	Asn	Gln	Arg	Leu
		115					120					125			
Val	Pro	Arg	Ile	Ala	Thr	Arg	Ser	Lys	Val	Asn	Gly	Gln	Ser	Gly	Arg
	130					135					140				
Met	Glu	Phe	Phe	Trp	Thr	Ile	Leu	Lys	Pro	Asn	Asp	Ala	Ile	Asn	Phe
145					150				155					160	
Glu	Ser	Asn	Gly	Asn	Phe	Ile	Ala	Pro	Glu	Tyr	Ala	Tyr	Lys	Ile	Val
				165					170					175	

Lys

<210> 62

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

60701534.txt

<400> 62

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Lys 1 Ala Asn Pro Val 5 Asn Asp Leu Cys 10 Tyr Pro Gly Asp Phe Asn Asp 15
Tyr Glu Glu Leu 20 Lys His Leu Leu Ser 25 Arg Ile Asn His Phe Glu Lys 30
Ile Gln Ile 35 Ile Pro Lys Ser 40 Trp Ser Ser His Glu Ala Ser Leu 45
Gly Val 50 Ser Ser Ala Cys Pro 55 Tyr Gln Gly Lys Ser 60 Ser Phe Phe Arg 65
Asn Val Val Trp Leu 70 Ile Lys Lys Asn Ser Thr Tyr Pro Thr Ile Lys 80
Arg Ser Tyr Asn 85 Asn Thr Asn Gln Glu Asp 90 Leu Leu Val Leu Trp Gly 95
Ile His His Pro 100 Asn Asp Ala Ala Glu 105 Gln Thr Lys Leu Tyr Gln Asn 110
Pro Thr Thr Tyr Ile Ser Val Gly 120 Thr Ser Thr Leu Asn Gln Arg Leu 125
Val Pro Arg Ile Ala Thr Arg 135 Ser Lys Val Asn Gly Gln Ser Gly Arg 140
Met Glu Phe Phe Trp Thr 150 Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe 160
145 Glu Ser Asn Gly Asn 165 Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile Val 175
Lys

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<210> 63

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 63

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Lys 1 Ala Ser Pro Ala 5 Asn Asp Leu Cys 10 Tyr Pro Gly Asp Phe Asn Asp 15
Tyr Glu Glu Leu 20 Lys His Leu Leu Ser 25 Arg Ile Asn His Phe Glu Lys 30
Ile Gln Ile 35 Ile Pro Arg Ser 40 Trp Ser Asn His Asp Ala Ser Ser 45
Gly Val 50 Ser Ser Ala Cys Pro 55 Tyr Asn Gly Arg Ser Ser Phe Phe Arg 60
Asn Val Val Trp Leu 70 Ile Lys Lys Asp Asn Ala Tyr Pro Thr Ile Lys 80
Arg Ser Tyr Asn 85 Asn Thr Asn Gln Glu Asp 90 Leu Leu Val Leu Trp Gly 95
Ile His His Pro 100 Asn Asp Ala Ala Glu 105 Gln Thr Lys Leu Tyr Gln Asn 110
Pro Thr Thr Tyr Ile Ser Val Gly 120 Thr Ser Thr Leu Asn Gln Arg Leu 125
Val Pro Arg Ile Ala Thr Arg 135 Ser Lys Val Asn Gly Gln Ser Gly Arg 140
Met Glu Phe Phe Trp Thr 150 Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe 160
145 Glu Ser Asn Gly Asn 165 Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile Val 175
Lys

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<210> 64

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 64

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Lys Ala Asn Pro Thr Asn Asp Leu Cys Tyr Pro Gly Ser Phe Asn Asp
1      5      10      15
Tyr Glu Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu Lys
20      25      30
Ile Gln Ile Ile Pro Lys Ser Ser Trp Ser Asn His Glu Ala Ser Ser
35      40      45
Gly Val Ser Ser Ala Cys Pro Tyr Gln Gly Thr Pro Ser Phe Phe Arg
50      55      60
Asn Val Val Trp Leu Ile Lys Lys Asn Asn Ala Tyr Pro Thr Ile Lys
65      70      75      80
Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu Trp Gly
85      90      95
Ile His His Pro Asn Asn Glu Ala Glu Gln Thr Arg Leu Tyr Gln Asn
100      105      110
Pro Thr Thr Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg Leu
115      120      125
Val Pro Arg Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly Arg
130      135      140
Met Glu Phe Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe
145      150      155      160
Glu Ser Asn Gly Asn Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile Val
165      170      175
Lys

