

SEQUENCE LISTING

<110> Sanofi

<120> Insulin analogs having reduced insulin receptor binding affinity

<130> DE2018/059

<150> EP 18 306 657.0

<151> 2018-12-11

<150> EP 18 306 658.8

<151> 2018-12-11

<150> EP 18 306 659.6

<151> 2018-12-11

<160> 97

<170> BiSSAP 1.3.6

<210> 1

<211> 21

<212> PRT

<213> Homo sapiens

<220>

<223> Chain A

<400> 1

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

Glu	Asn	Tyr	Cys	Asn
				20

<210> 2

<211> 30

<212> PRT

<213> Homo sapiens

<220>

<223> Chain B

<400> 2

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Tyr
1				5					10					15	

Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Pro	Lys	Thr
			20					25					30

<210> 3

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 3

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
				20											

<210> 4

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 4

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Tyr
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Pro	Lys			
			20					25							

<210> 5

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 5

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
				20											

<210> 6

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 6

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Leu
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Pro	Lys			
			20					25							

<210> 7
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 7
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Gly
20

<210> 8
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 8
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Trp
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys
20 25

<210> 9
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 9
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 10
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

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

<210> 11
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 11
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 12
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 12
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys
20 25

<210> 13
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 13
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 14
<211> 30
<212> PRT
<213> Artificial Sequence

<220>

<223> Chain B

<400> 14

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

<210> 15

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 15

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 16

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 16

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Tyr
1				5				10						15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Ala	Tyr	Thr	Pro	Lys			
			20					25							

<210> 17

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 17

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 18
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 18
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Glu Tyr Thr Pro Lys
20 25

<210> 19
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 19
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 20
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

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

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

<220>
<223> Chain A

<400> 21
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Asn
 20

<210> 22
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 22
 Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Leu Tyr Thr Pro Lys
 20 25

<210> 23
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain A

<400> 23
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Asn
 20

<210> 24
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 24
 Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
 20 25

<210> 25
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Chain A

<400> 25

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
				20											

<210> 26

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 26

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	His
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	His	Tyr	Thr	Pro	Lys			
			20					25							

<210> 27

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 27

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Gly											
			20												

<210> 28

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 28

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

<210> 29
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 29
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln Leu
1 5 10 15
Glu Asn Tyr Cys Gly
20

<210> 30
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

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

<210> 31
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 31
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 32
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 32
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu His
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys
20 25

<210> 33
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 33
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Gly
20

<210> 34
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 34
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Trp
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys
20 25

<210> 35
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 35
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 36
<211> 29
<212> PRT
<213> Artificial Sequence

<220>

<223> Chain B

<400> 36

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

<210> 37

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 37

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 38

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 38

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Val
1				5				10						15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Phe	Tyr	Thr	Pro	Lys			
			20					25							

<210> 39

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 39

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 40
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 40
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys
20 25

<210> 41
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 41
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 42
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 42
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe His Tyr Thr Pro Lys
20 25

<210> 43
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 43
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Asn
 20

<210> 44
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 44
 Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Ile Tyr Thr Pro Lys
 20 25

<210> 45
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain A

<400> 45
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Gly
 20

<210> 46
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 46
 Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Trp Tyr Thr Pro Lys
 20 25

<210> 47
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Chain A

<400> 47

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
				20											

<210> 48

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 48

Phe	Val	Asn	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Tyr
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Val	Tyr	Thr	Pro	Lys			
			20					25							

<210> 49

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 49

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Gly											
				20											

<210> 50

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 50

Phe	Val	Glu	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Tyr
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Val	Tyr	Thr	Pro	Lys			
			20					25							

<210> 51
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 51
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 52
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

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

<210> 53
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 53
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 54
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 54
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu His
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Ala Tyr Thr Pro Lys
20 25

<210> 55
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 55
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 56
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 56
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu His
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe His Tyr Thr Pro Lys
20 25

<210> 57
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 57
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 58
<211> 29
<212> PRT
<213> Artificial Sequence

