CLAIMS

1. An isolated human or humanized antibody or functional fragment thereof comprising an antigen-binding region that is specific for Mesothelin (SEQ ID NO:370), wherein said antibody or functional fragment thereof exhibits invariant binding of Mesothelin.

2. An isolated antigen-binding region of an antibody according to claim 1 or a functional fragment thereof.

3. An isolated antigen-binding region according to claim 2, which comprises a CDR region as depicted in Table 7.

4. An isolated antigen-binding region according to claim 2, which comprises a heavy chain or light chain amino acid sequence selected from the group consisting of the
(i) SEQ ID NO`s depicted in table 7; and
(ii) a sequence having at least 60 percent sequence identity in the CDR regions with the CDR regions depicted in SEQ ID NO`s depicted in table 7.

5. An isolated antibody to according to claim 1, which is an IgG.

6. An isolated antigen-binding region according to claim 2, comprising one or more of the Sequences as depicted in table 7.

7. An isolated functional fragment according to claim 2, which is a Fab or scFv antibody fragment.

8. An isolated nucleic acid sequence that encodes an antigen-binding region of a human antibody according to claim 1 or functional fragment thereof.

9. A nucleic acid sequence encoding a variable heavy chain of an isolated antibody or functional fragment thereof, which comprises (i) a sequence selected from the group consisting of SEQ ID NOS as depicted in table 7 or (ii) a nucleic acid sequence that hybridizes under high stringency conditions to the complementary strand of SEQ ID NO as depicted in table 7, wherein said antibody or functional fragment thereof is specific for an epitope of Mesothelin.

10. A vector comprising a nucleic acid sequence according to any one of claim 9.

11. An isolated cell comprising a vector according to claim 10.

12. An isolated cell according to claim 11, wherein said cell is bacterial or a mammalian cell.

13. A pharmaceutical composition comprising an antibody or functional fragment according to claim 1, and a pharmaceutically acceptable carrier or excipient therefore.

14. A method for treating a disorder or condition associated with the undesired presence of mesothelin, comprising administering to a subject in need thereof an effective amount of the pharmaceutical composition according to claim 13.

15. A human antibody according to claim 1, wherein the human antibody is a synthetic human antibody.

CLAIMS

1. An isolated human antibody or functional fragment thereof comprising an antigen-binding region that is specific for Mesothelin of SEQ ID NO: 370, wherein said antibody or functional fragment thereof recognizes an epitope of mesothelin that is not masked by cancer antigen 125 (CA125), and wherein said antibody or functional fragment thereof internalizes into mesothelin expressing cells and has an antigen-binding region, wherein the antibody binding region includes a HCDR 1, HCDR 2, HCDR 3, LCDR 1, LCDR 2 and LCDR 3 wherein:

a) HCDR1 is SEQ ID NO: 5,

b) HCDR2 is SEQ ID NO: 39,

c) HCDR3 is SEQ ID NO: 71,

d) LCDR1 is SEQ ID NO: 103,

e) LCDR2 is SEQ ID NO: 133 and

f) LCDR3 is SEQ ID NO: 169.

2. An antibody according to claim 1, which comprises a variable heavy chain amino acid sequence of SEQ ID NO 212

3. An antibody according to claim 1, which comprises a variable light chain amino acid sequence of MF-T VL in Table 4.

4. An antibody according to any of claims 1 to 3, which is an IgG.

5. An isolated functional fragment of an antibody according to anyone of claims 1 to 3, which is a Fab or scFv antibody fragment.

6. An isolated nucleic acid sequence that encodes an antigen-binding region of a human antibody or functional fragment thereof according to anyone of claims 1 - 5.

7. A vector comprising a nucleic acid sequence according to claim 6.

8. An isolated cell comprising a vector according to claim 7.

9. An isolated cell according to claim 9, wherein said cell is bacterial or a mammalian cell.

10. A pharmaceutical composition comprising an antibody or functional fragment according to anyone of claims 1-5, and a pharmaceutically acceptable carrier or excipient therefore.

11. Antibody or fragment according to anyone of claims 1-5 for use as a pharmaceutical.

12. A human antibody according to anyone of claims 1-5, wherein the human antibody is a synthetic human antibody.