Claims

[Claim 1]

A peptide comprising a partial sequence represented by the formula (I):

P1-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-A11-A12-A13-Leu-Asp-A16-A17-Ala-Gln-A20-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-A29

wherein

P1 is a group represented by the formula:

-RA1,

-CO-RA1,

-CO-ORA1,

-CO-CORA1,

-SO-RA1,

-SO2-RA1,

-SO2-ORA1,

-CO-NRA2RA3,

-SO2-NRA2RA3, or

-C(=NRA1)-NRA2RA3

wherein RA1, RA2 and RA3 are each independently a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group;

A11 is Aib or Ala;

A12 is Ala, Ile, Lys, Phe or Pya(4);

A13 is Aib, Cha, Leu, αMePhe or αMeTyr;

A16 is Lys or Ser;

A17 is Gln or Ile;

A20 is Ala or Ser; and

A29 is Gln or Gly,

or a salt thereof.

[Claim 2] The peptide of claim 1 or a salt thereof, wherein P1 is a hydrogen atom.

[Claim 3] The peptide of claim 1 or a salt thereof, wherein A11 is Aib.

[Claim 4] The peptide of claim 1 or a salt thereof, wherein A12 is Ile.

[Claim 5] The peptide of claim 1 or a salt thereof, wherein A13 is Aib.

[Claim 6] The peptide of claim 1 or a salt thereof, wherein A16 is Lys.

[Claim 7] The peptide of claim 1 or a salt thereof, wherein A17 is Gln.

[Claim 8] The peptide of claim 1 or a salt thereof, wherein A20 is Ala.

[Claim 9] The peptide of claim 1 or a salt thereof, wherein A29 is Gly.

[Claim 10] The peptide of claim 1 or a salt thereof, having an amino acid sequence

represented by Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys- on the C-terminal side of A29.

[Claim 11] The peptide of claim 1 or a salt thereof, wherein

P^1 is a hydrogen atom;

A11 is Aib;

A12 is Ile;

A13 is Aib;

A16 is Lys;

A17 is Gln;

A20 is Ala;

A29 is Gly; and

the peptide having an amino acid sequence represented by Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys- on the C-terminal side of A29.

[Claim 12] H-Tyr-Aib-Glu-Gly-Thr-alphaMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 13] H-Tyr-Aib-Glu-Gly-Thr-alphaMePhe-Thr-Ser-Asp-Tyr-Aib-Ile-Aib-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 14] H-Tyr-Aib-Glu-Gly-Thr-alphaMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 15] H-Tyr-Aib-Glu-Gly-Thr-alphaMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH_2 or a salt thereof.

[Claim 16] A medicament comprising the peptide of claim 1 or a salt thereof.

[Claim 17] The medicament of claim 16, which is an activator of a GLP-1 receptor and a GIP receptor.

[Claim 18] The medicament of claim 16, which is an agent for the prophylaxis or treatment of obesity or diabetes.

[Claim 19] Use of a peptide of claim 1 or salt thereof in the manufacture of medicament for activating a GLP-1 receptor and a GIP receptor in a mammal.

[Claim 20] Use of the peptide of claim 1 or a salt thereof for the manufacture of an

agent for the prophylaxis or treatment of obesity or diabetes.

[Claim 21] The peptide of claim 1 or a salt thereof for use in the prophylaxis or treatment of obesity or diabetes.

Claims

[Claim 1] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 2] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-Aib-Ile-Aib-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 3] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim 4] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH_2 or a salt thereof.

[Claim 5] A medicament comprising the peptide of any one of claims 1 to 4 or a salt thereof.

[Claim 6] The medicament of claim 5, which is an activator of a GLP-1 receptor and a GIP receptor.

[Claim 7] The medicament of claim 5 for use in the prophylaxis or treatment of obesity or diabetes.

[Claim 8] Use of the peptide of any one of claims 1 to 4 or a salt thereof for the manufacture of an agent for the prophylaxis or treatment of obesity or diabetes.

[Claim 9] The peptide of any one of claims 1 to 4 or a salt thereof for use in the prophylaxis or treatment of obesity or diabetes.

