【CLAIMS】

【Claim 1】

A peptide comprising the amino acid sequence of following Formula 1:

R1-X1-X2-GTFTSD-X3-X4-X5-X6-X7-X8-X9-X10-X11-X12-X13-X14-X15-X16-X17-X18-X19-X20-X21-X22-X23-X24-R2 (Formula 1)

wherein, R1 is histidine;

X1 is Aib(aminoisobutyric acid);

X2 is glutamic acid or glutamine;

X3 is leucine or tyrosine;

X4 is serine or alanine;

X5 is lysine or arginine;

X6 is glutamine or tyrosine;

X7 is leucine or methionine;

X8 is aspartic acid or glutamic acid;

X9 is glutamic acid, serine, alpha-methyl-glutamic acid or is deleted;

X10 is glutamine, glutamic acid, lysine, arginine, serine or is deleted;

X11 is alanine, arginine, valine or is deleted;

X12 is alanine, arginine, serine, valine or is deleted;

X13 is lysine, glutamine, arginine, alpha-methyl-glutamic acid or is deleted;

X14 is aspartic acid, glutamic acid, leucine or is deleted;

X15 is phenylalanine or is deleted;

X16 is isoleucine, valine or is deleted;

X17 is alanine, cysteine, glutamic acid, lysine, glutamine, alpha-methyl-glutamic acid or is deleted

X18 is tryptophan or is deleted;

X19 is alanine, isoleucine, leucine, serine, valine or is deleted;

X20 is alanine, lysine, methionine, glutamine, arginine or is deleted;

X21 is asparagine or is deleted;

X22 is alanine, glycine, threonine or is deleted;

X23 is cysteine, lysine or is deleted;

X24 is a peptide having 2 to 10 amino acids consisting of combinations

of alanine, glycine and serine, or is deleted; and
R2 is KRNRNNIA(SEQ ID NO. 32), GPSSGAPPPS(SEQ ID NO. 33), GPSSGAPPPSK(SEQ ID NO. 34), HSQGTFTSDYSKYLD(SEQ ID NO. 35), HSQGTFTSDYSRYLDK(SEQ ID NO. 36), HGEGTFTSDLSKQMEEEAVK(SEQ ID NO. 37) or is deleted.

【Claim 2】

The peptide according to claim 1, wherein the peptide is an oxyntomodulin derivative capable of activating GLP-1 receptor and glucagon receptor.

【Claim 3】

The peptide according to claim 1, wherein the peptide has anti-obesity effects.

【Claim 4】

The peptide according to claim 1, wherein X19 is leucine, X20 is methionine, X21 is asparagine, and X22 is threonine in the amino acid sequence of Formula 1.

【Claim 5】

The peptide according to claim 1, wherein one or more amino acid pairs at positions 10 and 14, 12 and 16, 16 and 20, 20 and 24, and 24 and 28 of the amino acid sequence of Formula 1 are substituted with glutamic acid or lysine which can form a ring.

【Claim 6】

The peptide according to claim 5, wherein one or more amino acid pairs at positions 10 and 14, 12 and 16, 16 and 20, 20 and 24, and 24 and 28 of the amino acid sequence of Formula 1 are substituted with glutamic acid or lysine to form a ring.

【Claim 7】

The peptide according to claim 1, wherein the peptide comprises the amino acid sequence selected from the group consisting of SEQ ID NOs. 23 to 28, and 30.

【Claim 8】

The peptide according to claim 1, wherein X24 and R2 are deleted in the amino acid sequence of Formula 1.

【Claim 9】

The peptide according to claim 1, wherein X2 is glutamine in the amino acid sequence of Formula 1.

【Claim 10】

A polynucleotide encoding the peptide of claim 1.

【Claim 11】

A pharmaceutical composition for the prevention or treatment of obesity, comprising the peptide of claim 1 as an active ingredient.

【Claim 12】

The pharmaceutical composition according to claim 11, further comprising a pharmaceutically acceptable carrier.

【Claim 13】

The pharmaceutical composition according to claim 11, wherein the composition is administered alone or in combination with other pharmaceutical formulations showing prophylactic or therapeutic effects on obesity.

【Claim 14】

The pharmaceutical composition according to claim 13, wherein the pharmaceutical formulation showing prophylactic or therapeutic effects on obesity is selected from the group consisting of a GLP-1

receptor agonist, a leptin receptor agonist, a DPP-IV inhibitor, a Y5 receptor antagonist, a Melanin-concentrating hormone (MCH) receptor antagonist, a Y2/3 receptor agonist, a MC3/4 receptor agonist, a gastric/pancreatic lipase inhibitor, a 5HT2c agonist, a β3A receptor agonist, an Amylin receptor agonist, a Ghrelin antagonist, and a Ghrelin receptor antagonist.