

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
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<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
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<210> 4
<211> 29
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<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
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<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
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<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
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<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
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<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

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<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

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<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
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<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
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<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							