sequence listing_ST25

SEQUENCE LISTING

<110> AURIGENE DISCOVERY TECHNOLOGIES LIMITED

<120> IMMUNOSUPPRESSION MODULATING COMPOUNDS

<130> FPAA2481PCT

<150> 1805/CHE/2010
<151> 2010-06-25

<150> US 61/381,593
<151> 2010-09-10

<160> 148

<170> PatentIn version 3.5

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Pro Pro Thr Phe Ser Pro Ala Leu Leu Val Val Thr Glu Gly Asp Asn
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Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val Leu
20 25 30

Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala
35 40 45

Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg Val
50 55 60

Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg Ala
65 70 75 80

Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu Ala
85 90 95

Pro Lys Ala Gln Ile Lys Glu Ser Leu Arg Ala Glu Leu Arg Val Thr
100 105 110

Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro Arg
115 120 125

Ser Ala Gly Gln Phe Gln Thr Leu Val
130 135

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Pro Pro Thr Phe Ser
1 5

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Ala Thr Phe Thr Cys Ser Phe
1 5

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Ser Asn Thr Ser Glu Ser Phe
1 5

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<222> (31)..(37)
<223> C-Strand

<400> 5

Val Leu Asn Trp Tyr Arg Met
1 5

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<223> C-C' loop

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Ser Pro Ser Asn Gln
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<223> C'-strand

<400> 7

Thr Asp Lys Leu Ala Ala Phe Pro
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Glu Asp
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<222> (53)..(56)
<223> C" strand

<400> 9

Arg Ser Gln Pro
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<223> C"-D-loop

<400> 10

Gly Gln Asp Cys Arg
1 5

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<223> D-strand

<400> 11

Phe Arg Val Thr Gln
1 5

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<212> PRT
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<220>
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<222> (67)..(71)
<223> DE loop

<400> 12

Leu Pro Asn Gly Arg
1 5

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<223> E strand

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Asp Phe His Met Ser Val
1 5

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<211> 9
<212> PRT
<213> Homo sapiens

<220>
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<222> (86)..(94)
<223> F-strand

<400> 14

Gly Thr Tyr Leu Cys Gly Ala Ile Ser
1 5

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<211> 5
<212> PRT
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<220>
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<222> (95)..(99)
<223> F-G loop

<400> 15

Leu Ala Pro Lys Ala
1 5

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<211> 4
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<220>
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<223> G-strand

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<400> 16

Gln Ile Lys Glu
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<210> 17
<211> 137
<212> PRT
<213> Mus sp.

<220>
<221> PEPTIDE
<222> (1)..(137)
<223> Mouse-PD-1

<400> 17

Ser Leu Thr Phe Tyr Pro Ala Trp Leu Thr Val Ser Glu Gly Ala Asn
1 5 10 15

Ala Thr Phe Thr Cys Ser Leu Ser Asn Trp Ser Glu Asp Leu Met Leu
20 25 30

Asn Trp Asn Arg Leu Ser Pro Ser Asn Gln Thr Glu Lys Gln Ala Ala
35 40 45

Phe Cys Asn Gly Leu Ser Gln Pro Val Gln Asp Ala Arg Phe Gln Ile
50 55 60

Ile Gln Leu Pro Asn Arg His Asp Phe His Met Asn Ile Leu Asp Thr
65 70 75 80

Arg Arg Asn Asp Ser Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu His
85 90 95

Pro Lys Ala Lys Ile Glu Glu Ser Pro Gly Ala Glu Leu Val Val Thr
100 105 110

Glu Arg Ile Leu Glu Thr Ser Thr Arg Tyr Pro Ser Pro Ser Pro Lys
115 120 125

Pro Glu Gly Arg Phe Gln Gly Met Val
130 135

<210> 18
<211> 137
<212> PRT
<213> Rattus sp

<220>

<221> PEPTIDE
<222> (1)..(137)
<223> Rat- PD-1

<400> 18

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Gln Leu Ser Trp Gln Ser Gly Trp Leu Leu Val Ser Glu Gly Ala Asn
1               5                  10                  15

Ala Thr Phe Thr Cys Ser Phe Ser Asn Trp Ser Glu Asp Leu Lys Leu
            20                  25                  30

