

1. CLAIMS

1. An isolated antigen binding protein, having one or more of the following properties:
 - a) in Octet detection, specifically binding to a human MASP-2 protein at a K_D value of about 2E-09M or less;
 - b) in Octet detection, specifically binding to a cynomolgus monkey MASP-2 protein at a K_D value of about 2E-09M or less; and
 - c) capable of specifically blocking a lectin pathway of a human complement system without affecting a classical pathway and an alternative pathway of a complement.
2. The isolated antigen binding protein according to claim 1, comprises HCDR3, the HCDR3 comprising an amino acid sequence shown in SEQ ID NO: 19; preferably, the isolated antigen binding protein comprises HCDR2, the HCDR2 comprising an amino acid sequence shown in SEQ ID NO: 17; preferably, the isolated antigen binding protein comprises HCDR1, the HCDR1 comprising an amino acid sequence shown in SEQ ID NO: 15; preferably, the isolated antigen binding protein comprises HCDR1, HCDR2, and HCDR3 of a heavy chain variable region VH shown in SEQ ID NO: 67; preferably, the isolated antigen binding protein comprises HCDR1, HCDR2, and HCDR3 of a heavy chain variable region VH shown in any of SEQ ID NO: 13 and SEQ ID NO: 26; preferably, the isolated antigen binding protein comprises a heavy chain

variable region VH, the VH comprising HCDR1, HCDR2, and HCDR3, wherein the HCDR3 comprises an amino acid sequence shown in SEQ ID NO: 19; the HCDR2 comprises an amino acid sequence shown in SEQ ID NO: 17; and the HCDR1 comprises an amino acid sequence shown in SEQ ID NO: 15;

preferably, the isolated antigen binding protein comprises H-FR1, a C terminal of the H-FR1 is directly or indirectly connected to an N terminal of the HCDR1, and the H-FR1 comprising an amino acid sequence shown in SEQ ID NO: 62;

preferably, wherein the H-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 14 and SEQ ID NO: 27;

preferably, the isolated antigen binding protein comprises H-FR2, the H-FR2 is located between the HCDR1 and the HCDR2, and the H-FR2 comprising an amino acid sequence shown in SEQ ID NO: 63;

preferably, wherein the H-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 16 and SEQ ID NO: 28;

preferably, the isolated antigen binding protein comprises H-FR3, the H-FR3 is located between the HCDR2 and the HCDR3, and the H-FR3 comprising an amino acid sequence shown in SEQ ID NO: 64;

preferably, wherein the H-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 18 and SEQ ID NO: 29;

preferably, the isolated antigen binding protein comprises H-FR4, an N

terminal of the H-FR4 is directly or indirectly connected to a C terminal of the HCDR3, and the H-FR4 comprising an amino acid sequence shown in SEQ ID NO: 65;

preferably, wherein the H-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 20 and SEQ ID NO: 30;

preferably, the isolated antigen binding protein comprises H-FR1, H-FR2, H-FR3, and H-FR4, wherein the H-FR1 comprises an amino acid sequence shown in SEQ ID NO: 62; the H-FR2 comprises an amino acid sequence shown in SEQ ID NO: 63; the H-FR3 comprises an amino acid sequence shown in SEQ ID NO: 64; and the H-FR4 comprises an amino acid sequence shown in SEQ ID NO: 65;

preferably, wherein the H-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 14 and SEQ ID NO: 27; the H-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 16 and SEQ ID NO: 28; the H-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 18 and SEQ ID NO: 29; and the H-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 20 and SEQ ID NO: 30;

preferably, wherein the H-FR1, H-FR2, H-FR3, and H-FR4 comprise amino acid sequences selected from any of the following groups:

- a) H-FR1: SEQ ID NO: 14, H-FR2: SEQ ID NO: 16, H-FR3: SEQ ID NO: 18, and H-FR4: SEQ ID NO: 20; and
- b) H-FR1: SEQ ID NO: 27, H-FR2: SEQ ID NO: 28, H-FR3: SEQ ID NO:

29, and H-FR4: SEQ ID NO: 30;

preferably, the isolated antigen binding protein comprises a heavy chain variable region VH, the VH comprising an amino acid sequence shown in SEQ ID NO: 67;

preferably, wherein the VH comprises an amino acid sequence shown in any of SEQ ID NO: 13 and SEQ ID NO: 26.

