pressure overload, or for use in the treatment, prevention or prevention of the progression of adverse tissue remodelling, in particular fibronectin-EDA mediated adverse tissue remodelling. In one example, there is disclosed an antibody or antigen-binding fragment as disclosed herein for use in improving angiogenesis, preferably after tissue injury. In another example, there is disclosed use of an antibody or antigen-binding fragment thereof as disclosed herein in the manufacture of a medicament for stimulating angiogenesis in a subject.

The present disclosure further describes a method of treating, preventing or preventing progression of adverse cardiac remodelling and conditions resulting from or relating to myocardial infarction and/or pressure overload, which comprises administering to a subject in need thereof, a therapeutically effective amount of an agent selected from the group consisting of (a) the Ig-like molecule or antigen-binding fragment thereof as taught herein, a nucleic acid molecule encoding the Ig-like molecule or antigen-binding fragment thereof, (c) a vector comprising such nucleic acid molecule and (d) a host cell comprising such nucleic acid molecule or such vector. The subject may be human. In one example, there is disclosed use of an antibody or antigen-binding fragment thereof as disclosed herein or pharmaceutical composition as disclosed herein in the manufacture of a medicament for the treatment, prevention or prevention of the progression of adverse cardiac remodelling and/or conditions resulting from or relating to myocardial infarction and/or pressure-overload. In another example, there is disclosed use of an antibody or antigen-binding fragment thereof disclosed herein or pharmaceutical composition as disclosed herein in the manufacture of a medicament for the treatment, prevention or prevention of the progression of adverse tissue remodelling.In yet another example, there is disclosed use of an agent selected from the group consisting of (a) the antibody or antigen-binding fragment as disclosed herein, (b) a nucleic acid molecule as disclosed herein, (c) a vector as disclosed herein and (d) a host cell as disclosed herein in the manufacture of a medicament for treating, preventing or preventing progression adverse cardiac remodelling and/or conditions resulting from or relating to myocardial infarction and/or pressure-overload.

The present disclosure further describes an antibody that binds fibronectin-EDA or an antigen-binding fragment thereof for use in improving angiogenesis and a method for improving angiogenesis comprising administering to a

Claims

1. Antibody that binds the EDA domain of fibronectin-EDA or antigen-binding fragment thereof comprising

   a heavy chain variable region comprising:

   - a CDRl having the amino acid sequence GYSIX$_1$SGYSWH, wherein X$_1$ is selected from T and A;
   - a CDR2 having the amino acid sequence YIHX$_2$SGX3ANYNPSLKS, wherein X$_2$ is selected from Y and F, and wherein X$_3$ is selected from S and I; and
   - a CDR3 having the amino acid sequence EX$_4$X$_5$GX$_6$FDY, wherein X$_4$ is selected from K and A, X$_5$ is selected from T and R, and X$_6$ is selected from F and Y;

   and a light chain variable region comprising:

   - a CDRl having the amino acid sequence RSSQSX$_7$VX$_8$SNGNTYLX$_9$, wherein X$_7$ is selected from L and I, X$_8$ is selected from H and R, and X$_9$ is selected from H and T;
   - a CDR2 having the amino acid sequence KVSNRFS; and
   - a CDR3 having the amino acid sequence X$_{10}$QX$_{11}$X$_{12}$HVPPT, wherein X$_{10}$ is selected from S and F, X$_{11}$ is selected from S and G, and X$_{12}$ is selected from A and S.

2. Antibody that binds the EDA domain of fibronectin-EDA or antigen-binding fragment thereof comprising

   a heavy chain variable region comprising:

   - a CDRl having the amino acid sequence shown in SEQ ID NO:9;
   - a CDR2 having the amino acid sequence shown in SEQ ID NO:10; and
   - a CDR3 having the amino acid sequence shown in SEQ ID NO:11;

   and a light chain variable region comprising:

   - a CDRl having the amino acid sequence shown in SEQ ID NO:12;
   - a CDR2 having the amino acid sequence shown in SEQ ID N0:13; and
   - a CDR3 having the amino acid sequence shown in SEQ ID NO:14.