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<210> 65

<211> 177

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 65

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Lys Asp Asn Pro Val Asn Gly Leu Cys Tyr Pro Gly Asp Phe Asn Asp
1      5      10      15
Tyr Glu Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu Lys
20      25      30
Ile Gln Ile Ile Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser Leu
35      40      45
Gly Val Ser Ser Ala Cys Pro Tyr Leu Gly Arg Ser Ser Phe Phe Arg
50      55      60
Asn Val Val Trp Leu Ile Lys Lys Asn Ser Thr Tyr Pro Thr Ile Lys
65      70      75      80
Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu Trp Gly
85      90      95
Ile His His Pro Asn Asp Ala Ala Glu Gln Ile Lys Leu Tyr Gln Asn
100      105      110
Pro Asn Thr Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg Leu
115      120      125
Val Pro Arg Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly Arg
130      135      140
Met Glu Phe Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe
145      150      155      160
Glu Ser Asn Gly Asn Phe Ile Ala Pro Glu Asn Ala Tyr Lys Ile Val
165      170      175
Lys

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<210> 66

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 66

Arg	Ser	Lys	Ala	Tyr	Ser	Asn	Cys	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
1				5					10					15	
Ala	Ser	Leu	Arg	Ser	Leu	Val	Ala	Ser	Ser	Gly	Thr	Leu	Glu	Phe	Asn
			20					25					30		
Asn	Glu	Ser	Phe	Asn	Trp	Thr	Gly	Val	Thr	Gln	Asn	Gly	Thr	Ser	Ser
		35					40					45			
Ala	Cys	Ile	Arg	Arg	Ser	Asn	Asn	Ser	Phe	Phe	Ser	Arg	Leu	Asn	Trp
	50					55					60				
Leu	Thr	His	Leu	Lys	Phe	Lys	Tyr	Pro	Ala	Leu	Asn	Val	Thr	Met	Pro
65					70					75					80
Asn	Asn	Glu	Gln	Phe	Asp	Lys	Leu	Tyr	Ile	Trp	Gly	Val	His	His	Pro
				85					90					95	
Gly	Thr	Asp	Asn	Asp	Gln	Ile	Phe	Leu	Tyr	Ala	Gln	Ala	Ser	Gly	Arg
			100					105					110		
Ile	Thr	Val	Ser	Thr	Lys	Arg	Ser	Gln	Gln	Thr	Val	Ile	Pro	Asn	Ile
		115					120					125			
Gly	Ser	Arg	Pro	Arg	Val	Arg	Asn	Ile	Pro	Ser	Arg	Ile	Ser	Ile	Tyr
	130					135					140				
Trp	Thr	Ile	Val	Lys	Pro	Gly	Asp	Ile	Leu	Leu	Ile	Asn	Ser	Thr	Gly
145					150					155					160
Asn	Leu	Ile	Ala	Pro	Arg	Gly	Tyr	Phe	Lys	Ile	Arg	Ser			
				165					170						

<210> 67

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 67

Arg	Ser	Lys	Ala	Tyr	Ser	Asn	Cys	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr
1				5					10					15	
Ala	Ser	Leu	Arg	Ser	Leu	Val	Ala	Ser	Ser	Gly	Thr	Leu	Glu	Phe	Asn
			20					25					30		
Asn	Glu	Ser	Phe	Asn	Trp	Thr	Gly	Val	Thr	Gln	Asn	Gly	Thr	Ser	Ser
		35					40					45			
Ala	Cys	Lys	Arg	Gly	Ser	Asn	Asn	Ser	Phe	Phe	Ser	Arg	Leu	Asn	Trp
	50					55					60				
Leu	Thr	His	Ser	Lys	Phe	Lys	Tyr	Pro	Ala	Leu	Asn	Val	Thr	Met	Pro
65					70					75					80
Asn	Asn	Glu	Gln	Phe	Asp	Lys	Leu	Tyr	Ile	Trp	Gly	Val	His	His	Pro
				85					90					95	
Ser	Thr	Asp	Asn	Asp	Gln	Ile	Phe	Leu	Tyr	Ala	Gln	Ala	Ser	Gly	Arg
			100					105					110		
Ile	Thr	Val	Ser	Thr	Lys	Arg	Ser	Gln	Gln	Thr	Val	Ile	Pro	Asn	Ile
		115					120					125			
Gly	Ser	Arg	Pro	Arg	Val	Arg	Asn	Ile	Pro	Ser	Arg	Ile	Ser	Ile	Tyr
	130					135					140				
Trp	Thr	Ile	Val	Lys	Pro	Gly	Asp	Ile	Leu	Leu	Ile	Asn	Ser	Thr	Gly
145					150					155					160
Asn	Leu	Ile	Ala	Pro	Arg	Gly	Tyr	Phe	Lys	Ile	Arg	Ser			
				165					170						

