

CLAIMS

What is claimed is:

1. An anti-ANGPT2 antibody or an antigen-binding fragment comprising:

a heavy chain variable region comprising the amino acid sequence of SEQ ID NO. 13 (H-CDR1); the amino acid sequence of SEQ ID NO. 15 (H-CDR2); and the amino acid sequence of SEQ ID NO. 17 (H-CDR3), and

a light chain variable region comprising the amino acid sequence of SEQ ID NO. 19 (L-CDR1); the amino acid sequence of SEQ ID NO. 22 (L-CDR2); and the amino acid sequence of SEQ ID NO. 24 (L-CDR3),

or

a heavy chain variable region comprising the amino acid sequence of SEQ ID NO. 14 (H-CDR1); the amino acid sequence of SEQ ID NO. 15 (H-CDR2); and the amino acid sequence of SEQ ID NO. 17 (H-CDR3); and

a light chain variable region comprising the amino acid sequence of SEQ ID NO. 19 (L-CDR1); the amino acid sequence of SEQ ID NO. 22 (L-CDR2); and the amino acid sequence of SEQ ID NO. 24 (L-CDR3),

or

a heavy chain variable region comprising the amino acid sequence of SEQ ID NO. 13 (H-CDR1); the amino acid sequence of SEQ ID NO. 15 (H-CDR2); and the amino acid sequence of SEQ ID NO. 16 (H-CDR3); and

a light chain variable region comprising the amino acid sequence of SEQ ID NO. 20 (L-CDR1); the amino acid sequence of SEQ ID NO. 23 (L-CDR2); and the amino acid sequence of SEQ ID NO. 24 (L-CDR3),

or

a heavy chain variable region comprising the amino acid sequence of SEQ ID NO. 13 (H-CDR1); the amino acid sequence of SEQ ID NO. 15 (H-CDR2); and the amino acid sequence of SEQ ID NO. 16 (H-CDR3); and

a light chain variable region comprising the amino acid sequence of SEQ ID NO. 21 (L-CDR1); the amino acid sequence of SEQ ID NO. 23 (L-CDR2); and the amino acid sequence of SEQ ID NO. 25 (L-CDR3),

or

a heavy chain variable region comprising the amino acid sequence of SEQ ID NO. 13 (H-CDR1); the amino acid sequence of SEQ ID NO. 15 (H-CDR2); and the amino acid sequence of SEQ ID NO. 16 (H-CDR3); and

a light chain variable region comprising the amino acid sequence of SEQ ID NO. 20 (L-CDR1); the amino acid sequence of SEQ ID NO. 22 (L-CDR2); and the amino acid sequence of SEQ ID NO. 24 (L-CDR3).

2. The anti-ANGPT2 antibody of claim 1, wherein said antibody comprises a variable heavy chain and a variable light chain comprising the amino acid sequences of SEQ ID NO. 3 and SEQ ID NO. 8, respectively; SEQ ID NO. 4 and SEQ ID NO. 9, respectively; SEQ ID NO. 5 and SEQ ID NO. 10, respectively; SEQ ID NO. 6 and SEQ ID NO. 11, respectively; or SEQ ID NO. 7 and SEQ ID NO. 12, respectively.

3. The anti-ANGPT2 antibody of claim 1, wherein said antibody comprises a heavy chain and a light chain comprising SEQ ID NO. 31 and SEQ ID NO. 32, respectively; SEQ ID NO. 33 and SEQ ID NO. 34, respectively; SEQ ID NO. 35 and SEQ ID NO. 36; respectively; SEQ ID NO. 37 and SEQ ID NO. 38; respectively; or SEQ ID NO. 39 and SEQ ID NO. 40.

4. A pharmaceutical composition comprising the anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3, and a pharmaceutically acceptable carrier.

5. An anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 for use as a medicament.

6. A method of treating diseases or disorders that can be alleviated by treatment with an anti-ANGPT2 antibody, the method comprising administering to a patient in need thereof a pharmaceutically effective amount of the anti-ANGPT2 antibody or the antigen-binding fragment according to any one of claims 1 to 3.

