CLAIMS

What is claimed is:

1. Use of an isolated lysyl oxidase-related-2 (LOXL2) inhibitor in the manufacture of a medicament for the prevention of, treatment of, or reversing a symptom of a pulmonary fibrotic disorder in a subject, wherein the inhibitor is antibody that specifically binds to a LOXL2 protein.

2. Use of an isolated lysyl oxidase-related-2 (LOXL2) inhibitor in the manufacture of a medicament for the prevention of, treatment of, or reversing a symptom of a pulmonary fibrotic disorder in a subject, wherein the inhibitor inhibits the activity of a LOXL2 protein.

3. The use of claim 2, wherein the inhibitor is an antibody that specifically binds to the LOXL2 protein.

4. The use of claim 1 or 3, wherein the antibody specifically binds to the SRCR4 domain of the LOXL2 protein.

5. The use of any of claims 1, 3, and 4, wherein the antibody comprises:
a heavy chain having a CDR3 with an amino acid sequence of NWMNFDY; and
a light chain having CDR3 with an amino acid sequence of MQHLEYPYT

6. The use of claim 5, wherein:
the heavy chain further comprises a CDR1 with an amino acid sequence of GYAFTYYLIE and a CDR2 with an amino acid sequence of VINPGSGGTNYNEKFKG; and
the light chain further comprises a CDR1 with an amino acid sequence of RSSKSLLHSNGNTYLY and a CDR2 with an amino acid sequence of RMSNLAS.

7. The use of claim 6, wherein the heavy chain comprises the amino acid sequence set forth in SEQ ID NO:1 and the light chain comprises the amino acid sequence forth in SEQ ID NO:2.

8. The use of any of claims 1 and 3-6, wherein the antibody is humanized.

9. The use of claim 8, wherein the antibody comprises a heavy chain comprising the amino acid sequence set forth in SEQ ID NO:3 and a light chain comprising the amino acid sequence set forth in SEQ ID NO:4.

10. The use of any of claims 1-9, wherein the pulmonary fibrotic disorder is selected from the group consisting of interstitial pneumonia, acute respiratory distress syndrome (ARDS), and idiopathic pulmonary fibrosis (IPF).

11. The use of claim 10, wherein the pulmonary fibrotic disorder is IPF.

12. A pharmaceutical composition for the prevention of, treatment of, or reversing a symptom of a pulmonary fibrotic disorder in a subject, use of a pharmaceutical composition comprising the inhibitor of any of claims 1-11 and a pharmaceutically acceptable excipient in the manufacture of a medicament.

13. A method for diagnosing a pulmonary fibrotic disorder, the method comprising determining a level of LOXL2 in a sample of pulmonary tissue from a subject, wherein an increased level of LOXL2 in the sample from the subject, compared to a control sample, indicates the existence of a pulmonary fibrotic disorder in the subject.

14. A method for monitoring response to a treatment of a pulmonary fibrotic disorder, the method comprising determining a level of LOXL2 in a sample of pulmonary tissue from a subject, wherein a decreased level of LOXL2 in the sample from the subject, compared to a control sample, indicates an amelioration of the pulmonary fibrotic disorder in the subject.

15. The method of claim 14, wherein the treatment comprises an inhibitor of LOXL2.

16. The method of any of claims 13-15, wherein the pulmonary fibrotic disorder is selected from the group consisting of interstitial pneumonia, acute respiratory distress syndrome (ARDS) and idiopathic pulmonary fibrosis (IPF).

17. The method of any of claims 13-16, wherein the level of LOXL2 is determined by contacting the sample from the subject with an antibody to LOXL2, so as to allow the formation of a complex between the antibody and the LOXL2 in the sample, and measuring the amount of complex that is formed.

18. The method of claim 17, wherein the antibody comprises:

a heavy chain having a CDR3 with an amino acid sequence of NWMNFDY; and

a light chain having a CDR3 with an amino acid sequence of MQHLEYPYT.

19. The method of claim 18, wherein:

the heavy chain further comprises a CDR1 with an amino acid sequence of GYAFTYYLIE and a CDR2 with an amino acid sequence of VINPGSGGTNYNEKFKG; and

the light chain further comprises a CDR1 with an amino acid sequence of RSSKSLLHSNGNTYLY and a CDR2 with an amino acid sequence of RMSNLAS.

20. The method of claim 19, wherein:

the heavy chain comprises the amino acid sequence set forth in SEQ ID NO:1 and the light chain comprises the amino acid sequence forth in SEQ ID NO:2; or

the heavy chain comprises the amino acid sequence set forth in SEQ ID NO: 3 and the light chain comprises the amino acid sequence set forth in SEQ ID NO: 4.

21. The method of any of claims 17-20, wherein the antibody is humanized.

CLAIMS

What is claimed is:

1. Use of an isolated anti-lysyl oxidase-related-2 (LOXL2) antibody in the manufacture of a medicament for reversing or reducing a symptom of a pulmonary fibrotic disorder in a subject, wherein the symptom is an increase in pulmonary leukocyte number in the subject.

2. The use of claim 1, wherein the anti-LOXL2 antibody specifically binds to the SRCR4 domain of the LOXL2 protein.

3. The use of any of claims 1 and 2, wherein the anti-LOXL2 antibody comprises:

a heavy chain having a CDR3 with an amino acid sequence of NWMNFDY; and

a light chain having CDR3 with an amino acid sequence of MQHLEYPYT.

4. The use of claim 3, wherein:

the heavy chain further comprises a CDR1 with an amino acid sequence of GYAFTYYLIE and a CDR2 with an amino acid sequence of VINPGSGGTNYNEKFKG; and

the light chain further comprises a CDR1 with an amino acid sequence of RSSKSLLHSNGNTYLY and a CDR2 with an amino acid sequence of RMSNLAS.

5. The use of claim 4, wherein the heavy chain comprises the amino acid sequence set forth in SEQ ID NO:1 and the light chain comprises the amino acid sequence forth in SEQ ID NO:2.

6. The use of any of claims 1-5, wherein the anti-LOXL2 antibody is humanized.

7. The use of claim 6, wherein the anti-LOXL2 antibody comprises a heavy chain comprising the amino acid sequence set forth in SEQ ID NO:3 and a light chain comprising the amino acid sequence set forth in SEQ ID NO:4.

8. The use of any of claims 1-7, wherein the pulmonary fibrotic disorder is selected from the group consisting of interstitial pneumonia, acute respiratory distress syndrome (ARDS), and idiopathic pulmonary fibrosis (IPF).

9. The use of claim 8, wherein the pulmonary fibrotic disorder is IPF.

10. The use of any one of claims 1-9, wherein the pulmonary leukocyte number is measured by number of leukocytes in bronchioalveolar lavage (BAL) fluid.

11. A pharmaceutical composition for use in reversing or reducing a symptom of a pulmonary fibrotic disorder in a subject, the pharmaceutical composition comprising the anti-LOXL2 antibody of any of claims 1-7 and a pharmaceutically acceptable excipient, wherein the symptom is an increase in pulmonary leukocyte number in the subject.

12. The pharmaceutical composition of claim 11, wherein the pulmonary leukocyte number is measured by number of leukocytes in BAL fluid.