3. The isolated antigen binding protein according to any one of claims 1-2, comprises LCDR3, the LCDR3 comprising an amino acid sequence shown in SEQ ID NO: 11;

preferably, the isolated antigen binding protein comprises LCDR2, the LCDR2 comprising an amino acid sequence shown in SEQ ID NO: 9;

preferably, the isolated antigen binding protein comprises LCDR1, the LCDR1 comprising an amino acid sequence shown in SEQ ID NO: 7;

preferably, the isolated antigen binding protein comprises LCDR1, LCDR2, and LCDR3 of a light chain variable region VL shown in SEQ ID NO: 66;

preferably, the isolated antigen binding protein comprises LCDR1, LCDR2, and LCDR3 of a light chain variable region VL shown in any of SEQ ID NO: 5 and 21;

preferably, the isolated antigen binding protein comprises a light chain variable region VL, the VL comprising LCDR1, LCDR2, and LCDR3, wherein the LCDR3 comprises an amino acid sequence shown in SEQ ID NO: 11; the LCDR2 comprises an amino acid sequence shown in SEQ ID NO: 9;

and the LCDR1 comprises an amino acid sequence shown in SEQ ID NO: 7; preferably, the isolated antigen binding protein comprises L-FR1, a C terminal of the L-FR1 is directly or indirectly connected to an N terminal of the LCDR1, and the L-FR1 comprising an amino acid sequence shown in SEQ ID NO: 58;

preferably, wherein the L-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 6 and SEQ ID NO: 22;

preferably, the isolated antigen binding protein comprises L-FR2, the L-FR2 is located between the LCDR1 and the LCDR2, and the L-FR2 comprising an amino acid sequence shown in SEQ ID NO: 59;

preferably, wherein the L-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 8 and SEQ ID NO: 23;

preferably, the isolated antigen binding protein comprises L-FR3, the L-FR3 is located between the LCDR2 and the LCDR3, and the L-FR3 comprising an amino acid sequence shown in SEQ ID NO: 60;

preferably, wherein the L-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 10 and SEQ ID NO: 24;

preferably, the isolated antigen binding protein comprises L-FR4, an N terminal of the L-FR4 is directly or indirectly connected to a C terminal of the LCDR3, and the L-FR4 comprising an amino acid sequence shown in SEQ ID NO: 61;

preferably, wherein the L-FR4 comprises an amino acid sequence shown in

any of SEQ ID NO: 12 and SEQ ID NO: 25;

preferably, the isolated antigen binding protein comprises L-FR1, L-FR2, L-FR3, and L-FR4, wherein the L-FR1 comprises an amino acid sequence shown in SEQ ID NO: 58; the L-FR2 comprises an amino acid sequence shown in SEQ ID NO: 59; the L-FR3 comprises an amino acid sequence shown in SEQ ID NO: 60; and the L-FR4 comprises an amino acid sequence shown in SEQ ID NO: 61;

preferably, wherein the L-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 6 and SEQ ID NO: 22; the L-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 8 and SEQ ID NO: 23; the L-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 10 and SEQ ID NO: 24; and the L-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 12 and SEQ ID NO: 25;

preferably, wherein the L-FR1, L-FR2, L-FR3, and L-FR4 comprise amino acid sequences selected from any of the following groups:

- a) L-FR1: SEQ ID NO: 6, L-FR2: SEQ ID NO: 8, L-FR3: SEQ ID NO: 10, and L-FR4: SEQ ID NO: 12; and
- b) L-FR1: SEQ ID NO: 22, L-FR2: SEQ ID NO: 23, L-FR3: SEQ ID NO: 24, and L-FR4: SEQ ID NO: 25;

preferably, wherein the VL comprises an amino acid sequence shown in SEQ ID NO: 66;

preferably, wherein the VL comprises an amino acid sequence shown in any

of SEQ ID NO: 5 and SEQ ID NO: 21.