7. An anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 for use in treating diseases or disorders that can be alleviated by treatment with an anti-ANGPT2 antibody.
8. Use of the anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 in manufacture of a medicament for treating diseases or disorders that can be alleviated by treatment with an anti-ANGPT2 antibody.
9. The method of claim 6, the anti-ANGPT2 antibody or the antigen-binding fragment of claim 7, or the use of the anti-ANGPT2 antibody or the antigen-binding fragment of claim 8, wherein the disease or disorder is selected from the group consisting of cardiac hypertrophy, myocardial infarction, ischemia, ischemic reperfusion injury, stroke hypertension, pulmonary arterial hypertension, idiopathic pulmonary arterial hypertension, trauma induced brain disorders, asthma, chronic obstructive pulmonary disease (COPD), rheumatoid arthritis, inflammatory bowel disease, multiple sclerosis, preeclampsia and pregnancy-induced hypertension, sepsis, severe sepsis, septic shock, non-alcoholic steatohepatitis (NASH), cirrhosis, minimal change disease, focal segmental glomerulosclerosis (FSGS), nephrotic syndrome, diabetic kidney disease (DKD), chronic kidney disease (CKD), diabetic renal insufficiency, end stage renal disease, ischemia or an ischemic reperfusion injury, cancer, hepatocellular carcinoma, idiopathic pulmonary fibrosis (IPF), emphysema, acute lung injury (ALI), acute respiratory disease syndrome (ARDS), severe acute respiratory syndrome (SARS), Middle Eastern respiratory syndrome (MERS), vascular hyperpermeability (and associated disorders), acute kidney injury, renal cell carcinoma, heart failure, lupus nephritis, Raynaud's, pancreatitis, peripheral artery disease, congenital heart disease, Dengue virus, malaria, hantavirus, edema, regeneration, lupus, interstitial lung disease, scleroderma, retinopathies, diabetic nephropathy, portal hypertension, varices growth, and liver transplantation.
10. The method of claim 9, the anti-ANGPT2 antibody or the antigen-binding fragment of claim 9, or the use of the anti-ANGPT2 antibody or the antigen-binding fragment of claim 9, wherein the disease or disorder is selected from the group consisting of chronic kidney disease, non-alcoholic steatohepatitis (NASH), diabetic nephropathy, sepsis and vascular hyperpermeability.
11. The method of claim 9, the anti-ANGPT2 antibody or the antigen-binding fragment of claim 9, or the use of the anti-ANGPT2 antibody or the antigen-binding fragment of claim 9, wherein the

disease or disorder is selected from the group consisting of ALI, ARDS, SARS, MERS, and vascular hyperpermeability (and associated disorders).

12. The method of claim 6 or 9, further comprising administering a second therapeutic agent.

13. The method of claim 6 or 9, wherein said antibody is administered by a parenteral route, intravenous route or subcutaneous route of administration.

14. A method of blocking the function of human ANGPT2 in a human patient, comprising administering to said human patient a composition comprising the anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 in an amount sufficient to block an ANGPT2 mediated response in said human patient.

15. An anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 for use in blocking the function of human ANGPT2.

16. Use of the anti-ANGPT2 antibody or the antigen-binding fragment according to any of claims 1 to 3 in manufacture of a medicament for blocking the function of human ANGPT2.

17. An isolated polynucleotide encoding a heavy chain variable region amino acid sequence or a light chain variable region, wherein the heavy chain variable region amino acid sequence comprises any of SEQ ID NOs: 3 to 7, SEQ ID NOs: 13 to 17; SEQ ID NO: 31, SEQ ID NO: 33, SEQ ID NO: 35, SEQ ID NO: 37, or SEQ ID NO: 39; a and the light chain variable region amino acid sequence comprises any of SEQ ID NOs: 8 to 12, SEQ ID NOs: 19 to 26, SEQ ID NO: 32, SEQ ID NO: 34, SEQ ID NO: 36, SEQ ID NO: 38, or SEQ ID NO: 40.