Asn Trp Tyr Arg Leu Ser Pro Ser Asn Gln Thr Glu Lys Gln Ala Ala
        35                  40                  45

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

Val Gln Leu Pro Asn Gly His Asp Phe His Met Asn Ile Leu Asp Ala
65                  70                  75                  80

Arg Arg Asn Asp Ser Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu Pro
                85                  90                  95

Pro Lys Ala Gln Ile Lys Glu Ser Pro Gly Ala Glu Leu Val Val Thr
            100                 105                 110

Glu Arg Ile Leu Glu Thr Pro Thr Arg Tyr Pro Arg Pro Ser Pro Lys
        115                 120                 125

Pro Glu Gly Gln Phe Gln Gly Leu Val
    130                 135
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<210> 19
<211> 137
<212> PRT
<213> Canis sp

<220>
<221> PEPTIDE
<222> (1)..(137)
<223> Dog -PD-1

<400> 19

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

Ala Thr Phe Thr Cys Ser Leu Ala Asp Ile Pro Asp Ser Phe Val Leu
            20                  25                  30
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Asn Trp Tyr Arg Leu Ser Pro Arg Asn Gln Thr Asp Lys Leu Ala Ala
35 40 45

Phe Gln Glu Asp Arg Ile Glu Pro Gly Arg Asp Arg Arg Phe Arg Val
50 55 60

Met Arg Leu Pro Asn Gly Arg Asp Phe His Met Ser Ile Val Ala Ala
65 70 75 80

Arg Leu Asn Asp Ser Gly Ile Tyr Leu Cys Gly Ala Ile Tyr Leu Pro
85 90 95

Pro Asn Thr Gln Ile Asn Glu Ser Pro Arg Ala Glu Leu Ser Val Thr
100 105 110

Glu Arg Thr Leu Glu Pro Pro Thr Gln Ser Pro Ser Pro Pro Pro Arg
115 120 125

Leu Ser Gly Gln Leu Gln Gly Leu Val
130 135

<210> 20
<211> 137
<212> PRT
<213> Equus sp

<220>
<221> PEPTIDE
<222> (1)..(137)
<223> Horse -PD-1

<400> 20

Pro Leu Thr Phe Ser Pro Ala Arg Leu Met Val Pro Glu Gly Ala Asn
1 5 10 15

Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu His Phe Val Leu
20 25 30

Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala
35 40 45

Phe Pro Glu Asp Ser Ser Gln Pro Gly Arg Ser Gly Arg Phe Arg Val
50 55 60

Thr Arg Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Leu Ala Ala
65 70 75 80

Arg Arg Asn Asp Ser Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu Pro
85 90 95

Pro Lys Thr Gln Ile Asn Glu Ser Pro Arg Ala Glu Leu Thr Val Thr
100 105 110

Glu Arg Ile Pro Glu Pro Pro Thr Glu His Pro Ser Pro Pro Pro Ser
115 120 125

Pro Ala Gly Gln Leu Gln Gly Leu Val
130 135

<210> 21
<211> 4
<212> PRT
<213> Homo sapiens

<220>
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<222> (49)..(52)
<223> C' strand to C'C'' loop

<400> 21

Phe Pro Glu Asp
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<210> 22
<211> 14
<212> PRT
<213> Homo sapiens

<220>
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<222> (43)..(56)
<223> C' strand to C'' strand

<400> 22

Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Arg Ser Gln Pro
1 5 10

<210> 23
<211> 13
<212> PRT
<213> Homo sapiens

<220>
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<222> (38)..(50)
<223> CC' loop to C' strand

<400> 23

Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro
1 5 10

<210> 24
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<221> PEPTIDE
<222> (95)..(103)
<223> FG loop to G strand

<400> 24

Leu Ala Pro Lys Ala Gln Ile Lys Glu
1 5

<210> 25
<211> 10
<212> PRT
<213> Homo sapiens

<220>
<221> PEPTIDE
<222> (62)..(71)
<223> D strand to DE loop

<400> 25

Phe Arg Val Thr Gln Leu Pro Asn Gly Arg
1 5 10

<210> 26
<211> 7
<212> PRT
<213> Mus sp

<220>
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<222> (17)..(23)
<223> B strand

<400> 26

Ala Thr Phe Thr Cys Ser Leu
1 5

<210> 27
<211> 7
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (24)..(30)
<223> BC loop