4. The isolated antigen binding protein according to any one of claims 1-3, comprises a VH and a VL, wherein the VH and the VL comprise amino acid sequences selected from any of the following groups:
 - a) VH: SEQ ID NO: 13 and VL: SEQ ID NO: 5; and
 - b) VH: SEQ ID NO: 26 and VL: SEQ ID NO: 21.
5. The isolated antigen binding protein according to claim 1, comprises HCDR3, the HCDR3 comprising an amino acid sequence shown in SEQ ID NO: 45; preferably, the isolated antigen binding protein comprises HCDR2, the HCDR2 comprising an amino acid sequence shown in SEQ ID NO: 43; preferably, the isolated antigen binding protein comprises HCDR1, the HCDR1 comprising an amino acid sequence shown in SEQ ID NO: 41; preferably, comprises HCDR1, HCDR2, and HCDR3 of a heavy chain variable region VH shown in SEQ ID NO: 77; preferably, comprises HCDR1, HCDR2, and HCDR3 of heavy chain variable regions VH shown in SEQ ID NO: 39 and SEQ ID NO: 52; preferably, the isolated antigen binding protein comprises a heavy chain variable region VH, the VH comprising HCDR1, HCDR2, and HCDR3, wherein the HCDR3 comprises an amino acid sequence shown in SEQ ID NO: 45; the HCDR2 comprises an amino acid sequence shown in SEQ ID NO: 43; and the HCDR1 comprises an amino acid sequence shown in SEQ ID NO: 41;

preferably, the isolated antigen binding protein comprises H-FR1, a C terminal of the H-FR1 is directly or indirectly connected to an N terminal of the HCDR1, and the H-FR1 comprising an amino acid sequence shown in SEQ ID NO: 72;

preferably, wherein the H-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 40 and SEQ ID NO: 53;

preferably, the isolated antigen binding protein comprises H-FR2, the H-FR2 is located between the HCDR1 and the HCDR2, and the H-FR2 comprising an amino acid sequence shown in SEQ ID NO: 73;

preferably, wherein the H-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 42 and SEQ ID NO: 54;

preferably, the isolated antigen binding protein comprises H-FR3, the H-FR3 is located between the HCDR2 and the HCDR3, and the H-FR3 comprising an amino acid sequence shown in SEQ ID NO: 74;

preferably, wherein the H-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 44 and SEQ ID NO: 55;

preferably, the isolated antigen binding protein comprises H-FR4, an N terminal of the H-FR4 is directly or indirectly connected to a C terminal of the HCDR3, and the H-FR4 comprising an amino acid sequence shown in SEQ ID NO: 75;

preferably, wherein the H-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 46 and SEQ ID NO: 30;

preferably, the isolated antigen binding protein comprises H-FR1, H-FR2, H-FR3, and H-FR4, wherein the H-FR1 comprises an amino acid sequence shown in SEQ ID NO: 72; the H-FR2 comprises an amino acid sequence shown in SEQ ID NO: 73; the H-FR3 comprises an amino acid sequence shown in SEQ ID NO: 74; and the H-FR4 comprises an amino acid sequence shown in SEQ ID NO: 75;

preferably, wherein the H-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 40 and SEQ ID NO: 53; the H-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 42 and SEQ ID NO: 54; the H-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 44 and SEQ ID NO: 55; and the H-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 46 and SEQ ID NO: 30;

preferably, wherein the H-FR1, H-FR2, H-FR3, and H-FR4 comprise amino acid sequences selected from any of the following groups:

- a) H-FR1: SEQ ID NO: 40, H-FR2: SEQ ID NO: 42, H-FR3: SEQ ID NO: 44, and H-FR4: SEQ ID NO: 46; and
- b) H-FR1: SEQ ID NO: 53, H-FR2: SEQ ID NO: 54, H-FR3: SEQ ID NO: 55, and H-FR4: SEQ ID NO: 30;

preferably, the isolated antigen binding protein comprises a heavy chain variable region VH, the VH comprising an amino acid sequence shown in SEQ ID NO: 77;

preferably, wherein the VH comprises an amino acid sequence shown in any

of SEQ ID NO: 39 and SEQ ID NO: 52.

