

OPA17115 Sequence listing_5001264_1 (2)

<110> HANMI PHARM. CO., LTD.

<120> glucagon derivative, conjugate thereof, composition comprising same, and therapeutic use thereof

<130> OPA17115

<150> KR 10-2016-0081995
<151> 2016-06-29

<150> KR 10-2016-0182982
<151> 2016-12-29

<150> KR 10-2017-0069217
<151> 2017-06-02

<160> 50

<170> KoPatentIn 3.0

<210> 1
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Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
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Asp Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
20 25

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OPA17115 Sequence listing_5001264_1 (2)

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 Cys Asp Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
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 Cys Glu Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
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 Cys Glu Ala Asp Asp Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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 <223> Xaa is aminoisobutyric acid (Aib)

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 Cys Asp Ala Gln Asp Phe Val Gln Trp Leu Ile Asn Thr
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 Cys Asp Ala Gln Asp Phe Val Val Trp Leu Ile Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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OPA17115 Sequence listing_5001264_1 (2)

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Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
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Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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OPA17115 Sequence listing_5001264_1 (2)

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<400> 21
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OPA17115 Sequence listing_5001264_1 (2)

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

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Lys Arg Cys Lys Glu Phe Val Gln Trp Leu Met Asn Thr
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Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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  1             5             10             15
Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
             20             25

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  1             5             10             15
Lys Arg Ala Lys Cys Phe Val Gln Trp Leu Met Asn Thr
             20             25

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OPA17115 Sequence listing_5001264_1 (2)

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 1          5          10          15

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

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 1          5          10          15

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

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Trp Xaa Gln Gly Thr Phe Val Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
 1          5          10          15

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OPA17115 Sequence listing_5001264_1 (2)
 Cys Arg Ala Lys Asp Phe Val Gln Trp Leu Met Asn Thr
 20 25

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 20 25

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Arg Arg Ala Lys Asp Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)
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Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
20 25

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

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Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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 1 5 10 15
 Arg Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
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OPA17115 Sequence listing_5001264_1 (2)

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

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Tyr Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
  1           5           10           15

Arg Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr Cys
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OPA17115 Sequence listing_5001264_1 (2)

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

OPA17115 Sequence listing_5001264_1 (2)

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 1 5 10 15
 Arg Arg Ala Lys Asp Phe Val Gln Trp Leu Met Asn Thr
 20 25

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 1 5 10 15
 Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
 20 25

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<400> 43

OPA17115 Sequence listing_5001264_1 (2)

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 1 5 10 15

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

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

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 <222> (7)
 <223> Xaa is threonine, valine, or cysteine

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 <222> (10)
 <223> Xaa is tyrosine or cysteine

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<222> (12)
 <223> Xaa is lysine or cysteine

<220>
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 <222> (13)
 <223> Xaa is tyrosine or cysteine

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 <223> Xaa is leucine or cysteine

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 alpha-methyl-glutamic acid, or cysteine, or is absent;

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 serine, cysteine, or valine, or is absent

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 or cysteine, or is absent

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 cysteine, or is absent

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OPA17115 Sequence listing_5001264_1 (2)

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 <223> Xaa is valine, arginine, alanine, cysteine, glutamic acid, lysine, glutamine, alpha-methyl-glutamic acid, or leucine, or is absent;

<220>
 <221> MISC_FEATURE
 <222> (27)
 <223> Xaa is isoleucine, valine, alanine, lysine, methionine, glutamine, or arginine, or is absent

<220>
 <221> MISC_FEATURE
 <222> (28)
 <223> Xaa is glutamine, lysine, asparagine, or arginine, or is absent

<220>
 <221> MISC_FEATURE
 <222> (29)
 <223> Xaa is lysine, alanine, glycine, or threonine, or is absent

<220>
 <221> MISC_FEATURE
 <222> (30)
 <223> Xaa is cysteine, or is absent

<400> 45
 Xaa Xaa Gln Gly Thr Phe Xaa Ser Asp Xaa Ser Xaa Xaa Xaa Xaa Xaa
 1 5 10 15
 Xaa Xaa Xaa Xaa Xaa Phe Xaa Xaa Trp Leu Xaa Xaa Xaa Xaa
 20 25 30

<210> 46
 <211> 30
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> glucagon derivative

<220>
 <221> MISC_FEATURE
 <222> (2)
 <223> Xaa is aminoisobutyric acid (Aib)

<220>
 <221> MISC_FEATURE
 <222> (7)
 <223> Xaa is threonine, valine, or cysteine

<220>
 <221> MISC_FEATURE
 <222> (10)
 <223> Xaa is tyrosine or cysteine

OPA17115 Sequence listing_5001264_1 (2)

<220>
 <221> MISC_FEATURE
 <222> (12)
 <223> Xaa is lysine or cysteine

<220>
 <221> MISC_FEATURE
 <222> (15)
 <223> Xaa is aspartic acid or cysteine

<220>
 <221> MISC_FEATURE
 <222> (16)
 <223> Xaa is glutamic acid or serine

<220>
 <221> MISC_FEATURE
 <222> (17)
 <223> Xaa is lysine or arginine

<220>
 <221> MISC_FEATURE
 <222> (20)
 <223> Xaa is glutamine or lysine

<220>
 <221> MISC_FEATURE
 <222> (21)
 <223> Xaa is aspartic acid or glutamic acid

<220>
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 <222> (24)
 <223> Xaa is valine or glutamine

<220>
 <221> MISC_FEATURE
 <222> (30)
 <223> Xaa is cysteine or is absent

<400> 46
 Tyr Xaa Gln Gly Thr Phe Xaa Ser Asp Xaa Ser Xaa Tyr Leu Xaa Xaa
 1 5 10 15
 Xaa Arg Ala Xaa Xaa Phe Val Xaa Trp Leu Met Asn Thr Xaa
 20 25 30

<210> 47
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 <212> DNA
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<220>
 <223> forward primer

<400> 47

OPA17115 Sequence listing_5001264_1 (2)
cagcgacacc gaccgtcccc ccgtacttaa ggcc

34

<210> 48
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer

<400> 48
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32

<210> 49
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> glucagon derivative

<220>
<221> MISC_FEATURE
<222> (2)
<223> Xaa is aminoisobutyric acid

<400> 49
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1 5 10 15
Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
20 25

<210> 50
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<220>
<223> glucagon derivative

<220>
<221> MISC_FEATURE
<222> (2)
<223> Xaa is aminoisobutyric acid

<400> 50
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1 5 10 15
Lys Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
20 25