

Claims

1. An antibody molecule that binds mesothelin (MSLN), wherein the antibody molecule is a human IgG1 molecule and, wherein the antigen-binding site of the antibody molecule comprises complementarity determining regions (CDRs) 1-6 of antibody:

- 5 (i) **FS28-256-271** set forth in SEQ ID NOs: **98, 73, 99, 20, 21 and 44**, respectively;
 (ii) **FS28-256-021** set forth in SEQ ID NOs: **98, 73, 99, 20, 21 and 34**, respectively;
 (iii) **FS28-256-012** set forth in SEQ ID NOs: **98, 73, 99, 20, 21 and 25**, respectively;
 (iv) **FS28-256-023** set forth in SEQ ID NOs: **101, 73, 103, 20, 21 and 34**, respectively;
 (v) **FS28-256-024** set forth in SEQ ID NOs: **98, 73, 99, 20, 21 and 43**, respectively;
 10 (vi) **FS28-256-026** set forth in SEQ ID NOs: **101, 73, 103, 20, 21 and 43**, respectively;
 (vii) **FS28-256-027** set forth in SEQ ID NOs: **98, 73, 99, 20, 21 and 44**, respectively;
 (viii) **FS28-256-001** set forth in SEQ ID NOs: **85, 73, 75, 20, 21 and 34**, respectively;
 (ix) **FS28-256-005** set forth in SEQ ID NOs: **85, 73, 75, 20, 21 and 43**, respectively;
 (x) **FS28-256-014** set forth in SEQ ID NOs: **111, 73, 113, 20, 21 and 25**, respectively;
 15 (xi) **FS28-256-018** set forth in SEQ ID NOs: **101, 73, 103, 20, 21 and 25**, respectively; or
 (xii) **FS28-256** set forth in SEQ ID NOs: **71, 73, 75, 20, 21 and 25**, respectively; and
 wherein the CDR sequences are defined according to the ImMunoGeneTics (IMGT) numbering scheme; and/or

wherein the antigen-binding site of the antibody molecule comprises CDRs 1-6 of antibody:

- 20 (i) **FS28-256-271** set forth in SEQ ID NOs: **97, 182, 100, 23, 24 and 44**, respectively;
 (ii) **FS28-256-021** set forth in SEQ ID NOs: **97, 74, 100, 23, 24 and 34**, respectively;
 (iii) **FS28-256-012** set forth in SEQ ID NOs: **97, 74, 100, 23, 24 and 25**, respectively;
 (iv) **FS28-256-023** set forth in SEQ ID NOs: **102, 74, 104, 23, 24 and 34**, respectively;
 (v) **FS28-256-024** set forth in SEQ ID NOs: **97, 74, 100, 23, 24 and 43**, respectively;
 25 (vi) **FS28-256-026** set forth in SEQ ID NOs: **102, 74, 104, 23, 24 and 43**, respectively;
 (vii) **FS28-256-027** set forth in SEQ ID NOs: **97, 74, 100, 23, 24 and 44**, respectively;
 (viii) **FS28-256-001** set forth in SEQ ID NOs: **86, 74, 76, 23, 24 and 34**, respectively;
 (ix) **FS28-256-005** set forth in SEQ ID NOs: **86, 74, 76, 23, 24 and 43**, respectively;
 (x) **FS28-256-014** set forth in SEQ ID NOs: **112, 74, 114, 23, 24 and 25**, respectively;
 30 (xi) **FS28-256-018** set forth in SEQ ID NOs: **102, 74, 104, 23, 24 and 25**, respectively; or
 (xii) **FS28-256** set forth in SEQ ID NOs: **72, 74, 76, 23, 24 and 25**, respectively; and
 wherein the CDR sequences are defined according to the Kabat numbering scheme.

