

CLAIMS

1. A fusion protein comprising:

- 5 a. a first peptide comprising an extracellular ligand binding domain of a VEGF (Vascular endothelial growth factor) receptor, wherein the extracellular ligand binding domain of the VEGF receptor consists of an Ig-like domain D2 of a VEGFR1 and an Ig-like domain D3 of a VEGFR2,
- b. an Fc region of an antibody, wherein the Fc region of the antibody consists of a CH2 and a CH3 region of IgG1, and
- 10 c. a second peptide comprising an extracellular ligand binding domain of a PDGF (Platelet-derived growth factor) receptor, wherein the extracellular ligand binding domain of the PDGF receptor consists of Ig-like domains D1 to D3 of a PDGFR β ;

 wherein the fusion protein is arranged from N-terminus to C-terminus in an order
15 selected from the group consisting of (a)-(b)-(c) and (c)-(b)-(a); and
 wherein the fusion protein is capable of binding to a VEGF and a PDGF and inhibiting the activity of the VEGF and the activity of the PDGF.

2. The fusion protein of claim 1, wherein:

- 20 a. the extracellular ligand binding domain of the VEGF receptor comprises an amino acid sequence having at least 90% identity to SEQ ID NO: 7;
- b. the Fc region of the antibody comprises an amino acid sequence having at least 90% identity to SEQ ID NO: 12; and
- 25 c. the extracellular ligand binding domain of PDGF receptor comprises an amino acid sequence having at least 90% identity to SEQ ID NO: 2.

3. The fusion protein of claim 2, wherein:

- a. the extracellular ligand binding domain of VEGF receptor comprises the amino acid sequence selected from the group consisting of SEQ ID NOs: 7 and 10;
 - b. the Fc region of the antibody comprises the amino acid sequence selected from the group consisting of SEQ ID NOs: 12 and 15; and
 - c. the extracellular ligand binding domain of PDGF receptor comprises the amino acid sequence selected from the group consisting of SEQ ID NOs: 2 and 5.
4. The fusion protein of any of claims 1- 3, further comprising a first linker peptide between the Fc region and the first or second peptide at the C-terminus of the fusion protein, optionally a second linker peptide between the second or first peptide at the N-terminus of the fusion protein and the Fc region.
5. The fusion protein of claim 4, wherein the first linker peptide comprises one or more amino acid sequences selected from the group consisting of SEQ ID NOs: 20, 22, 24, 26, 28, 30 and 32, and the second linker peptide comprises an amino acid sequence of SEQ ID NO: 18.
6. The fusion protein of any of claims 1-5, wherein the fusion protein further comprises a signal peptide linked to N-terminus of the fusion protein.
7. A fusion protein comprising an amino acid sequence having at least 90% sequence identity to SEQ ID NO: 40, amino acids 20-766 of SEQ ID NO: 42, amino acids 21-769 of SEQ ID NO: 44 or amino acids 20-768 of SEQ ID NO: 50.
8. A fusion protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 38, SEQ ID NO: 40, amino acids 20-766 of SEQ ID NO: 42, amino acids 21-769 of SEQ ID NO: 44 and amino acids 20-768 of SEQ ID NO: 50.
9. An isolated nucleic acid molecule encoding the fusion protein of any one of claims 1 to 8.

10. A host cell comprising a nucleic acid molecule encoding the fusion protein of any one of claims 1 to 8.
11. A method of producing the fusion protein of any one of claims 1 to 8, comprising:
- 5 (1) culturing a host cell comprising a nucleic acid molecule encoding the fusion protein of any one of claims 1 to 9, under a condition that the fusion protein is produced; and
- (2) recovering the fusion protein produced by the host cell.
12. A pharmaceutical composition comprising the fusion protein of any one of claims 1 to 8 and a pharmaceutically acceptable carrier.
- 10 13. A pharmaceutical composition comprising a nucleic acid molecule encoding the fusion protein of any one of claims 1 to 8 and a pharmaceutically acceptable carrier.
14. A use of the fusion protein of any one of claims 1 to 8 in the manufacture of a medicament, wherein the medicament is used for treating or preventing an angiogenic-type disorder characterized by neovascularization, vascular permeability,
- 15 edema and inflammation.
15. A use of the fusion protein of any one of claims 1 to 8 in the manufacture of a medicament, wherein the medicament is used for treating or preventing a clinical condition selected from the group consisting of choroidal neovascularization (CNV), wet age-related macular degeneration (AMD) and geographic atrophy.