6. The isolated antigen binding protein according to any one of claims 1 and 5, comprises LCDR3, the LCDR3 comprising an amino acid sequence shown in SEQ ID NO: 37;

preferably, the isolated antigen binding protein comprises LCDR2, the LCDR2 comprising an amino acid sequence shown in SEQ ID NO: 35;

preferably, the isolated antigen binding protein comprises LCDR1, the LCDR1 comprising an amino acid sequence shown in SEQ ID NO: 33;

preferably, the isolated antigen binding protein comprises LCDR1, LCDR2, and LCDR3 of a light chain variable region VL shown in SEQ ID NO: 76;

preferably, the isolated antigen binding protein comprises LCDR1, LCDR2, and LCDR3 of light chain variable regions VL shown in SEQ ID NO: 31 and SEQ ID NO: 47;

preferably, the isolated antigen binding protein comprises a light chain variable region VL, the VL comprising LCDR1, LCDR2, and LCDR3, wherein the LCDR3 comprises an amino acid sequence shown in SEQ ID NO: 37; the LCDR2 comprises an amino acid sequence shown in SEQ ID NO: 35; and the LCDR1 comprises an amino acid sequence shown in SEQ ID NO: 33;

preferably, the isolated antigen binding protein comprises L-FR1, a C terminal of the L-FR1 is directly or indirectly connected to an N terminal of the LCDR1, and the L-FR1 comprising an amino acid sequence shown in SEQ ID NO: 68; preferably, wherein the L-FR1 comprises an amino acid

sequence shown in any of SEQ ID NO: 32 and SEQ ID NO: 48;

preferably, the isolated antigen binding protein comprises L-FR2, the L-FR2 is located between the LCDR1 and the LCDR2, and the L-FR2 comprising an amino acid sequence shown in SEQ ID NO: 69;

preferably, wherein the L-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 34 and SEQ ID NO: 49;

preferably, the isolated antigen binding protein comprises L-FR3, the L-FR3 being located between the LCDR2 and the LCDR3, and the L-FR3 comprising an amino acid sequence shown in SEQ ID NO: 70;

preferably, wherein the L-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 36 and SEQ ID NO: 50;

preferably, the isolated antigen binding protein comprises L-FR4, an N terminal of the L-FR4 is directly or indirectly connected to a C terminal of the LCDR3, and the L-FR4 comprising an amino acid sequence shown in SEQ ID NO: 71; preferably, wherein the L-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 38 and SEQ ID NO: 51;

preferably, the isolated antigen binding protein comprises L-FR1, L-FR2, L-FR3, and L-FR4, wherein the L-FR1 comprises an amino acid sequence shown in SEQ ID NO: 68; the L-FR2 comprises an amino acid sequence shown in SEQ ID NO: 69; the L-FR3 comprises an amino acid sequence shown in SEQ ID NO: 70; and the L-FR4 comprises an amino acid sequence shown in SEQ ID NO: 71;

preferably, wherein the L-FR1 comprises an amino acid sequence shown in any of SEQ ID NO: 32 and SEQ ID NO: 48; the L-FR2 comprises an amino acid sequence shown in any of SEQ ID NO: 34 and SEQ ID NO: 49; the L-FR3 comprises an amino acid sequence shown in any of SEQ ID NO: 36 and SEQ ID NO: 50; and the L-FR4 comprises an amino acid sequence shown in any of SEQ ID NO: 38 and SEQ ID NO: 51;

preferably, wherein the L-FR1, L-FR2, L-FR3, and L-FR4 comprise amino acid

sequences selected from any of the following groups:

