Claims

1. A recombinant binding protein comprising an ankyrin repeat domain comprising the amino acid sequence 1 to 126 of SEQ ID NO: 3 and a polyethylene glycol moiety of at least 5 kDa molecular weight.

2. The binding protein of claim 1, wherein said ankyrin repeat domain is conjugated at its C-terminus via a peptide bond to a polypeptide linker consisting of 2 to 24 amino acids and having a C-terminal Cys residue, wherein the thiol of said C-terminal Cys is further conjugated to a maleimide-coupled polyethylene glycol.

3. The binding protein of claim 2, wherein said maleimide-coupled polyethylene glycol is α-[3-(3-maleimido-1-oxopropyl)amino]propyl-ω-methoxy-polyoxyethylene.

4. The binding protein of any one of claims 2 to 4, wherein said polyethylene glycol moiety has a molecular weight of around 20 kDa.

5. The binding protein of claim 1 comprising the amino acid sequence of SEQ ID NO:3 wherein the thiol of the C-terminal Cys of SEQ ID NO:3 is further conjugated to a maleimide-coupled polyethylene glycol.

6. The binding protein of claim 5 wherein said maleimide-coupled polyethylene glycol is α-[3-(3-maleimido-1-oxopropyl)amino]propyl-ω-methoxy-polyoxyethylene, and wherein the polyethylene glycol moiety has a molecular weight of at least 10 kDa.

7. A pharmaceutical composition comprising the binding protein of any one of claims 1 to 6 and optionally a pharmaceutical acceptable carrier and/or diluent.

8. A pharmaceutical composition according to claim 7 for use in the treatment of an eye disease.

9. A pharmaceutical composition according to claim 7 for use in the treatment of an eye disease by intravitreal injection.

10. Use of a compound according to claims 1 to 6 for the manufacture of a pharmaceutical composition for the treatment of pathological angiogensis.

CLAIMS

1. A recombinant binding protein comprising an ankyrin repeat domain and a polyethylene glycol moiety of at least 5 kDa molecular weight, wherein said ankyrin repeat domain comprises the amino acid sequence 1 to 126 of SEQ ID NO:3, and wherein said ankyrin repeat domain binds VEGF-A165 with a Kd below 10^{-9}M.

2. The binding protein of claim 1, wherein said ankyrin repeat domain is conjugated at its C-terminus via a peptide bond to a polypeptide linker consisting of 2 to 24 amino acids and having a C-terminal Cys residue, wherein the thiol of said C-terminal Cys is further conjugated to a maleimide-coupled polyethylene glycol.

3. The binding protein of claim 2, wherein said maleimide-coupled polyethylene glycol is α-[3-(3-maleimido-1-oxopropyl)amino]propyl-ω-methoxy-polyoxyethylene.

4. The binding protein of claim 1, wherein said ankyrin repeat domain inhibits binding of VEGF-A165 to VEGFR-2.

5. The binding protein of any one of claims 2 to 4, wherein said polyethylene glycol moiety has a molecular weight of around 20 kDa.

6. The binding protein of claim 1 comprising the amino acid sequence of SEQ ID NO:3, wherein the thiol of the C-terminal Cys of SEQ ID NO:3 is conjugated to said polyethylene glycol moiety, wherein said polyethylene glycol moiety is a maleimide-coupled polyethylene glycol.

7. The binding protein of claim 6 wherein said maleimide-coupled polyethylene glycol is α-[3-(3-maleimido-1-oxopropyl)amino]propyl-ω-methoxy-polyoxyethylene, and wherein the polyethylene glycol moiety has a molecular weight of at least 10 kDa.

8. The binding protein of any one of claims 2 to 4 and 6 to 7, wherein said polyethylene glycol moiety has a molecular weight of up to 100 kDa.

9. A pharmaceutical composition comprising the binding protein of any one of claims 1 to 8 and optionally a pharmaceutically acceptable carrier and/or diluent.

10. A pharmaceutical composition according to claim 9 for use in the treatment of an eye disease.

11. A pharmaceutical composition according to claim 9 for use in the treatment of an eye disease by intravitreal injection.

12. A pharmaceutical composition according to claim 9 for use in the treatment of a vascular disease.

13. A pharmaceutical composition according to claim 9 for use in the treatment of wet macular degeneration.

14. A pharmaceutical composition according to claim 9 for use in the treatment of diabetic macular edema.

15. A pharmaceutical composition according to claim 9 for use in the treatment of a retinal ischemic disease.

16. A pharmaceutical composition according to claim 12, wherein the vascular disease is selected from the group consisting of diabetic retinopathy, central retinal vein occlusion, stenosis of the carotid artery, sickle cell retinopathy.

17. A pharmaceutical composition according to claim 9 for use in the treatment of an ocular neovascularization disease.

18. A pharmaceutical composition according to claim 9 for use in the treatment of pathological angiogenesis.

19. Use of a binding protein according to claims 1 to 8 for the manufacture of a pharmaceutical composition for the treatment of pathological angiogenesis.