<220>

<223> Chain B

<400> 58

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

<210> 59

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 59

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 60

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 60

Phe	Val	Glu	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Ile
1				5				10						15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Ile	Tyr	Thr	Pro	Lys			
			20					25							

<210> 61

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 61

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5				10						15	
Glu	Asn	Tyr	Cys	Gly											
			20												

<210> 62
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 62
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Ile
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Trp Tyr Thr Pro Lys
20 25

<210> 63
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 63
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 64
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 64
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Ile
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 65
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 65
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Gly
 20

<210> 66
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 66
 Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Ile
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
 20 25

<210> 67
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain A

<400> 67
 Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
 1 5 10 15
 Glu Asn Tyr Cys Asn
 20

<210> 68
 <211> 29
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Chain B

<400> 68
 Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Leu
 1 5 10 15
 Leu Val Cys Gly Glu Arg Gly Phe Ala Tyr Thr Pro Lys
 20 25

<210> 69
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Chain A

<400> 69

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
				20											

<210> 70

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 70

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

<210> 71

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain A

<400> 71

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Glu	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Gly											
			20												

<210> 72

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 72

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

<210> 73
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 73
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Gly
20

<210> 74
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 74
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Trp Tyr Thr Pro Lys
20 25

<210> 75
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 75
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 76
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 76
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 77
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 77
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Asn
20

<210> 78
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

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

<210> 79
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain A

<400> 79
Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln Leu
1 5 10 15
Glu Asn Tyr Cys Gly
20

<210> 80
<211> 29
<212> PRT
<213> Artificial Sequence

<220>

<223> Chain B

<400> 80

Phe	Val	Glu	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Val
1				5					10					15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Val	Tyr	Thr	Pro	Lys			
			20					25							

<210> 81

<211> 21

<212> PRT

<213> Bos

<220>

<223> Chain A

<400> 81

Gly	Ile	Val	Glu	Gln	Cys	Cys	Ala	Ser	Val	Cys	Ser	Leu	Tyr	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 82

<211> 30

<212> PRT

<213> Bos

<220>

<223> Chain B

<400> 82

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

<210> 83

<211> 21

<212> PRT

<213> Sus

<220>

<223> Chain A

<400> 83

Gly	Ile	Val	Glu	Gln	Cys	Cys	Thr	Ser	Ile	Cys	Ser	Leu	Tyr	Gln	Leu
1				5					10					15	
Glu	Asn	Tyr	Cys	Asn											
			20												

<210> 84
<211> 30
<212> PRT
<213> Sus

<220>
<223> Chain B

<400> 84
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Ala
20 25 30

<210> 85
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 85
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Leu Tyr Thr Pro Lys
20 25

<210> 86
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 86
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 87
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 87
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Ile Tyr Thr Pro Lys
20 25

<210> 88
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 88
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 89
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 89
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Tyr
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 90
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 90
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Ile
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Ile Tyr Thr Pro Lys
20 25

<210> 91
<211> 29
<212> PRT
<213> Artificial Sequence

<220>

<223> Chain B

<400> 91

Phe	Val	Glu	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Ile
1				5				10						15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Ile	Tyr	Thr	Pro	Lys			
			20					25							

<210> 92

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 92

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

<210> 93

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 93

Phe	Val	Glu	Gln	His	Leu	Cys	Gly	Ser	His	Leu	Val	Glu	Ala	Leu	Ile
1				5				10						15	
Leu	Val	Cys	Gly	Glu	Arg	Gly	Phe	Val	Tyr	Thr	Pro	Lys			
			20					25							

<210> 94

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Chain B

<400> 94

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

<210> 95
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 95
Phe Val Asn Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 96
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 96
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25

<210> 97
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Chain B

<400> 97
Phe Val Glu Gln His Leu Cys Gly Ser His Leu Val Glu Ala Leu Val
1 5 10 15
Leu Val Cys Gly Glu Arg Gly Phe Val Tyr Thr Pro Lys
20 25