- a) L-FR1: SEQ ID NO: 32, L-FR2: SEQ ID NO: 34, L-FR3: SEQ ID NO: 36, and L-FR4: SEQ ID NO: 38; and
- b) L-FR1: SEQ ID NO: 48, L-FR2: SEQ ID NO: 49, L-FR3: SEQ ID NO: 50, and L-FR4: SEQ ID NO: 51;

preferably, the isolated antigen binding protein comprises a VL, the VL comprising an amino acid sequence shown in SEQ ID NO: 76;

preferably, wherein the VL comprises an amino acid sequence shown in any of SEQ ID NO: 31 and 47.

7. The isolated antigen binding protein according to any one of claims 1, 5 and 6, comprises a VH and a VL, wherein the VH and the VL comprise amino acid sequences selected from any of the following groups:
 - a) VH: SEQ ID NO: 39 and VL: SEQ ID NO: 31; and
 - b) VH: SEQ ID NO: 52 and VL: SEQ ID NO: 47.

8. The isolated antigen binding protein according to any one of claims 1-7, comprises a heavy chain constant region, and the heavy chain constant region comprising a constant region derived from IgG or a constant region derived from IgY;

preferably, wherein the heavy chain constant region comprises a constant region derived from IgG;

preferably, wherein the heavy chain constant region comprises a constant region derived from IgG1, IgG2, IgG3, or IgG4;

preferably, wherein the heavy chain constant region comprises an amino acid sequence shown in SEQ ID NO: 56.
9. The isolated antigen binding protein according to any one of claims 1-8, comprises a light chain constant region, and the light chain constant region comprising a constant region derived from Igκ or a constant region derived from Igλ;

preferably, wherein the light chain constant region comprises a constant region derived from human Igκ;

preferably, wherein the light chain constant region comprises an amino acid sequence shown in SEQ ID NO: 57.
10. The isolated antigen binding protein according to any one of claims 1-9, comprises an antibody or an antigen binding fragment thereof;

preferably, wherein the antigen binding fragment is selected from the following group: Fab, Fab', F(ab')₂, Fv fragment, F(ab')₂, scFv, di-scFv, VHH,

and/or dAb;

preferably, wherein the antibody is selected from the following group: a monoclonal antibody, a single chain antibody, a chimeric antibody, a humanized antibody, and a fully human antibody.

11. A polypeptide, comprises the isolated antigen binding protein according to any one of claims 1-10.
12. An immunoconjugate, comprises the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11.
13. An isolated nucleic acid molecule, encoding the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11.
14. A vector, comprises the isolated nucleic acid molecule according to claim 13.
15. A cell, comprises the isolated antigen binding protein according to any one of claims 1-10, the polypeptide according to claim 11, the immunoconjugate according to claim 12, the isolated nucleic acid molecule according to claim 13, and/or the vector according to claim 14.
16. A method for preparing the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11, the method comprising culturing the cell according to claim 15 under the condition of expressing the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11.
17. A pharmaceutical composition, comprises the isolated antigen binding protein

according to any one of claims 1-10, the polypeptide according to claim 11, the immunoconjugate according to claim 12, the isolated nucleic acid molecule according to claim 13, the vector according to claim 14, the cell according to claim 15, and/or pharmaceutically acceptable adjuvants and/or excipients.

18. A method for detecting or measuring MASP-2, comprises use of the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11.
19. A detection kit for MASP-2, comprises the isolated antigen binding protein according to any one of claims 1-10 or the polypeptide according to claim 11.
20. A use of the isolated antigen binding protein according to any one of claims 1-10, the polypeptide according to claim 11, the immunoconjugate according to claim 12, the isolated nucleic acid molecule according to claim 13, the vector according to claim 14, the cell according to claim 15, and/or the pharmaceutical composition according to claim 17 characterized by being in the manufacture of medicaments for preventing and/or treating diseases or conditions.