<400> 27

Ser Asn Trp Ser Glu Asp Leu
1 5

<210> 28
<211> 7
<212> PRT
<213> Mus sp

<220>
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<222> (31)..(37)
<223> C-Strand

<400> 28

Met Leu Asn Trp Asn Arg Leu
1 5

<210> 29
<211> 5
<212> PRT
<213> Mus sp

<220>
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<223> C-C' loop

<400> 29

Ser Pro Ser Asn Gln
1 5

<210> 30
<211> 8
<212> PRT
<213> Mus sp

<220>
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<222> (43)..(50)
<223> C'-strand

<400> 30

Thr Glu Lys Gln Ala Ala Phe Cys
1 5

<210> 31
<211> 4
<212> PRT
<213> Mus sp

<220>
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<222> (53)..(56)
<223> C" strand

<400> 31

Leu Ser Gln Pro
1

<210> 32
<211> 5
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (57)..(61)
<223> C"-D-loop

<400> 32

Val Gln Asp Ala Arg
1 5

<210> 33
<211> 5
<212> PRT
<213> Mus sp

<220>
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<223> D-strand

<400> 33

Phe Gln Ile Ile Gln
1 5

<210> 34
<211> 9
<212> PRT
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<220>
<221> PEPTIDE
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<223> F-strand

<400> 34

Gly Ile Tyr Leu Cys Gly Ala Ile Ser
1 5

<210> 35

<211> 5
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (95)..(99)
<223> F-G loop

<400> 35

Leu His Pro Lys Ala
1 5

<210> 36
<211> 4
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
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<223> G-strand

<400> 36

Lys Ile Glu Glu
1

<210> 37
<211> 4
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (49)..(52)
<223> C' strand to C'C'' loop

<400> 37

Phe Cys Asn Gly
1

<210> 38
<211> 14
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (43)..(56)
<223> C' strand to C'' strand

<400> 38

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Thr Glu Lys Gln Ala Ala Phe Cys Asn Gly Leu Ser Gln Pro
1 5 10

<210> 39
<211> 13
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (38)..(50)
<223> CC' loop to C' strand

<400> 39

Ser Pro Ser Asn Gln Thr Glu Lys Gln Ala Ala Phe Cys
1 5 10

<210> 40
<211> 9
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (95)..(103)
<223> FG loop to G strand

<400> 40

Leu His Pro Lys Ala Lys Ile Glu Glu
1 5

<210> 41
<211> 10
<212> PRT
<213> Mus sp

<220>
<221> PEPTIDE
<222> (62)..(71)
<223> D strand to DE loop

<400> 41

Phe Gln Ile Ile Gln Leu Pro Asn Arg His
1 5 10

<210> 42
<211> 7
<212> PRT
<213> Artificial

<220>
<223> C terminal modified with NH2 group

<220>
<221> MISC_FEATURE
<222> (1)..(7)
<223> BC loop having C terminal modified with NH2 group

<400> 42

Ser Asn Thr Ser Glu Ser Phe
1 5

<210> 43
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Ac or CH3CO group attached at the N terminal and C terminal modified with NH2 group

<220>
<221> MISC_FEATURE
<222> (1)..(7)
<223> Ac group added on N terminal

<400> 43

Ser Asn Thr Ser Glu Ser Phe
1 5

<210> 44
<211> 19
<212> PRT
<213> Artificial

<220>
<223> C terminal modified with NH2

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> C terminal modified with NH2

<400> 44

Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Ser Gln Pro
1 5 10 15

Gly Gln Asp

<210> 45
<211> 11
<212> PRT
<213> Artificial

<220>

<223> C terminal modified with NH2 group

<220>
<221> MISC_FEATURE
<222> (1)..(11)
<223> C terminal modified with NH2

<400> 45

Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg
1 5 10

<210> 46
<211> 14
<212> PRT
<213> Artificial

<220>
<223> C terminal modified with NH2 group

<220>
<221> MISC_FEATURE
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<223> C terminal modified with NH2 group

<400> 46

Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu
1 5 10

<210> 47
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal ;
branching at Lys6

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> Branch sequence Sequence ID 4 attached to Lys6

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> Amino Hexanoic acid present in between Gln 11 and Lys12

