

CLAIMS

What is claimed is:

1. An anti-syndecan-2 antibody comprising a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises a first amino acid
5 sequence having at least 90.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 1, 3, 5, 7, and 9 and the light chain variable region comprises a second amino acid sequence having at least 91.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 2, 4, 6, 8, and 10.
2. The anti-syndecan-2 antibody of claim 1, wherein the first amino acid sequence is selected
10 from the group consisting of SEQ ID NOs: 1, 3, 5, 7, and 9 and the second amino acid sequence is selected from the group consisting of SEQ ID NOs: 2, 4, 6, 8, and 10.
3. The anti-syndecan-2 antibody of claim 1 being an IgA, an IgD, an IgE, an IgG, or an IgM.
4. The anti-syndecan-2 antibody of claim 1, further comprising a heavy chain constant region and a light chain constant region, wherein the heavy chain constant region comprises a third
15 amino acid sequence having at least 90.5% sequence identity to SEQ ID NO: 36 and the light chain constant region comprises a fourth amino acid sequence having at least 91.5% sequence identity to SEQ ID NO: 37.
5. The anti-syndecan-2 antibody of claim 4, wherein the third amino acid sequence is SEQ ID NO: 36 and the fourth amino acid sequence is SEQ ID NO: 37.
6. The anti-syndecan-2 antibody of claim 5, wherein a fifth amino acid sequence comprising
20 SEQ ID NO: 38 is fused to the heavy chain variable region and a sixth amino acid sequence comprising SEQ ID NO: 39 is fused to the light chain variable region.
7. The anti-syndecan-2 antibody of claim 2, wherein the first amino acid sequence and the second amino acid sequence are respectively selected from the group consisting of SEQ ID
25 NOs: 1 and 2, 3 and 4, 5 and 6, 7 and 8, and 9 and 10.
8. Use of an anti-syndecan-2 antibody in the manufacture of a medicament for the treatment of ~~A method of treating~~ a syndecan-2 associated disease in a subject in need thereof, wherein an effective amount of the anti-syndecan-2 antibody to treat acute respiratory distress syndrome (ARDS) is to be administered to the subject in the treatment of acute respiratory distress syndrome (ARDS) the method comprising administering to the subject an effective
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~~amount of an anti-syndecan-2 antibody to treat the ARDS, wherein~~ the anti-syndecan-2 antibody comprises esing a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises a first amino acid sequence having at least 90.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 1, 3, 5, 7, and 9 and the light chain variable region comprises a second amino acid sequence having at least 91.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 2, 4, 6, 8, and 10.

9. The ~~method-use~~ of claim 8, wherein the syndecan-2 associated disease is acute respiratory distress syndrome (ARDS), stroke, a neurological disease in which the blood brain barrier (BBB) is altered or disrupted, neovascular eye disease, or a cardiovascular disease with a component of vascular hyperpermeability.

10. The ~~method-use~~ of claim 9, wherein the syndecan-2 associated disease is coronavirus disease 2019-induced ARDS (COVID-19-induced ARDS).

11. The ~~method-use~~ of any one of claims 8-10, wherein the anti-syndecan-2 antibody is conjugated to a heterologous peptide.

12. The ~~method-use~~ of any one of claims 8-11, wherein the subject is a mammal.

13. The ~~method-use~~ of any one of claims 8-12, wherein the subject is a human.

14. The ~~method-use~~ of any one of claims 8-13, wherein the anti-syndecan-2 antibody is to be administered in a dosage form further comprising at least one pharmaceutically acceptable carrier.

15. Use of a syndecan-2 disrupting peptide in the manufacture of a medicament for the treatment of ~~A method of treating~~ acute respiratory distress syndrome (ARDS) in a subject in need thereof, wherein an effective amount of the syndecan-2 disrupting peptide comprising an amino acid sequence set forth in SEQ ID NOs: 31, 32, or 33 is to be administered to the subject, and wherein the ~~the method comprising administering to the subject an effective amount of a~~ syndecan-2 disrupting peptide comprises esing an amino acid sequence set forth in SEQ ID NOs: 31, 32, or 33.

16. The ~~method-use~~ of claim 15, wherein the ARDS is coronavirus disease 2019-induced ARDS (COVID-19-induced ARDS).

17. The ~~method~~-use of claim 15 or claim 16, wherein the syndecan-2 disrupting peptide is conjugated to a heterologous peptide.

18. The ~~method~~-use of claim 16, wherein the heterologous peptide is selected from the group consisting of a cell penetrating peptide, a secretion signal peptide, or a stability enhancing domain.

19. The ~~method~~-use of any one of claims 15-18, wherein the subject is a mammal.

20. The ~~method~~-use of any one of claims 15-19, wherein the subject is a human.

21. The ~~method~~-use of any one of claims 15-20, wherein the syndecan-2 disrupting peptide is to be administered in a dosage form further comprising at least one pharmaceutically acceptable carrier.

22. An anti-syndecan-2 antibody for use in therapy, wherein the anti-syndecan-2 antibody comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises a first amino acid sequence having at least 90.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 1, 3, 5, 7, and 9 and the light chain variable region comprises a second amino acid sequence having at least 91.5% sequence identity to at least one selected from the group consisting of SEQ ID NOs: 2, 4, 6, 8, and 10.

23. A syndecan-2 disrupting peptide for use in therapy, wherein the syndecan-2 disrupting peptide comprises an amino acid sequence set forth in SEQ ID NOs: 31, 32, or 33.