<210> 68

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 68

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Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
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Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 20      25      30
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
 35      40      45
Ala Cys Lys Arg Arg Ser Asn Asn Ser Phe Phe Ser Arg Leu Asn Trp
 50      55      60
Leu Thr His Leu Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
 65      70      75
Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
 85      90      95
Gly Thr Asp Asn Asp Gln Ile Ser Leu Tyr Ala Gln Ala Ser Gly Arg
100     105     110
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
115     120     125
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
130     135     140
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
145     150     155     160
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser
165     170

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<210> 69

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 69

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Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
 1      5      10      15
Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 20      25      30
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
 35      40      45
Ala Cys Lys Arg Arg Ser Asn Lys Ser Phe Phe Ser Arg Leu Asn Trp
 50      55      60
Leu Thr Gln Leu Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
 65      70      75
Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
 85      90      95
Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Gln Ala Ser Gly Arg
100     105     110
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
115     120     125
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
130     135     140
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
145     150     155     160
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser
165     170

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<210> 70

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

60701534.txt

<400> 70

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Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
1      5      10      15
Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
20     25     30
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Ser
35     40     45
Ala Cys Ile Arg Arg Ser Asn Lys Ser Phe Phe Ser Arg Leu Asn Trp
50     55     60
Leu Thr His Ser Lys Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
65     70     75     80
Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
85     90     95
Gly Thr Asp Asn Asp Gln Thr Phe Leu Tyr Ala Gln Ala Ser Gly Arg
100    105    110
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
115    120    125
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
130    135    140
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
145    150    155    160
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser
165    170

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<210> 71

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 71

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Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
1      5      10      15
Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
20     25     30
Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln Asn Gly Thr Ser Tyr
35     40     45
Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe Phe Ser Arg Leu Asn Trp
50     55     60
Leu Thr His Leu Glu Phe Lys Tyr Pro Ala Leu Asn Val Thr Met Pro
65     70     75     80
Asn Asn Glu Lys Phe Asp Lys Leu Tyr Ile Trp Gly Val His His Pro
85     90     95
Gly Thr Asp Asn Asp Gln Ile Phe Leu Tyr Ala Arg Ala Ser Gly Arg
100    105    110
Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn Ile
115    120    125
Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile Tyr
130    135    140
Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr Gly
145    150    155    160
Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser
165    170

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<210> 72

<211> 176

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 72

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Lys Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly His Phe Ala Asp

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60701534.txt

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1      5      10      15
Tyr Glu Glu Leu Arg Glu Gln Leu Ser Val Ser Ser Phe Glu Arg
20
Phe Glu Ile Phe Pro Lys Ser Ser Trp Pro Asn His Thr Val Thr Gly
35
Val Ser Ala Ser Cys Ser His Asn Gly Glu Ser Ser Phe Tyr Arg Asn
50
Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser Lys
65 70 75 80
Ser Tyr Ala Asn Asn Lys Glu Lys Glu Val Leu Val Leu Trp Gly Val
85 90 95
His His Pro Pro Asn Ile Gly Asp Gln Lys Ala Leu Tyr His Thr Glu
100
Asn Ala Tyr Val Ser Val Val Ser His Tyr Ser Arg Lys Phe Thr
115
Pro Glu Ile Ala Lys Arg Pro Lys Val Arg Asp Gln Glu Gly Arg Ile
130 135 140
Asn Tyr Tyr Trp Thr Leu Leu Glu Pro Gly Asp Thr Ile Ile Phe Glu
145 150 155 160
Ala Asn Gly Asn Leu Ile Ala Pro Arg Tyr Ala Phe Ala Leu Ser Arg
165 170 175

```

<210> 73
 <211> 177
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