<400> 47

Phe Arg Val Thr Gln Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala
1 5 10 15

Gln Ile Lys Glu
20

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<210> 48
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched at LYS6 with Seq ID 4 and C terminal modified with NH2

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> branched amino acid sequence, Seq ID 4 attached to the Lys6 residue

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> C terminal modified with NH2

<400> 48

Phe Arg Val Thr Gln Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala
1 5 10 15

Gln Ile Lys Glu
20

<210> 49
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide at LYS8 with Seq ID 4

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branched amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 49

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 50
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched at LYS6 with a peptide of sequence SNQTDK and C terminal modified with NH2

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> branched amino acid sequence SNQTDK attached to the Lys6 residue

<400> 50

Ser Asn Gln Thr Asp Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala
1 5 10 15

Gln Ile Lys Glu
20

<210> 51
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branch amino acid sequence at Lys6 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branched amino acid sequence SNQTDK attached to the Lys6 residue

<400> 51

Ser Asn Gln Thr Asp Lys Val Leu Asn Trp Tyr Arg Met Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 52
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branch amino acid sequence at Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branched amino acid sequence SNQTDK attached to the Lys8 residue

<400> 52

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 53
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and two branched amino acid sequence; attached at Lys8 residue and Lys14 residue

<220>
<221> MISC_FEATURE
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<223> first branch amino acid sequence SNQTDK attached to the Lys8 residue and the second branch amino acid sequence LAP attached to the Lys14 residue

<400> 53

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Lys Ala Gln
1 5 10 15

Ile Lys Glu

<210> 54
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal ; branch amino acid sequence attached to the Lys8 residue; and all amino acids are D amino acids

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 54

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 55
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branch amino acid sequence attached to the Lys14 residue

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> branch amino acid sequence, KDTQNS attached to the Lys14 residue

<400> 55

Glu Lys Ile Gln Ala Lys Pro Ala Tyr Trp Asn Leu Val Lys Asp Thr
1 5 10 15

Gln Asn Ser

<210> 56
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Biotin-Ahx attached to the N terminal; and branching at Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 56

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 57
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; C6 lipid attached to the N terminal; and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8

residue

<400> 57

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 58
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Ac (CH3CO) group attached to the N terminal; and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 58

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 59
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branch amino acid sequence at Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence attached to the Lys8 residue; the branch amino acid sequence is Sequence ID 4 with a modified PEG molecule (NH2-[PEG]11-CO-) attached to its N terminal

<400> 59

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

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<210> 60
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 ; and a modified PEG molecule (NH-[PEG]11-CO-) between Lys8 and Lue9

<220>
<221> MISC_FEATURE
<222> (1)..(17)
<223> Branched amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 60

Ser Asn Thr Ser Glu Ser Phe Lys Leu Ala Pro Lys Ala Gln Ile Lys
1 5 10 15

Glu

<210> 61
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence is Sequence ID 4 with a C6 lipid group attached to its N terminal

<400> 61

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 62
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8; and C6 lipid group attached to both Branch & N-terminal

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 62

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 63
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; and two olefinic amino acids joined together forming a loop structure

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> Two Xaa are olefinic amino acids in position 8 and 12, where the olefinic amino acids are joined forming a loop structure

<400> 63

Ser Asn Thr Ser Glu Ser Phe Xaa Pro Lys Ala Xaa Ser Asn Thr Ser
1 5 10 15

Glu Ser Phe

<210> 64
<211> 34
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with two olefinic amino acids joined together forming a loop structure and a branch amino acid sequence attached to Lys13 residue

<220>
<221> MISC_FEATURE
<222> (1)..(34)
<223> two Xaa residues are olefinic amino acids positioned at 8 and 12, where the olefinic amino acids are joined forming a loop structure

<220>

<221> MISC_FEATURE
<222> (1)..(34)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys13 residue

<400> 64

Ser Asn Thr Ser Glu Ser Phe Xaa Pro Lys Ala Xaa Lys Ser Asn Thr
1 5 10 15

Ser Glu Ser Phe Phe Arg Val Thr Gln Leu Ala Pro Lys Ala Gln Ile
20 25 30

Lys Glu

<210> 65
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; having two Xaa (olefinic amino acids) in position 8 and 12, and a branching at Lys13

