<110> HANMI PHARM. CO., LTD.

<120> Composition for Treating Diabetes Mellitus Comprising Insulin and a GLP-1/glucagon dual agonist

<130> OPA15084-PCT

<150> KR10-2014-0066554
<151> 2014-05-30

<160> 72

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<220>
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<210> 2
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<220>
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<400> 2
acagcattgt tccacaatcg cacgcttctg cagggaccc 39

<210> 3
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<220>
<223> Primer

<400> 3
tccctgcaga agcgtggcgc ggtggaacaa tgctgtacc 39

<210> 4
<211> 39
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<220>
<223> Primer

<400> 4
ggtacagcat tgttccaccg cgccacgctt ctgcaggga 39

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<211> 36

<212> DNA
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<220>
<223> Primer

<400> 5
ctctaccagc tggaaaacgc gtgtaactga ggatcc 36

<210> 6
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<220>
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<400> 6
ggatcctcag ttacacgcgt tttccagctg gtagag 36

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<400> 7
gttaaccaac acttgtgtgc gtcacacctg gtggaagct 39

<210> 8
<211> 39
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<220>
<223> Primer

<400> 8
agcttccacc aggtgtgacg cacacaagtg ttggttaac 39

<210> 9
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 9
ctagtgtgcg gggaacgagc gttcttctac acacccaag 39

<210> 10
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 10
cttgggtgtg tagaagaacg ctcgttcccc gcacactag 39

<210> 11
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<220>
<223> Primer

<400> 11
gtgtgcgggg aacgaggcgc gttctacaca cccaagacc 39

<210> 12
<211> 39
<212> DNA
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<220>
<223> Primer

<400> 12
ggtcttgggt gtgtagaacg cgcctcgttc cccgcacac 39

<210> 13
<211> 39
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<220>
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<400> 13
tgcggggaac gaggcttcgc gtacacaccc aagacccgc 39

<210> 14
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<220>
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<400> 14
gcgggtcttg ggtgtgtacg cgaagcctcg ttccccgca 39

<210> 15
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 15
ccagcatctg ctccctcgaa cagctggaga actactg 37

<210> 16
<211> 37
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<220>
<223> Primer

<400> 16
cagtagttct ccagctgttc gagggagcag atgctgg 37

<210> 17
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 17
cagcatctgc tccctcaacc agctggagaa ctac 34

<210> 18
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 18
gtagttctcc agctggttga gggagcagat gctg 34

<210> 19
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<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 1

<400> 19
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtgcgat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

<210> 20
<211> 86
<212> PRT

<213> Artificial Sequence

<220>
<223> Analog 1

<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 Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Ala Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 21
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 2

<400> 21

ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcgc ggtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

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

<220>
<223> Analog 2

<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 Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

```
Arg Gly Ala Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
 65                  70                  75                  80

Leu Glu Asn Tyr Cys Asn
                 85
```

<210> 23
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 3

<400> 23
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaacg cgtgcaac 258

<210> 24
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 3

<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 Phe Tyr Thr Pro Lys Thr Arg Arg
             20                  25                  30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
         35                  40                  45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
     50                  55                  60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
 65                  70                  75                  80

