

Claims

1. An antibody or antigen binding fragment capable of binding VEGF protein, which comprises HCDR1, HCDR2 and HCDR3, wherein the HCDR1 comprises an amino acid sequence set forth in SEQ ID NO: 9, the HCDR2 comprises an amino acid sequence set forth in any one of SEQ ID NOs: 14, 13 or 12, and the HCDR3 comprises an amino acid sequence set forth in any one of SEQ ID NOs: 17-19.
2. The antibody or antigen binding fragment according to claim 1, which comprises HCDR1, HCDR2 and HCDR3, and the HCDR1, HCDR2 and HCDR3 are selected from any one of the following groups of amino acid sequences:
 - (1) HCDR1: SEQ ID NO: 9, HCDR2: SEQ ID NO: 14 and HCDR3: SEQ ID NO: 17;
 - (2) HCDR1: SEQ ID NO: 9, HCDR2: SEQ ID NO: 12 and HCDR3: SEQ ID NO: 17;
 - (3) HCDR1: SEQ ID NO: 9, HCDR2: SEQ ID NO: 13 and HCDR3: SEQ ID NO: 17;
 - (4) HCDR1: SEQ ID NO: 9, HCDR2: SEQ ID NO: 13 and HCDR3: SEQ ID NO: 18;and
 - (5) HCDR1: SEQ ID NO: 9, HCDR2: SEQ ID NO: 13 and HCDR3: SEQ ID NO: 19.
3. The antibody or antigen binding fragment according to claim 1 or 2, wherein the VEGF protein includes VEGF165.
4. The antibody or antigen binding fragment according to any one of claims 1 to 3, wherein the antigen binding fragment is VHH.
5. The antibody or antigen binding fragment according to any one of claims 1 to 4, wherein the antibody is selected from the group consisting of: a monoclonal antibody, a chimeric antibody, a humanized antibody and a fully human antibody.
6. The antibody or antigen binding fragment according to any one of claims 1 to 5, which comprises H-FR1, H-FR2, H-FR3 and H-FR4, and the H-FR1, H-FR2, H-FR3 and H-FR4 are selected from any one of the following groups of amino acid sequences:
 - (1) F-FR1: SEQ ID NO: 7, H-FR2: SEQ ID NO: 10, H-FR3: SEQ ID NO: 15 and H-FR4: SEQ ID NO: 20;
 - (2) H-FR1: SEQ ID NO: 8, H-FR2: SEQ ID NO: 11, H-FR3: SEQ ID NO: 16 and H-FR4: SEQ ID NO: 21; and

(3) H-FR1: SEQ ID NO: 8, H-FR2: SEQ ID NO: 11, H-FR3: SEQ ID NO: 16 and H-FR4: SEQ ID NO: 22.

7. The antibody or antigen binding fragment according to claim 6, wherein the VH comprises an amino acid sequence set forth in any one of SEQ ID NOs: 1-6.
8. One or more isolated nucleic acid molecules encoding the antibody or antigen binding fragment according to any one of claims 1 to 7.
9. A vector comprising the nucleic acid molecule of claim 8.
10. A cell comprising the nucleic acid molecule of claim 8 or the vector of claim 9.
11. A method for preparing the antibody or antigen binding fragment according to any one of claims 1 to 7, the method comprising culturing the cell of claim 10 under such a condition that the antibody or antigen binding fragment according to any one of claims 1 to 7 is expressed.
12. A pharmaceutical composition comprising the antibody or antigen binding fragment according to any one of claims 1 to 7, the nucleic acid molecule of claim 8, the vector of claim 9 and/or the cell of claim 10, and optionally a pharmaceutically acceptable carrier.
13. A polypeptide comprising the antibody or antigen binding fragment according to any one of claims 1 to 7.
14. An immunoconjugate comprising the antibody or antigen binding fragment according to any one of claims 1 to 7 or the polypeptide of claim 13.
15. Use of the antibody or antigen binding fragment according to any one of claims 1 to 7, the nucleic acid molecule of claim 8, the vector of claim 9, the cell of claim 10, the pharmaceutical composition of claim 12, the polypeptide of claim 13 and/or the immunoconjugate of claim 14 in the preparation of a medicament for preventing, alleviating and/or treating tumors, preferably, the tumor includes a VEGF-overexpressing tumor, optionally, the tumor includes a solid tumor and/or a non-solid tumor, optionally, the tumor includes lung cancer, colorectal cancer, breast cancer, kidney cancer, gastric cancer, liver cancer, blastoma, cervical cancer and/or ovarian cancer.
16. The antibody or antigen binding fragment according to any one of claims 1 to 7, the nucleic acid molecule of claim 8, the vector of claim 9, the cell of claim 10, the

pharmaceutical composition of claim 12, the polypeptide of claim 13 and/or the immunoconjugate of claim 14 for use in preventing, alleviating or treating tumors, preferably the tumor includes a VEGF-overexpressing tumor, optionally the tumor includes a solid tumor and/or a non-solid tumor, optionally the tumor includes lung cancer, colorectal cancer, breast cancer, kidney cancer, gastric cancer, liver cancer, blastoma, cervical cancer and/or ovarian cancer.

17. Use of the antibody or antigen binding fragment according to any one of claims 1 to 7, the nucleic acid molecule of claim 8, the vector of claim 9, the cell of claim 10, the pharmaceutical composition of claim 12, the polypeptide of claim 13 and/or the immunoconjugate of claim 14 in the manufacture of a medicament for inhibiting the binding of VEGF protein to VEGFR protein.