<220>
<221> MISC_FEATURE
<222> (1)..(13)
<223> Two olefinic amino acids (Xaa) are in position 8 and 12, and are joined forming a loop structure

<220>
<221> MISC_FEATURE
<222> (1)..(13)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys13 residue

<400> 65

Ser Asn Thr Ser Glu Ser Phe Xaa Pro Lys Ala Xaa Lys
1 5 10

<210> 66
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 66

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Gln
1 5 10 15

Ile Lys Glu

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

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(21)

<400> 67

Ser Asn Thr Ser Glu Ser Phe Phe Arg Val Thr Gln Leu Ala Pro Lys
1 5 10 15

Ala Gln Ile Lys Glu
20

<210> 68
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(22)

<400> 68

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 69
<211> 29
<212> PRT
<213> Artificial

<220>

<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(29)

<400> 69

Ser Asn Thr Ser Glu Ser Phe Lys Ser Asn Thr Ser Glu Ser Phe Phe
1 5 10 15

Arg Val Thr Gln Leu Ala Pro Lys Ala Gln Ile Lys Glu
20 25

<210> 70
<211> 8
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(8)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 70

Ser Asn Thr Ser Glu Ser Phe Lys
1 5

<210> 71
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(17)
<223> Branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 71

Ser Asn Thr Ser Glu Ser Phe Lys Leu Ala Pro Lys Ala Gln Ile Lys
1 5 10 15

Glu

<210> 72
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> Branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 72

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Lys Ala Gln
1 5 10 15

Ile Lys Glu

<210> 73
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(14)
<223> Branched amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 73

Ser Asn Thr Ser Glu Ser Phe Lys Lys Ala Gln Ile Lys Glu
1 5 10

<210> 74
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; and a lipid attached to Lys 21

<220>
<221> MISC_FEATURE
<222> (1)..(22)

<223> Branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C16 lipid attached to Lys 21

<400> 74

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 75
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 and a lipid attached to Lys 17

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C16 lipid attached to Lys 17

<400> 75

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 76
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with two branches

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> first branch amino acid sequence Sequence ID 4 attached to the

Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> a second branch LAP attached to Lys 14

<400> 76

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Lys Lys Ala
1 5 10 15

Gln Ile Lys Glu
20

<210> 77
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with two branch

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> first branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> second branch PKA attached to Lys 16

<400> 77

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Lys
1 5 10 15

Gln Ile Lys Glu
20

<210> 78
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence LAP attached to the Lys8 residue

<400> 78

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 79
<211> 18
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys4

<220>
<221> MISC_FEATURE
<222> (1)..(18)
<223> branch amino acid sequence LAP attached to the Lys4 residue

<400> 79

Leu Ala Pro Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala Gln Ile
1 5 10 15

Lys Glu

<210> 80
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(9)

<400> 80

Leu Ala Pro Lys Ala Gln Ile Lys Glu
1 5

<210> 81
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue; and a lipid attached to Lys 10

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C16 lipid attached to Lys 10

<400> 81

Ser Asn Thr Ser Glu Ser Phe Lys Phe Lys Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 82
<211> 16
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(16)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 82

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

<210> 83
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys13

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence Sequence ID 4 attached to the Lys13 residue

<400> 83

Ser Asn Thr Ser Glu Ser Phe Phe Arg Val Thr Gln Lys Leu Ala Pro

1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 84
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(14)

<400> 84

Phe Arg Val Thr Gln Leu Ala Pro Lys Ala Gln Ile Lys Glu
1 5 10

<210> 85
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and a lipid attached to Lys 10

<220>
<221> MISC_FEATURE
<222> (1)..(21)
<223> Branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(21)
<223> C8 (CH3(CH2)6CO) lipid attached to Lys 10

<400> 85

Ser Asn Thr Ser Glu Ser Phe Lys Phe Lys Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 86
<211> 22
<212> PRT
<213> Artificial

<220>

<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and a lipid attached to Lys 17

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C8 lipid attached to Lys 17

<400> 86

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 87
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 ; and a lipid attached to Lys 21

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C8 (CH3(CH2)6CO) lipid attached to Lys 21

<400> 87

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 88
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and

branching at Lys8 and D-amino acids in the branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence Sequence ID 4 attached to the Lys8 residue