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Claims

[Claim 1]

A peptide comprising a partial sequence represented by the formula (I):

P1-Tyr-Aib-Glu-Gly-Thr-αMePhe-Thr-Ser-Asp-Tyr-A11-A12-A13-Leu-Asp-A16-A17-Ala-Gln-A20-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-A29

wherein

P1 is a group represented by the formula:

RA1,

CO-RA1,

CO-ORA1,

CO-CORA1,

SO-RA1,

SO2-RA1,

SO2-ORA1,

CO-NRA2RA3,

SO2-NRA2RA3, or

C(=NRA1)-NRA2RA3

wherein RA1, RA2 and RA3 are each independently a hydrogen atom, an optionally substituted hydrocarbon group, or an optionally substituted heterocyclic group;

A11 is Aib or Ala;

A12 is Ala, Ile, Lys, Phe or Pya(4);

A13 is Aib, Cha, Leu, αMePhe or αMeTyr;

A16 is Lys or Ser;

A17 is Gln or Ile;

A20 is Ala or Ser; and

A29 is Gln or Gly,

or a salt thereof.

[Claim 2] The peptide of claim 1 or a salt thereof, wherein P1 is a hydrogen atom.

[Claim 3] The peptide of claim 1 or a salt thereof, wherein A11 is Aib.

[Claim 4] The peptide of claim 1 or a salt thereof, wherein A12 is Ile.

[Claim 5] The peptide of claim 1 or a salt thereof, wherein A13 is Aib.

[Claim 6] The peptide of claim 1 or a salt thereof, wherein A16 is Lys.

[Claim 7] The peptide of claim 1 or a salt thereof, wherein A17 is Gln.

[Claim 8] The peptide of claim 1 or a salt thereof, wherein A20 is Ala.

[Claim 9] The peptide of claim 1 or a salt thereof, wherein A29 is Gly.

[Claim 10] The peptide of claim 1 or a salt thereof, having an amino acid sequence

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~~represented by Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys- on the C-terminal side of A29.~~

~~[Claim 11] The peptide of claim 1 or a salt thereof, wherein~~

~~P^1 is a hydrogen atom;~~

~~A11 is Aib;~~

~~A12 is Ile;~~

~~A13 is Aib;~~

~~A16 is Lys;~~

~~A17 is Gln;~~

~~A20 is Ala;~~

~~A29 is Gly; and~~

~~the peptide having an amino acid sequence represented by Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys- on the C-terminal side of A29.~~

[Claim ~~12~~1] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-~~alpha~~αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim ~~13~~2] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-~~alpha~~αMePhe-Thr-Ser-Asp-Tyr-Aib-Ile-Aib-Leu-Asp-Lys-Gln-Ala-Gln-Ala-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim ~~14~~3] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-~~alpha~~αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-Lys-NH_2 or a salt thereof.

[Claim ~~15~~4] A peptide having the amino acid sequence of H-Tyr-Aib-Glu-Gly-Thr-~~alpha~~αMePhe-Thr-Ser-Asp-Tyr-Aib-Lys-Tyr-Leu-Asp-Lys-Gln-Ala-Gln-Gln-Glu-Phe-Val-Lys-Trp-Leu-Leu-Lys-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH_2 or a salt thereof.

[Claim ~~16~~5] A medicament comprising the peptide of any one of claims 1 to 4 or a salt thereof.

[Claim ~~17~~6] The medicament of claim ~~16~~5, which is an activator of a GLP-1 receptor and a GIP receptor.

[Claim ~~18~~7] The medicament of claim ~~16~~5 ~~, which is an agent~~ for use in the prophylaxis or treatment of obesity or diabetes.

~~[Claim 19] Use of a peptide of claim 1 or salt thereof in the manufacture of medicament for activating a GLP-1 receptor and a GIP receptor in a mammal.~~

[Claim ~~20~~8] Use of the peptide of any one of claims 1 to 4 or a salt thereof for the manufacture of an

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agent for the prophylaxis or treatment of obesity or diabetes.

[Claim ~~21~~9] The peptide of any one of claims 1 to 4 or a salt thereof for use in the prophylaxis or treatment of obesity or diabetes.