Leu Glu Asn Ala Cys Asn
                 85
```

<210> 25
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 4

<400> 25

ttcgttaacc aacacttgtg tgcgtcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

<210> 26
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 4

<400> 26
Phe Val Asn Gln His Leu Cys Ala 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 Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 27
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 5

<400> 27
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgagcgt tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

<210> 28
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 5

<400> 28
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 Ala Phe Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 29
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 6

<400> 29
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggcg cgttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

<210> 30
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 6

<400> 30
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 Ala Phe Tyr Thr Pro Lys Thr Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 31
<211> 258
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 7

<400> 31
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcgcgtacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240

ctggagaact actgcaac 258

<210> 32
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 7

<400> 32
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 Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Tyr Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 33
<211> 261
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 8

<400> 33
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gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctcgaacag 240

ctggagaact actgcaactg a 261

<210> 34
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 8

<400> 34

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 Arg Arg
20 25 30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
35 40 45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
50 55 60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Glu Gln
65 70 75 80

Leu Glu Asn Tyr Cys Asn
85

<210> 35
<211> 261
<212> DNA
<213> Artificial Sequence

<220>
<223> Analog 9

<400> 35
ttcgttaacc aacacttgtg tggctcacac ctggtggaag ctctctacct agtgtgcggg 60

gaacgaggct tcttctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120

caggtggagc tgggcggggg ccctggtgca ggcagcctgc agcccttggc cctggagggg 180

tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctcaaccag 240

ctggagaact actgcaactg a 261

<210> 36
<211> 86
<212> PRT
<213> Artificial Sequence

<220>
<223> Analog 9

<400> 36

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 Arg Arg
            20                  25                  30

Glu Ala Glu Asp Leu Gln Val Gly Gln Val Glu Leu Gly Gly Gly Pro
        35                  40                  45

Gly Ala Gly Ser Leu Gln Pro Leu Ala Leu Glu Gly Ser Leu Gln Lys
    50                  55                  60

Arg Gly Ile Val Glu Gln Cys Cys Thr Ser Ile Cys Ser Leu Asn Gln
65                  70                  75                  80

Leu Glu Asn Tyr Cys Asn
                85
```

<210> 37
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> A chain of insulin

<400> 37

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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> 38
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> B chain of insulin

<400> 38

```
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> 39
<211> 37
<212> PRT
<213> oxyntomodulin

<400> 39

```
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
  1               5                  10                  15

Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr Lys Arg Asn
            20                  25                  30

Arg Asn Asn Ile Ala
        35
```

<210> 40

<211> 30
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 40
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30

<210> 41
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 41
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Met Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 42
<211> 39
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 42
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Arg Arg Ala Gln Asp Phe Val Ala Trp Leu Lys Asn Thr Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser
35

<210> 43
<211> 39
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT

<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 43
His Gly Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser
35

<210> 44
<211> 39
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 44
His Gly Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser
35

<210> 45
<211> 42
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 45
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Arg Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Ala Ala His Ser Gln Gly Thr
20 25 30

Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp
35 40

<210> 46
<211> 30
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 46
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Met Asn Thr Lys
20 25 30

<210> 47
<211> 29
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 47
His Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Arg Gln Leu Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Met Asn Lys
20 25

<210> 48
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<220>
<221> VARIANT
<222> (20)
<223> Xaa = aminoisobutyric acid

<400> 48
His Gly Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Xaa Leu Phe Ile Glu Trp Leu Met Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 49
<211> 40
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 49
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Met Asn Gly Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser Lys
35 40

<210> 50
<211> 43
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 50
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Arg Gln Met Glu Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Ala Ala His Ser Gln Gly Thr
20 25 30

Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Lys
35 40

<210> 51
<211> 38
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 51
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Gly
1 5 10 15

Gly Gly His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met
20 25 30

Glu Glu Glu Ala Val Lys
35

<210> 52
<211> 30
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<220>
<221> VARIANT

<222> (16)
<223> Xaa = aminoisobutyric acid

<220>
<221> VARIANT
<222> (20)
<223> Xaa = aminoisobutyric acid

<400> 52
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Xaa
1 5 10 15

Glu Ala Val Xaa Leu Phe Ile Glu Trp Leu Met Asn Thr Lys
20 25 30

<210> 53
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<220>
<221> VARIANT
<222> (20)
<223> Xaa = aminoisobutyric acid

<220>
<221> VARIANT
<222> (24)
<223> Xaa = aminoisobutyric acid

<400> 53
His Gly Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Xaa Leu Phe Ile Xaa Trp Leu Met Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 54
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<220>
<221> VARIANT
<222> (24)
<223> Xaa = aminoisobutyric acid

<400> 54
His Gly Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Xaa Trp Leu Met Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 55
<211> 34
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 55
His Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Arg Gln Leu Glu Gly
1 5 10 15

Gly Gly His Ser Gln Gly Thr Phe Thr Ser Asp Leu Ser Arg Gln Leu
20 25 30

Glu Lys

<210> 56
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 56
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Ile Arg Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 57
<211> 40
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<400> 57

```
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
  1               5                  10                  15

Glu Ala Val Arg Leu Phe Ile Glu Trp Ile Arg Asn Gly Gly Pro Ser
            20                  25                  30

Ser Gly Ala Pro Pro Pro Ser Lys
        35                  40


<210>    58
<211>    37
<212>    PRT
<213>    oxyntomodulin derivative

<220>
<221>    VARIANT
<222>    (1)
<223>    This "H" refers a derivative of histidine,  4-imidazoacetyl.