```

<400> 73
Lys Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly His Phe Ala Asp
1      5      10      15
Tyr Glu Glu Leu Arg Glu Gln Leu Ser Val Ser Ser Phe Glu Arg
20
Phe Glu Ile Phe Pro Lys Glu Ser Ser Trp Pro Asn His Thr Val Thr
35
Gly Val Ser Ala Ser Cys Ser His Asn Gly Lys Ser Phe Tyr Arg
50
Asn Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser
65 70 75 80
Lys Ser Tyr Ala Asn Asn Lys Glu Lys Glu Val Leu Val Leu Trp Gly
85 90 95
Val His His Pro Pro Asn Ile Gly Asp Gln Met Thr Leu Tyr His Lys
100
Glu Asn Ala Tyr Val Ser Val Val Ser Ser His Tyr Ser Arg Lys Phe
115
Thr Pro Glu Ile Ala Lys Arg Pro Lys Val Arg Asp Gln Glu Gly Arg
130 135 140
Ile Asn Tyr Tyr Trp Thr Leu Leu Glu Pro Gly Asp Thr Ile Ile Phe
145 150 155 160
Glu Ala Asn Gly Asn Leu Ile Ala Pro Arg Tyr Ala Phe Ala Leu Ser
165 170 175
Arg

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<210> 74
 <211> 178
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

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<400> 74
Thr Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly Tyr Phe Ala Asp

```

60701534.txt

```

1      5      10      15
Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu Arg
20
Phe Glu Ile Phe Pro Lys Glu Ser Ser Trp Pro Asn His Thr Val Thr
35
Lys Gly Val Thr Ala Ser Cys Ser His Asn Gly Lys Ser Ser Phe Tyr
50
Arg Asn Leu Leu Trp Leu Thr Gly Lys Asn Gly Leu Tyr Pro Asn Leu
65
Ser Met Ser Tyr Val Asn Asn Lys Glu Lys Glu Val Leu Val Leu Trp
85
Gly Val His His Pro Pro Asn Ile Gly Asp Gln Arg Ala Leu Tyr His
100
Thr Glu Asn Ala Tyr Val Ser Val Val Ser Ser His Tyr Ser Arg Lys
115
Phe Thr Pro Glu Ile Ala Lys Arg Pro Lys Val Arg Asp Gln Glu Gly
130
Arg Ile Asn Tyr Tyr Trp Thr Leu Leu Glu Pro Gly Asp Thr Ile Ile
145
Phe Glu Ala Asn Gly Asn Leu Ile Ala Pro Arg Tyr Ala Phe Ala Leu
165
Ser Arg
170

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<210> 75
 <211> 178
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

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<400> 75
Thr Ser Ser Ser Asp Asn Gly Thr Cys Tyr Pro Gly Asp Phe Ile Asp
1      5      10      15
Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu Arg
20
Phe Glu Ile Phe Pro Lys Thr Ser Ser Trp Pro Asn His Asp Ser Asn
35
Lys Gly Val Thr Ala Ala Cys Pro His Ala Gly Ala Lys Ser Phe Tyr
50
Lys Asn Leu Ile Trp Leu Val Lys Lys Gly Asn Ser Tyr Pro Lys Leu
65
Ser Lys Ser Tyr Ile Asn Asp Lys Gly Lys Glu Val Leu Val Leu Trp
85
Gly Ile His His Pro Ser Thr Ser Ala Asp Gln Gln Ser Leu Tyr Gln
100
Asn Ala Asp Ala Tyr Val Phe Val Gly Ser Ser Arg Tyr Ser Lys Lys
115
Phe Lys Pro Glu Ile Ala Ile Arg Pro Lys Val Arg Asp Gln Glu Gly
130
Arg Met Asn Tyr Tyr Trp Thr Leu Val Glu Pro Gly Asp Lys Ile Thr
145
Phe Glu Ala Thr Gly Asn Leu Val Val Pro Arg Tyr Ala Phe Ala Met
165
Glu Arg
170

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<210> 76
 <211> 33
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

60701534.txt

<400> 76
 Pro Leu Ile Leu Arg Asp Cys Ser Val Ala Gly Trp Leu Leu Gly Asn
 1 5 10 15
 Pro Met Cys Asp Glu Phe Ile Asn Val Pro Glu Trp Ser Tyr Ile Val
 20 25 30
 Glu

