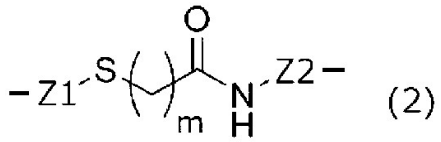
WHAT IS CLAIMED IS:

1. A cyclic peptide or a salt thereof, the cyclic peptide being a peptide having an amino acid sequence represented by X1-X2-X3-X4,

wherein the cyclic peptide contains a cyclized portion that is cyclized via covalent bonding, and

the cyclized portion includes a structure represented by Formula (2),



(2)

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic residue on a side chain,

X3 represents any amino acid residue, and

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue,

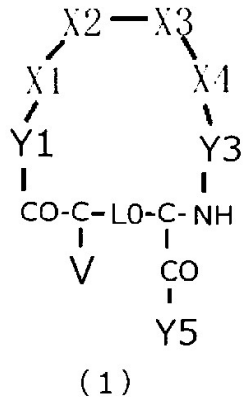
in Formula (2),

Z1 and Z2 each independently represent a linking group, and

m represents an integer of 1 to 10.

2. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide is represented by Formula (1),



(1)

in the formula,

V represents -NH-Y4 or R,

in a case where V represents -NH-Y4, L0 represents L, and in a case where V represents

R, L0 represents L1,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic group on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue,

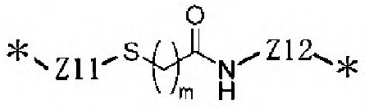
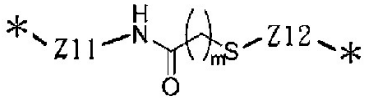
Y1 represents a single bond, or an amino acid residue or a peptide residue containing any 1 to 13 amino acid residues,

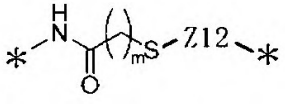
Y3 represents an amino acid residue or a peptide residue containing any 1 to 14 amino acid residues,

Y4 represents a hydrogen atom, or an amino acid residue or a peptide residue containing any 1 to 7 amino acid residues,

Y5 represents OH, or an amino acid residue or a peptide residue containing any 1 to 7 amino acid residues,

an amino terminal of X1 is bonded to a carboxyl terminal of Y1, and a carboxyl terminal of X1 is bonded to an amino terminal of X2,

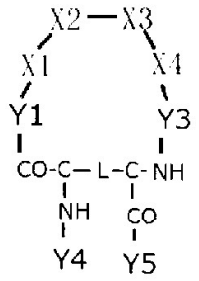
L represents a cyclized portion represented by  or , where Z11 and Z12 each independently represent a linking group, m represents an integer of 1 to 10, and * represents a position of an α-carbon atom of an amino acid main chain,

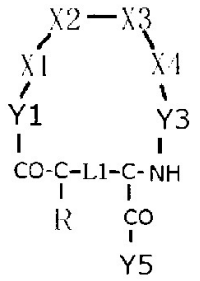
L1 represents a cyclized portion represented by , where Z12 represents a linking group, m represents an integer of 1 to 10, and * represents a position of an α-carbon atom of an amino acid main chain, and

R represents a side chain structure of an amino acid.

3. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide is represented by Formula (1A1) or Formula (1A2),





(1A1) (1A2)

in the formula,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic group on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue,

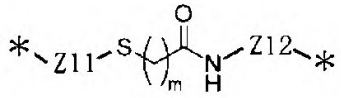
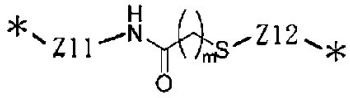
Y1 represents a single bond, or an amino acid residue or a peptide residue containing any 1 to 13 amino acid residues,

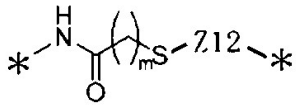
Y3 represents an amino acid residue or a peptide residue containing any 1 to 14 amino acid residues,

Y4 represents a hydrogen atom, or an amino acid residue or a peptide residue containing any 1 to 7 amino acid residues,

Y5 represents OH, or an amino acid residue or a peptide residue containing any 1 to 7 amino acid residues,

an amino terminal of X1 is bonded to a carboxyl terminal of Y1, and a carboxyl terminal of X1 is bonded to an amino terminal of X2,

L represents a cyclized portion represented by  or , where Z11 and Z12 each independently represent a linking group, m represents an integer of 1 to 10, and * represents a position of an α-carbon atom of an amino acid main chain,

L1 represents a cyclized portion represented by , where Z12 represents a linking group, m represents an integer of 1 to 10, and * represents a position of an α-carbon atom of an amino acid main chain, and

R represents a side chain structure of an amino acid.

4. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide having an amino acid sequence represented by X1-X2-X3-X4-X5,

in the formula,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic residue on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue, and

X5 represents an alanine residue, a glycine residue, a proline residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, an asparagine residue, a serine residue, a threonine residue, an aspartic acid residue, a glutamic acid residue, an arginine residue, a histidine residue, or a lysine residue.

5. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide having an amino acid sequence represented by X1-X2-X3-X4-X5,

in the formula,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic residue on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue, and

X5 represents an alanine residue, a glycine residue, a proline residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan

residue, an asparagine residue, a serine residue, a threonine residue, an aspartic acid residue, a glutamic acid residue, an arginine residue, or a histidine residue.

6. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide having an amino acid sequence represented by X1-X2-X3-X4-X5-Xn-X6,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic residue on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue,

X5 represents an alanine residue, a glycine residue, a proline residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, an asparagine residue, a serine residue, a threonine residue, an aspartic acid residue, a glutamic acid residue, an arginine residue, a histidine residue, or a lysine residue,

Xn represents a peptide residue containing any 1 to 3 amino acid residues, and

X6 represents an alanine residue, a glycine residue, a proline residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, an asparagine residue, a glutamine residue, a serine residue, a threonine residue, an aspartic acid residue, a glutamic acid residue, an arginine residue, a histidine residue, or a lysine residue.

7. The cyclic peptide or a salt thereof according to claim 1,

wherein the cyclic peptide having an amino acid sequence represented by X1-X2-X3-X4-X5-Xn-X6,

in the formula,

X1 represents an alanine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, or a threonine residue,

X2 represents an amino acid residue having an aromatic residue on a side chain,

X3 represents any amino acid residue,

X4 represents an alanine residue, a glycine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, a serine residue, or a histidine residue,

X5 represents an alanine residue, a glycine residue, a proline residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, an asparagine residue, a serine residue, a threonine residue, an aspartic acid residue, a glutamic acid residue, an arginine residue, or a histidine residue,

Xn represents a peptide residue containing any 1 to 3 amino acid residues, and

X6 represents an alanine residue, a glycine residue, a leucine residue, an isoleucine residue, a valine residue, a phenylalanine residue, a tyrosine residue, a tryptophan residue, an asparagine residue, a glutamine residue, a serine residue, a threonine residue, a glutamic acid residue, an arginine residue, or a histidine residue.

8. The cyclic peptide or a salt thereof according to claim 1,
wherein a ring is composed of 10 to 22 amino acid residues.

9. The cyclic peptide or a salt thereof according to claim 1,
wherein the cyclized portion contains a homocysteine residue.

10. The cyclic peptide or a salt thereof according to claim 1,
wherein the cyclic peptide has any one of amino acid sequences set forth in SEQ ID NOs: 38 to 335 and 337 to 342 described in Tables 4 to 6, or

the cyclic peptide has an amino acid sequence in which 1 to 4 amino acids in any one of the amino acid sequences set forth in SEQ ID NOs: 38 to 335 and 337 to 342 described in Tables 4 to 6 have been substituted, deleted, or inserted, and has a binding ability to an FGFR protein.

11. The cyclic peptide or a salt thereof according to claim 1,
wherein the cyclic peptide is modified with another substance.

12. A cyclic peptide complex or a salt thereof, in which two or more molecules of the cyclic peptide or a salt thereof according to any one of claims 1 to 11 are linked by a linker.

13. The cyclic peptide complex or a salt thereof according to claim 12,
wherein the cyclic peptide complex is modified with another substance.

14. A culture medium composition or a culture medium additive, a material for purification, a material for labeling, a material for cell regulation or a material for accumulation, comprising the cyclic peptide or a salt thereof according to any one of claims 1 to 11.

15. A culture medium composition or a culture medium additive, a material for purification, a material for labeling, a material for cell regulation or a material for accumulation, comprising the cyclic peptide complex or a salt thereof according to claim 12.