<400> 88

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 89
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys15

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, FSESTNS attached to the Lys15 residue

<400> 89

Glu Lys Ile Gln Ala Lys Pro Ala Leu Gln Thr Val Arg Phe Lys Phe
1 5 10 15

Ser Glu Ser Thr Asn Ser
20

<210> 90
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys15; The peptide sequence is an retro inverso and contains all D-amino acid

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, FSESTNS attached to the Lys15 residue

<400> 90

Glu Lys Ile Gln Ala Lys Pro Ala Leu Gln Thr Val Arg Phe Lys Phe
1 5 10 15

Ser Glu Ser Thr Asn Ser
20

<210> 91
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue and PEG-20 attached to Lys21

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 91

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 92
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and PEG-20 attached to Lys21

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 92

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 93
<211> 22

<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and PEG-20 attached to Lys17

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 93

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 94
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue and a mini PEG molecule attached to Lys10

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 94

Ser Asn Thr Ser Glu Ser Phe Lys Phe Lys Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 95
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue and PEG-10 attached to Lys17

<220>
<221> MISC_FEATURE

<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 95

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 96
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue and PEG-20 attached to Lys21

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 96

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 97
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 residue and CH3CO group attached to the Lys10

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 97

Ser Asn Thr Ser Glu Ser Phe Lys Phe Lys Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu

20

<210> 98
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and CH3CO group attached to Lys17

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> CH3CO group attached to the Lys17

<400> 98

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 99
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> CH3CO group attached to the Lys21

<400> 99

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

sequence listing_ST25

<210> 100
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal and branching at Lys8 and lipid group attached

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C6lipid group attached to the Lys17

<400> 100

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 101
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Biotin-Ahx attached at the N terminal; and branching at Lys8 residue; all are D Amino acids

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 101

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 102
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Biotin-Ahx attached at the N terminal; and branching at Lys14 ; all are D Amino acids

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> branch amino acid sequence, KDTQNS attached to the Lys14 residue

<400> 102

Glu Lys Ile Gln Ala Lys Pro Ala Tyr Trp Asn Leu Val Lys Asp Thr
1 5 10 15

Gln Asn Ser

<210> 103
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 and lactum bond present between Glu17 and Lys21

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 103

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Glu Ala Gln Ile Lys Glu
20

<210> 104
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 , lactum bond present between Lys10 and Glu14

<220>
<221> MISC_FEATURE
<222> (1)..(22)

<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 104

Ser Asn Thr Ser Glu Ser Phe Lys Phe Lys Val Thr Gln Glu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 105
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue, lactum bond present between Glu13 and Lys17

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, Sequence ID 4 attached to the Lys8 residue

<400> 105

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Glu Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 106
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; a lipid attached to Lys21 and Ac (CH3CO) group attached to both N terminal and branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C8 lipid attached to the Lys21 residue

<400> 106

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 107
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; lipid attached to Lys21 and Ac (CH3CO) group attached to both N terminal and branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue; Ac (CH3CO) group is attached to its N terminal

<400> 107

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 108
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; a branching at Lys8 ; a lipid attached to Lys21 and Ac (CH3CO) group attached to both N terminal of straight chain and branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue; with Ac (CH3CO) group attached to its N terminal

<400> 108

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 109
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 ; a lipid attached to Lys21 and Ac (CH3CO) group attached to both N terminal and branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue with Ac (CH3CO) group attached to its N terminal

<400> 109

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 110
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SNWSEDL attached to the Lys8 residue

<400> 110

Ser Asn Trp Ser Glu Asp Leu Lys Phe Gln Ile Ile Gln Leu His Pro
1 5 10 15

Lys Ala Lys Ile Glu Glu
20

<210> 111
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys3

<220>

<221> MISC_FEATURE
<222> (1)..(17)
<223> branch amino acid sequence, SEQUENCE ID 8 attached to the Lys3 residue

<400> 111

Glu Asp Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala Gln Ile Lys
1 5 10 15

Glu

<210> 112
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SEQUENCE ID 8 attached to the Lys8 residue

<400> 112

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 113
<211> 20
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys6

<220>
<221> MISC_FEATURE
<222> (1)..(20)
<223> branch amino acid sequence, SEQUENCE ID 8 attached to the Lys6 residue