<210> 77
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 77
 Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser Ser Gly Val Ser Ser
 1 5 10 15
 Ala Cys Pro Tyr Leu Gly Ser Pro Ser Phe
 20 25

<210> 78
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 78
 Pro Lys Ser Ser Trp Ser Ser His Glu Ala Ser Leu Gly Val Ser Ser
 1 5 10 15
 Ala Cys Pro Tyr Gln Gly Lys Ser Ser Phe
 20 25

<210> 79
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 79
 Pro Arg Ser Ser Trp Ser Asn His Asp Ala Ser Ser Gly Val Ser Ser
 1 5 10 15
 Ala Cys Pro Tyr Asn Gly Arg Ser Ser Phe
 20 25

<210> 80
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 80
 Pro Lys Ser Ser Trp Ser Asn His Glu Ala Ser Ser Gly Val Ser Ser
 1 5 10 15
 Ala Cys Pro Tyr Gln Gly Thr Pro Ser Phe
 20 25

<210> 81
 <211> 26
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 81
 Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser Leu Gly Val Ser Ser
 1 5 10 15
 Ala Cys Pro Tyr Leu Gly Arg Ser Ser Phe
 20 25

<210> 82
 <211> 75
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 82
 Ile Leu Asp Gly Glu Asn Cys Thr Leu Ile Asp Ala Leu Leu Gly Asp
 1 5 10 15
 Pro Gln Cys Asp Gly Phe Gln Asn Lys Lys Trp Asp Leu Phe Val Glu
 20 25 30
 Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
 35 40 45
 Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 50 55 60
 Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln
 65 70 75

<210> 83
 <211> 75
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 83
 Ile Leu Asp Gly Glu Asn Cys Thr Leu Ile Asp Ala Leu Leu Gly Asp
 1 5 10 15
 Pro Gln Cys Asp Gly Phe Gln Asn Lys Asn Trp Asp Leu Phe Val Glu
 20 25 30
 Arg Ser Lys Ala Tyr Ser Asn Cys Tyr Pro Tyr Asp Val Pro Asp Tyr
 35 40 45
 Ala Ser Leu Arg Ser Leu Val Ala Ser Ser Gly Thr Leu Glu Phe Asn
 50 55 60
 Asn Glu Ser Phe Asn Trp Thr Gly Val Thr Gln
 65 70 75

<210> 84
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 84
 Asn Gly Thr Ser Ser Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe
 Page 28

1 5 15

<210> 85
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 85
Asn Gly Thr Ser Ser Ala Cys Lys Arg Gly Ser Asn Asn Ser Phe
1 5 10 15

<210> 86
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 86
Asn Gly Thr Ser Ser Ala Cys Lys Arg Arg Ser Asn Asn Ser Phe
1 5 10 15

<210> 87
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 87
Asn Gly Thr Ser Ser Ala Cys Lys Arg Arg Ser Asn Lys Ser Phe
1 5 10 15

<210> 88
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 88
Asn Gly Thr Ser Ser Ala Cys Ile Arg Arg Ser Asn Lys Ser Phe
1 5 10 15

<210> 89
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 89
Asn Gly Thr Ser Tyr Ala Cys Ile Arg Arg Ser Asn Asn Ser Phe
1 5 10 15

<210> 90
 <211> 71
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 90
 Pro Leu Gln Leu Gly Asn Cys Ser Val Ala Gly Trp Ile Leu Gly Asn
 1 5 10 15
 Pro Glu Cys Glu Leu Leu Ile Ser Lys Glu Ser Trp Ser Tyr Ile Val
 20 25 30
 Glu Lys Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly His Phe Ala
 35 40 45
 Asp Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu
 50 55 60
 Arg Phe Glu Ile Phe Pro Lys
 65 70

<210> 91
 <211> 71
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 91
 Pro Leu Gln Leu Gly Asn Cys Ser Val Ala Gly Trp Ile Leu Gly Asn
 1 5 10 15
 Pro Glu Cys Glu Leu Leu Ile Ser Lys Glu Ser Trp Ser Tyr Ile Val
 20 25 30
 Glu Thr Pro Asn Pro Glu Asn Gly Thr Cys Tyr Pro Gly Tyr Phe Ala
 35 40 45
 Asp Tyr Glu Glu Leu Arg Glu Gln Leu Ser Ser Val Ser Ser Phe Glu
 50 55 60
 Arg Phe Glu Ile Phe Pro Lys
 65 70