<400>    58
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
  1               5                  10                  15

Glu Ala Val Lys Leu Phe Ile Glu Trp Ile Arg Asn Thr Lys Arg Asn
            20                  25                  30

Arg Asn Asn Ile Ala
        35


<210>    59
<211>    40
<212>    PRT
<213>    oxyntomodulin derivative

<220>
<221>    VARIANT
<222>    (1)
<223>    This "H" refers a derivative of histidine,  4-imidazoacetyl.


<400>    59
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Tyr Leu Asp Glu
  1               5                  10                  15

Glu Ala Val Lys Leu Phe Ile Glu Trp Ile Arg Asn Gly Gly Pro Ser
            20                  25                  30

Ser Gly Ala Pro Pro Pro Ser Lys
        35                  40


<210>    60
<211>    37
<212>    PRT
<213>    oxyntomodulin derivative

<220>
<221>    VARIANT
<222>    (1)
<223>    This "H" refers a derivative of histidine,  4-imidazoacetyl.


<400>    60
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Arg Gln Leu Glu Glu
  1               5                  10                  15
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Glu Ala Val Arg Leu Phe Ile Glu Trp Val Arg Asn Thr Lys Arg Asn
20 25 30

Arg Asn Asn Ile Ala
35

<210> 61
<211> 30
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, desamino-histidyl.

<400> 61
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Lys
20 25 30

<210> 62
<211> 29
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 62
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Cys Trp Leu Met Asn Thr
20 25

<210> 63
<211> 30
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 63
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30

<210> 64
<211> 30
<212> PRT

<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 64
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30

<210> 65
<211> 29
<212> PRT
<213> oxyntomodulin derivative'

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 65
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Cys Trp Leu Met Asn Thr
20 25

<210> 66
<211> 29
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 66
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
20 25

<210> 67
<211> 37
<212> PRT
<213> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> This "S" refers a variant of serine, d-serine.

<400> 67
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
1 5 10 15

```
Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr Lys Arg Asn
            20                  25                  30

Arg Asn Asn Ile Ala
        35


<210>    68
<211>    37
<212>    PRT
<213>    oxyntomodulin derivative

<220>
<221>    VARIANT
<222>    (1)
<223>    This "H" refers a derivative of histidine,  4-imidazoacetyl


<400>    68
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
  1               5                  10                  15

Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr Lys Arg Asn
            20                  25                  30

Arg Asn Asn Ile Ala
        35


<210>    69
<211>    37
<212>    PRT
<213>    oxyntomodulin derivative

<220>
<221>    VARIANT
<222>    (1)
<223>    This "H" refers a derivative of histidine,  4-imidazoacetyl


<220>
<221>    VARIANT
<222>    (2)
<223>    This "S" refers a variant of serine, d-serine.


<400>    69
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
  1               5                  10                  15

Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr Lys Arg Asn
            20                  25                  30

Arg Asn Asn Ile Ala
        35


<210>    70
<211>    30
<212>    PRT
<213>    Artificial Sequence

<220>
<223>    oxyntomodulin derivative


<220>
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<221> VARIANT
<222> (1)
<223> This "H" refers a derivative of histidine, 4-imidazoacetyl.

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 70
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30

<210> 71
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 71
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ala Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30

<210> 72
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> oxyntomodulin derivative

<220>
<221> VARIANT
<222> (2)
<223> Xaa = aminoisobutyric acid

<400> 72
Tyr Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
1 5 10 15

Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
20 25 30