2. The antibody molecule according to claim 1, comprising the VH domain and VL domain of antibody:

- 35 (i) **FS28-256-271** set forth in SEQ ID NOs: **180 and 56**, respectively;

- (ii) **FS28-256-021** set forth in SEQ ID NOs: **109 and 93**, respectively;
 - (iii) **FS28-256-012** set forth in SEQ ID NOs: **109 and 79**, respectively;
 - (iv) **FS28-256-023** set forth in SEQ ID NOs: **121 and 93**, respectively;
 - (v) **FS28-256-024** set forth in SEQ ID NOs: **109 and 53**, respectively;
 - 5 (vi) **FS28-256-026** set forth in SEQ ID NOs: **121 and 53**, respectively;
 - (vii) **FS28-256-027** set forth in SEQ ID NOs: **109 and 56**, respectively;
 - (viii) **FS28-256-001** set forth in SEQ ID NOs: **63 and 93**, respectively;
 - (ix) **FS28-256-005** set forth in SEQ ID NOs: **63 and 53**, respectively;
 - (x) **FS28-256-014** set forth in SEQ ID NOs: **115 and 79**, respectively;
 - 10 (xi) **FS28-256-018** set forth in SEQ ID NOs: **121 and 79**, respectively; or
 - (xii) **FS28-256** set forth in SEQ ID NOs: **69 and 79**, respectively.
3. The antibody molecule according to claim 1 or 2, wherein the antigen-binding site of the antibody molecule comprises CDRs 1-6 as defined according to the IMGT numbering
- 15 scheme, and/or CDRs 1-6 as defined according to the Kabat numbering scheme, of antibody **FS28-256-271**.
4. The antibody molecule according to claim 3, wherein the antibody molecule comprises the heavy chain set forth in SEQ ID NO: **178** or **176**, and the light chain set forth
- 20 in SEQ ID NO: **95** of antibody **FS28-256-271**.
5. The antibody molecule according to claim 4, wherein the heavy chain comprises a CH3 domain, and wherein said CH3 domain comprises a lysine residue (K) at the immediate C-terminus of the CH3 domain sequence.
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6. The antibody molecule according to claim 1 or 2, wherein the antibody molecule comprises a heavy chain comprising a CH3 domain, and wherein said CH3 domain comprises a lysine residue (K) at the immediate C-terminus of the CH3 domain sequence.
- 30 7. The antibody molecule according to any one of the preceding claims, wherein the antibody molecule is a multispecific antibody molecule and comprises a second antigen-binding site that binds a second antigen.
8. The antibody molecule according to claim 7, wherein the second antigen-binding site
- 35 is located in a constant domain of the antibody molecule.

9. The antibody molecule according to claim 8, wherein the constant domain is a CH3 domain.
10. The antibody molecule according to any one of claims 7 to 9, wherein the second
5 antigen-binding site binds an immune cell antigen.
11. The antibody molecule according to claim 10, wherein the immune cell antigen is a member of the tumour necrosis factor receptor superfamily (TNFRSF).
- 10 12. The antibody molecule according to claim 11, wherein the member of the TNFRSF is CD137.
13. The antibody molecule according to any one of claims 8 to 12, wherein the second
15 antigen-binding site comprises a first sequence, a second sequence, and/or a third sequence, wherein the first sequence, second sequence and third sequence are located in the AB structural loop, the CD structural loop and the EF structural loop of the constant domain, respectively.
14. The antibody molecule according to any one of claims 10 to 13, wherein the antibody
20 molecule is capable of activating an immune cell in the presence of MSLN.
15. The antibody molecule according to claim 14, wherein the immune cell is a T cell, B cell, natural killer (NK) cell, natural killer T (NKT) cell, or dendritic cell (DC).
- 25 16. The antibody molecule according to any one of the preceding claims, wherein:
 - (i) the antibody molecule has been modified to reduce or abrogate binding of the CH2 domain of the antibody molecule to one or more Fcγ receptors; and/or
 - (ii) the antibody molecule does not bind to one or more Fcγ receptors.
- 30 17. A conjugate comprising the antibody molecule according to any one of the preceding claims and a bioactive molecule.
18. A nucleic acid molecule or molecules encoding the antibody molecule according to any one of claims 1 to 16.
- 35 19. A vector or vectors comprising the nucleic acid molecule or molecules according to claim 18.

20. A recombinant host cell comprising the nucleic acid molecules(s) according to claim 18, or the vector(s) according to claim 19.
- 5 21. A method of producing the antibody molecule according to any one of claims 1 to 16, comprising culturing the recombinant host cell according to claim 20 under conditions for production of the antibody molecule.
- 10 22. The method of producing the antibody molecule according to claim 21, further comprising isolating and/or purifying the antibody molecule.
23. A pharmaceutical composition comprising the antibody molecule or conjugate according to any one of claims 1 to 17 and a pharmaceutically acceptable excipient.
- 15 24. A pharmaceutical composition for the treatment of cancer in an individual, comprising the antibody molecule or conjugate according to any one of claims 1 to 17.