<110> HANMI PHARM. CO., LTD.

<120> Gluagon Derivatives

<130> OPA15332

<150> KR10-2014-0193691
<151> 2014-12-30

<160> 18

<170> KopatentIn 2.0

<210> 1
<211> 29
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<213> human glucagon

<400> 1
His Ser Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
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Arg Arg Ala Gln Asp Phe Val Gln Trp Leu Met Asn Thr
20 25

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<220>
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<222> (2)
<223> Xaa is alpha-methyl-glutamic acid

<400> 2
His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Glu
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Lys Cys Ala Lys Glu Phe Ile Gln Trp Leu Val Asn Thr
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Lys Cys Ala Lys Glu Phe Val Glu Trp Leu Val Asn Thr
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Lys Cys Ala His Glu Phe Val Glu Trp Leu Val Asn Thr
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His Xaa Gln Gly Thr Phe Thr Ser Asp Tyr Ser Lys Tyr Leu Asp Ser
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Lys Cys Ala His Glu Phe Val Glu Trp Leu Val Asn Thr
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Lys Cys Val His Glu Phe Ile Glu Trp Leu Lys Asn Thr
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<400> 8
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1 5 10 15

Lys Cys Ala His Glu Phe Ile Glu Trp Leu Lys Asn Lys
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Glu Cys Ala His Glu Phe Ile Glu Trp Leu Lys Gln Gly
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Glu Cys Ala Lys Glu Phe Ile Arg Trp Leu Lys Lys Gly
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Lys Arg Ala Lys Glu Phe Val Gln Trp Leu Met Asn Thr
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<400> 13
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<210> 15
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<220>
<223> forward primer

<400> 15
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<210> 16
<211> 33
<212> DNA
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<220>
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<400> 16
gaacggtccg gaggacgtcg actcttaaga tag 33

<210> 17
<211> 34
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<220>
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<400> 17
cagcgacacc gaccgtcccc ccgtacttaa ggcc 34

<210> 18
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<220>
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<400> 18
ctaaccgact ctcggggaag actgagctcg cc 32