[CLAIMS]

[Claim 1]

Use of a pharmaceutical composition in the manufacture of a medicament for preventing or treating metabolic syndrome, liver disease, lung disease, or respiratory infections, the pharmaceutical composition comprising:

a pharmaceutically effective amount of a peptide including any one amino acid sequence of SEQ ID NOS: 21, 22, 27, 30 to 32, 34, 36, 37, 42, 43, 50 to 56, 58, 64 to 79, 83, 86, 91, 93, and 96 to 102; and

a pharmaceutically acceptable excipient,

wherein the pharmaceutical composition is used in combination with a sodium-glucose cotransporter 2 (SGLT-2) inhibitor.

[Claim 2]

The use of claim 1, wherein the peptide is in the form of a long-acting conjugate, which is represented by Formula 1 below:

[Formula 1]

X - L - F

wherein X represents a peptide including an amino acid sequence of any one of SEQ ID NOS: 21, 22, 27, 30 to 32, 34, 36, 37, 42, 43, 50 to 56, 58, 64 to 79, 83, 86, 91, 93, and 96 to 102;

L represents a linker containing ethylene glycol repeating units;

F represents an immunoglobulin Fc region; and

- represents covalent linkages between X and L and between L and F, respectively.

[Claim 3]

The use of claim 1 or 2, wherein the metabolic syndrome is any one or more selected from the group consisting of diabetes, obesity, hyperlipidemia, and dyslipidemia.

[Claim 4]

The use of claim 1 or 2, wherein the SGLT-2 inhibitor is any one or more selected from the group consisting of empagliflozin, dapagliflozin, canagliflozin, remogliflozin, remogliflozin etabonate, sergliflozin, ipragliflozin, tofogliflozin, luseogliflozin, sotagliflozin, bexagliflozin, atigliflozin, and ertugliflozin.

[Claim 5]

The use of claim 1 or 2, wherein the composition has weight loss and/or blood glucose lowering effects.

[Claim 6]

The use of claim 1 or 2, wherein the composition is administered to diabetic patients with overweight or obesity.

[Claim 7]

The use of claim 1 or 2, wherein the peptide includes any one amino acid sequence of SEQ ID NOS: 21, 22, 42, 43, 50, 77, and 96.

[Claim 8]

The use of claim 1 or 2, wherein the peptide is C-terminally amidated.

[Claim 9]

The use of claim 1 or 2, wherein the peptide has a ring formed between amino acid residues.

[Claim 10]

The use of claim 2, wherein the immunoglobulin Fc region is aglycosylated.

[Claim 11]

The use of claim 2, wherein the immunoglobulin Fc region is an IgG4 Fc region.

[Claim 12]

The use of claim 2, wherein the immunoglobulin Fc region is a dimer consisting of two polypeptide chains, wherein one end of L is linked to only one polypeptide chain of the two polypeptide chains.

[Claim 13]

The use of claim 2, wherein in the conjugate, L is linked to F and X by covalent linkages formed by reacting one end of L with an amine group or thiol group of F and reacting the other end of L with an amine group or thiol group of X, respectively.

[Claim 14]

The use of claim 2, wherein L is polyethylene glycol.

[Claim 15]

The use of claim 2, wherein a formula weight of a moiety of the ethylene glycol repeating units in L is in the range of 1 kDa to 100 kDa.