<210> 92
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 92
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Cys
 1 5 10 15
 Ser His Asn Gly Lys Ser Ser Phe
 20

<210> 93
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 93
 Glu Ser Ser Trp Pro Asn His Thr Val Thr Gly Val Ser Ala Ser Cys
 1 5 10 15

Ser His Asn Gly Glu Ser Ser Phe
20

<210> 94
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 94
Glu Ser Ser Trp Pro Asn His Thr Val Thr Lys Gly Val Thr Ala Ser
1 5 10 15
Cys Ser His Asn Gly Lys Ser Ser Phe
20 25

<210> 95
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 95
Thr Ser Ser Trp Pro Asn His Asp Ser Asn Lys Gly Val Thr Ala Ala
1 5 10 15
Cys Pro His Ala Gly Ala Lys Ser Phe
20 25

<210> 96
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 96
Glu Leu Lys His Leu Leu Ser Arg Ile Asn His Phe Glu Lys Ile Gln
1 5 10 15
Ile Ile

<210> 97
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic peptide

<400> 97
Pro Lys Ser Ser Trp Ser Asp His Glu Ala Ser Ser Gly Val Ser Ser
1 5 10 15
Ala

<210> 98
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 98

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

<210> 99

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 99

Pro	Arg	Ser	Ser	Trp	Ser	Asn	His	Asp	Ala	Ser	Ser	Gly	Val	Ser	Ser
1				5					10					15	
Ala															

<210> 100

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 100

Pro	Lys	Ser	Ser	Trp	Ser	Asn	His	Glu	Ala	Ser	Ser	Gly	Val	Ser	Ser
1				5					10					15	
Ala															

<210> 101

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 101

Pro	Lys	Ser	Ser	Trp	Ser	Asp	His	Glu	Ala	Ser	Leu	Gly	Val	Ser	Ser
1				5					10					15	
Ala															

<210> 102

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 102

Phe	Ser	Arg	Leu	Asn	Trp	Leu
1				5		

<210> 103
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 103
 Tyr Arg Asn Leu Leu Trp Leu Thr
 1 5

<210> 104
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 104
 Tyr Lys Asn Leu Ile Trp Leu Val
 1 5

<210> 105
 <211> 37
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 105
 Phe Arg Asn Val Val Trp Leu Ile Lys Lys Asn Ser Thr Tyr Pro Thr
 1 5 10 15
 Ile Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu
 20 25 30
 Trp Gly Ile His His
 35

<210> 106
 <211> 37
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 106
 Phe Arg Asn Val Val Trp Leu Ile Lys Lys Asp Asn Ala Tyr Pro Thr
 1 5 10 15
 Ile Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu
 20 25 30
 Trp Gly Ile His His
 35

<210> 107
 <211> 37
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 107

Phe Arg Asn Val Val Trp Leu Ile Lys Lys Asn Asn Ala Tyr Pro Thr
 1 5 10 15
 Ile Lys Arg Ser Tyr Asn Asn Thr Asn Gln Glu Asp Leu Leu Val Leu
 20 25 30
 Trp Gly Ile His His
 35

<210> 108

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 108

Gly Val Ser Ser Ala Cys Pro Tyr Gln Gly Lys Ser Ser Phe
 1 5 10

<210> 109

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 109

Gly Val Ser Ser Ala Cys Pro Tyr Leu Gly Arg Ser Ser Phe
 1 5 10

<210> 110

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 110

Gly Val Ser Ser Ala Cys Pro Tyr Asn Gly Arg Ser Ser Phe
 1 5 10

<210> 111

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 111

Gly Val Ser Ser Ala Cys Pro Tyr Gln Gly Thr Pro Ser Phe
 1 5 10

<210> 112

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 112

Gly Val Ser Ser Ala Cys Pro Tyr Leu Gly Ser Pro Ser Phe
1 5 10

<210> 113

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 113

Val Thr Met Pro Asn Asn Glu Gln Phe Asp Lys Leu Tyr Ile Trp Gly
1 5 10 15
Val His His

<210> 114

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 114

Val Thr Met Pro Asn Asn Glu Lys Phe Asp Lys Leu Tyr Ile Trp Gly
1 5 10 15
Val His His