<400> 113

Leu Ala Pro Lys Ala Lys Phe Arg Val Thr Gln Leu Ala Pro Lys Ala
1 5 10 15

Gln Ile Lys Glu
20

<210> 114
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys7

<220>
<221> MISC_FEATURE
<222> (1)..(21)
<223> Branch amino acid sequence, SEQUENCE ID 8 attached to the Lys7 residue

<400> 114

Ser Asn Gln Thr Asp Lys Lys Phe Arg Val Thr Gln Leu Ala Pro Lys
1 5 10 15

Ala Gln Ile Lys Glu
20

<210> 115
<211> 24
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys6

<220>
<221> MISC_FEATURE
<222> (1)..(24)
<223> Branch amino acid sequence, SNQTDK attached to the Lys6 residue

<400> 115

Ser Asn Gln Thr Asp Lys Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu
1 5 10 15

Ala Pro Lys Ala Gln Ile Lys Glu
20

<210> 116
<211> 25
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys7

<220>
<221> MISC_FEATURE
<222> (1)..(25)
<223> Branch amino acid sequence, VLNWYRM attached to the Lys7 residue

<400> 116

Ser Asn Gln Thr Asp Lys Lys Gly Ile Tyr Leu Cys Gly Ala Ile Ser
1 5 10 15

Leu Ala Pro Lys Ala Gln Ile Lys Glu
20 25

<210> 117
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal;
branching at Lys3

<220>
<221> MISC_FEATURE
<222> (1)..(21)
<223> Branch amino acid sequence, VLNWYRM attached to the Lys3 residue

<400> 117

Glu Asp Lys Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys
1 5 10 15

Ala Gln Ile Lys Glu
20

<210> 118
<211> 26
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal;
branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(26)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8
residue

<400> 118

Ser Asn Thr Ser Glu Ser Phe Lys Gly Ile Tyr Leu Cys Gly Ala Ile
1 5 10 15

Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu
20 25

<210> 119
<211> 24
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(24)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 119

Ser Asn Thr Ser Glu Ser Phe Lys Val Leu Asn Trp Tyr Arg Met Leu
1 5 10 15

Ala Pro Lys Ala Gln Ile Lys Glu
20

<210> 120
<211> 26
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(26)
<223> Branch amino acid sequence, SNQTDK attached to the Lys8 residue

<400> 120

Val Leu Asn Trp Tyr Arg Met Lys Gly Ile Tyr Leu Cys Gly Ala Ile
1 5 10 15

Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu
20 25

<210> 121
<211> 18
<212> PRT
<213> Artificial

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(18)

<400> 121

Gly Ile Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile
1 5 10 15

Lys Glu

<210> 122
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys7

<220>
<221> MISC_FEATURE
<222> (1)..(21)
<223> Branch amino acid sequence, SNQTDK attached to the Lys7 residue

<400> 122

Ser Asn Gln Thr Asp Lys Lys Phe Arg Val Thr Gln Leu Ala Pro Lys
1 5 10 15

Ala Gln Ile Lys Glu
20

<210> 123
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 and lipid attached to Lys19

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, SNWSEDL attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> C16 lipid branch attached to the Lys19 residue

<400> 123

sequence listing_ST25

Ser Asn Trp Ser Glu Asp Leu Lys Phe Gln Ile Ile Gln Leu His Pro
1 5 10 15

Lys Ala Lys Ile Glu Glu
20

<210> 124
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with two branches

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> First branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Second branch MPA-NH-CH2-CH2-O-CH2-CH2-O-CO attached to the Lys17 residue

<400> 124

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 125
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> branch amino acid sequence, sNTSESF attached to the Lys8 residue

<400> 125

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 126
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 and Ser1 is D amino acid

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 126

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 127
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 and Ser in N terminal and branch are D amino acid

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 127

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 128
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; with two branches

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> First branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Second branch MPA-NH-CH2-CH2-O-CH2-CH2-O-CO attached to the Lys21 residue

<400> 128

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 129
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; with amide bond between Ser1 and Asn2 reduced at both the N terminal and branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 129

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 130
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; and D-Asn at N-terminus

<220>
<221> MISC_FEATURE

<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 130

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 131
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; and D-Asn in the branch

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 131

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 132
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; two branches

