<110> HANMI PHARM. CO., LTD.

<120> Composition for Treating Diabetes Comprising Long-acting Insulin Analogue Conjugate and Long-acting Insulinotropic Peptide Conjugate

<130> OPA15094

<150> KR10-2014-0065072
<151> 2014-05-29

<160> 41

<170> KopatentIn 2.0

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acagcattgt tccacaatcg cacgcttctg cagggaccc 39

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<220>
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<220>
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ctctaccagc tggaaaacgc gtgtaactga ggatcc 36

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<400> 6
ggatcctcag ttacacgcgt tttccagctg gtagag 36

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gttaaccaac acttgtgtgc gtcacacctg gtggaagct 39

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agcttccacc aggtgtgacg cacacaagtg ttggttaac 39

<210> 9
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<400> 9
ctagtgtgcg gggaacgagc gttcttctac acacccaag 39

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<400> 11
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<400> 13
tgcggggaac gaggcttcgc gtacacaccc aagacccgc 39

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

<210> 15
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<220>
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<400> 15
ccagcatctg ctccctcgaa cagctggaga actactg 37

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<220>
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<400> 17
cagcatctgc tccctcaacc agctggagaa ctac 34

<210> 18
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<212> DNA
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<220>
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<400> 18
gtagttctcc agctggttga gggagcagat gctg 34

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<220>
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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
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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
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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
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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
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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
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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
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> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> GLP-1(7-37)

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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<212> PRT
<213> Artificial Sequence

<220>
<223> exendin-3

<400> 40
His Ser Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys 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> 41
<211> 39
<212> PRT
<213> Artificial Sequence

<220>
<223> exendin-4

<400> 41
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys 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