<210> 115

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 115

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

<210> 116

<211> 74

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic peptide

<400> 116

Ala Tyr Val Phe Val Gly Ser Ser Arg Tyr Ser Lys Lys Phe Lys Pro
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```

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

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<210> 117
 <211> 73
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

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<400> 117
Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg Leu Val Pro Arg
1           5           10           15
Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly Arg Met Glu Phe
      20      25      30
Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe Glu Ser Asn
      35      40      45
Gly Asn Phe Ile Ala Pro Glu Tyr Ala Tyr Lys Ile Val Lys Lys Gly
      50      55      60
Asp Ser Thr Ile Met Lys Ser Glu Leu
65      70

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<210> 118
 <211> 73
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

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<400> 118
Tyr Ile Ser Val Gly Thr Ser Thr Leu Asn Gln Arg Leu Val Pro Lys
1           5           10           15
Ile Ala Thr Arg Ser Lys Val Asn Gly Gln Ser Gly Arg Met Glu Phe
      20      25      30
Phe Trp Thr Ile Leu Lys Pro Asn Asp Ala Ile Asn Phe Glu Ser Asn
      35      40      45
Gly Asn Phe Ile Ala Pro Glu Asn Ala Tyr Lys Ile Val Lys Lys Gly
      50      55      60
Asp Ser Thr Ile Met Lys Ser Glu Leu
65      70

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<210> 119
 <211> 72
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

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<400> 119
Arg Ile Thr Val Ser Thr Lys Arg Ser Gln Gln Thr Val Ile Pro Asn
1           5           10           15
Ile Gly Ser Arg Pro Arg Val Arg Asn Ile Pro Ser Arg Ile Ser Ile
      20      25      30
Tyr Trp Thr Ile Val Lys Pro Gly Asp Ile Leu Leu Ile Asn Ser Thr
      35      40      45

```

Gly Asn Leu Ile Ala Pro Arg Gly Tyr Phe Lys Ile Arg Ser Gly Lys
 50 55 60
 Ser Ser Ile Met Arg Ser Asp Ala
 65 70

<210> 120
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 120
 Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser Lys Ser Tyr Ala Asn Asn
 1 5 10 15
 Lys Glu Lys Glu Val Leu Val Leu Trp Gly Val His His Pro Pro Asn
 20 25 30
 Ile Gly Asp Gln Lys Ala Leu Tyr His Thr Glu Asn
 35 40

<210> 121
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 121
 Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser Lys Ser Tyr Ala Asn Asn
 1 5 10 15
 Lys Glu Lys Glu Val Leu Val Leu Trp Gly Val His His Pro Pro Asn
 20 25 30
 Ile Gly Asp Gln Met Thr Leu Tyr His Lys Glu Asn
 35 40

<210> 122
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 122
 Gly Lys Asn Gly Leu Tyr Pro Asn Leu Ser Met Ser Tyr Val Asn Asn
 1 5 10 15
 Lys Glu Lys Glu Val Leu Val Leu Trp Gly Val His His Pro Pro Asn
 20 25 30
 Ile Gly Asp Gln Arg Ala Leu Tyr His Thr Glu Asn
 35 40

<210> 123
 <211> 44
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 123
 Lys Lys Gly Asn Ser Tyr Pro Lys Leu Ser Lys Ser Tyr Ile Asn Asp
 1 5 10 15

Lys Gly Lys Glu Val Leu Val Leu Trp Gly Ile His His Pro Ser Thr
 20 25 30
 Ser Ala Asp Gln Gln Ser Leu Tyr Gln Asn Ala Asp
 35 40

<210> 124
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 124
 Thr His Leu Glu Phe Lys Tyr Pro Ala Leu Asn
 1 5 10

<210> 125
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 125
 Thr His Leu Lys Phe Lys Tyr Pro Ala Leu Asn
 1 5 10

<210> 126
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 126
 Thr His Ser Lys Phe Lys Tyr Pro Ala Leu Asn
 1 5 10

<210> 127
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 127
 Thr Gln Leu Lys Phe Lys Tyr Pro Ala Leu Asn
 1 5 10

<210> 128
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic peptide

<400> 128
 Thr Arg Lys Gly Ile His Ile Gly Pro Gly Gln Ala Trp Tyr Thr Thr
 Page 38

1 5
Gly Asp Ile Thr Gly
20

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