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> First branch amino acid sequence, SNWSEDL attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Second branch MPA-NH-CH2-CH2-O-CH2-CH2-O-CO attached to the Lys17 residue

<400> 132

Ser Asn Trp Ser Glu Asp Leu Lys Phe Gln Ile Ile Gln Leu His Pro
1 5 10 15

Lys Ala Lys Ile Glu Glu
20

<210> 133
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with branching at Lys8

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 133

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 134
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 ; the amide bond between Ser1 and Asn2 at the N terminal is reduced

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 134

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 135
<211> 22

<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 ;

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue; the amide bond between Ser1 and Asn2 at the N terminal of the branch SEQUENCE ID 4 is reduced

<400> 135

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 136
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; the amide bond between Asn2 and Thr3 at the N terminal is reduced

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 136

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 137
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 ;

<220>

<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue; the amide bond between Asn2 and Thr3 at the N terminal of the branch SEQUENCE ID 4 is reduced

<400> 137

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 138
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; the amide bonds between Asn2 and Thr3 at the N terminal and the branch are reduced

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue ; the amide bonds between Asn2 and Thr3 at the N terminal of the branch is reduced

<400> 138

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 139
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence; with two branches

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> First branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Second branch C16 lipid attached to the Lys 17 residue

<400> 139

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 140
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Xaa is Orn residue present at the 8th position and branch amino acid sequence attached to the Orn8 residue

<220>
<221> MISC_FEATURE
<222> (1)..(14)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Orn8 residue

<400> 140

Ser Asn Thr Ser Glu Ser Phe Xaa Lys Ala Gln Ile Lys Glu
1 5 10

<210> 141
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Xaa is 2,3-diaminopropionic acid residue present at the 8th position and a branch amino acid sequence attached to the Xaa residue

<220>
<221> MISC_FEATURE
<222> (1)..(14)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Dpr8 residue

<400> 141

Ser Asn Thr Ser Glu Ser Phe Xaa Lys Ala Gln Ile Lys Glu
1 5 10

<210> 142
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; Xaa is 2,4-diaminobutric acid
residue present at the 8th position and a branch amino acid sequence, attached to the Xaa residue

<220>
<221> MISC_FEATURE
<222> (1)..(14)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Dbu8 residue

<400> 142

Ser Asn Thr Ser Glu Ser Phe Xaa Lys Ala Gln Ile Lys Glu
1 5 10

<210> 143
<211> 23
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; lactum bond present between Lys17 and Glu21

<220>
<221> MISC_FEATURE
<222> (1)..(23)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 143

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Thr Gln Leu Ala Pro
1 5 10 15

Lys Ile Ala Gln Glu Lys Glu
20

<210> 144
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; lactum bond present between Lys9 and Glu13

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 144

Ser Asn Thr Ser Glu Ser Phe Lys Lys Arg Val Thr Glu Leu Ala Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 145
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; lactum bond present between Lys11 and Glu15

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 145

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Lys Thr Gln Leu Glu Pro
1 5 10 15

Lys Ala Gln Ile Lys Glu
20

<210> 146
<211> 22
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal; branching at Lys8 residue; lactum bond present between Glu12 and Lys16

<220>
<221> MISC_FEATURE
<222> (1)..(22)
<223> Branch amino acid sequence, SEQUENCE ID 4 attached to the Lys8 residue

<400> 146

Ser Asn Thr Ser Glu Ser Phe Lys Phe Arg Val Glu Gln Leu Ala Lys
1 5 10 15

Pro Ala Gln Ile Lys Glu
20

<210> 147
<211> 5

<212> PRT
<213> Artificial

<220>
<223> Peptide Sequence with NH2 modified C terminal

<220>
<221> MISC_FEATURE
<222> (1)..(5)

<400> 147

Leu Ala Pro Lys Ala
1 5

<210> 148
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Branched peptide Sequence with NH2 modified C terminal;
branching at Ala5

<220>
<221> MISC_FEATURE
<222> (1)..(19)
<223> Branch amino acid sequence, SNQTDK attached to the Ala5 residue

<400> 148

Leu Ala Pro Lys Ala Phe Arg Val Thr Gln Leu Ala Pro Lys Ala Gln
1 5 10 15

Ile Lys Glu