3. Antibody that binds the EDA domain of fibronectin-EDA or antigen-binding fragment thereof comprising

   a heavy chain variable region comprising:

   - a CDR1 having the amino acid sequence shown in SEQ ID NO:3;
   - a CDR2 having the amino acid sequence shown in SEQ ID NO:4; and

- a CDR3 having the amino acid sequence shown in SEQ ID NO:5;

and a light chain variable region comprising:

- a CDRl having the amino acid sequence shown in SEQ ID NO:6;
- a CDR2 having the amino acid sequence shown in SEQ ID NO:7; and
- a CDR3 having the amino acid sequence shown in SEQ ID NO:8.

4. Antibody that binds the EDA domain of fibronectin-EDA or antigen-binding fragment thereof comprising

a heavy chain variable region comprising:

- a CDR1 having the amino acid sequence shown in SEQ ID NO:15;
- a CDR2 having the amino acid sequence shown in SEQ ID NO:16; and
- a CDR3 having the amino acid sequence shown in SEQ ID NO:17;

and a light chain variable region comprising:

- a CDRl having the amino acid sequence shown in SEQ ID NO: 18;
- a CDR2 having the amino acid sequence shown in SEQ ID NO: 19; and
- a CDR3 having the amino acid sequence shown in SEQ ID NO:20.

5. Antibody or antigen-binding fragment thereof according to any one of claims 1-4, wherein the CDRs of the light chain and/or the heavy chain are integrated into human-derived framework regions.

6. Antibody or antigen-binding fragment thereof according to anyone of claims 1-5, which is an antibody.

7. Antibody or antigen-binding fragment thereof according to claim 6, which is a chimeric antibody.

8. Antibody or antigen-binding fragment thereof according to claim 6 which is a humanized antibody.

9. Antibody or antigen-binding fragment thereof according to claim 8 comprising a heavy chain and a light chain, wherein said heavy chain has an amino acid sequence as shown in SEQ ID NO:34 and said light chain has an amino acid sequence as shown in SEQ ID NO:35.

10. Antibody or antigen-binding fragment thereof according to claim 8,comprising a heavy chain and a light chain, wherein said heavy chain comprises a constant region of an IgG4 heavy chain as set forth in SEQ ID NO:34 and said light chain comprises a constant region of an IgG4 light chain as set forth in SEQ ID NO:35.

11. Antibody or antigen-binding fragment thereof according to claim 10, wherein said heavy chain and/or light chain further comprise a variable region comprising one or more, preferably all, framework regions of an IgG4 heavy chain as set forth in SEQ ID NO:34 and/or of an IgG4 light chain as set forth in SEQ ID NO:35.

12. Antibody or antigen-binding fragment thereof according to any one of the claims 1-11 wherein the antibody or fragment thereof specifically binds to an amino acid sequence as set forth in SEQ ID NO: 2.

13. A nucleic acid molecule encoding the antibody or antigen-binding fragment thereof according to any one of claims 1-12.

14. A vector comprising the nucleic acid molecule of claim 13.

15. Vector according to claim 14, which is a gene therapy vector.

16. A host cell comprising the nucleic acid molecule of claim 13 or the vector of claims 14 or 15.

17. Host cell according to claim 16, which is a mammalian host cell.

18. Host cell according to any one of claims 16 or 17, which is a hybridoma.

19. A pharmaceutical composition comprising an agent selected from the group consisting of (a) the antibody or antigen-binding fragment thereof according to any one of claims 1-12, (b) a nucleic acid molecule according to claim 13, (c) a vector according to any one of claims 14-15 and (d) a host cell according to any one of claims 16-18, and a pharmaceutical acceptable carrier.

20. Antibody or antigen-binding fragment thereof according to any one of claims 1-11 or pharmaceutical composition according to claim 19 for use as a medicament.