

Claims

1. An antibody binding to mesothelin comprising a heavy chain variable region comprising a heavy chain CDR comprising:

5 a heavy chain CDR1 comprising an amino acid sequence of SEQ ID NO: 9, 15, 21, 27, or 59;

a heavy chain CDR2 comprising an amino acid sequence of SEQ ID NO: 10, 16, 22, 28, 60, 65, 71, 75, 80, 84, 121, 122, 123 or 125; and

10 a heavy chain CDR3 comprising an amino acid sequence of SEQ ID NO: 11, 17, 23, 29, 61, 66, 72, 76, 81, 85, 124 or 126.

2. An antibody binding to mesothelin comprising a light chain variable region comprising a light chain CDR
15 comprising:

a light chain CDR1 comprising an amino acid sequence of SEQ ID NO: 12, 18, 24, 30, 62, 67, 70, 77, 86 or 117;

a light chain CDR2 comprising an amino acid sequence of SEQ ID NO: 13, 19, 25, 63, 68, 73, 78 or 82; and

20 a light chain CDR3 comprising an amino acid sequence of SEQ ID NO: 14, 20, 26, 64, 69, 74, 79, 83, 87, 118, 119 or 120.

3. The antibody of claim 1, wherein the heavy chain variable region comprises an amino acid sequence of SEQ ID
25 NO: 1, 3, 5, 7, 46, 48, 51, 53, 55, 57, 112, 113, 114, 115 or 116, or an amino acid sequence having a sequence

homology thereto of at least 80%.

4. The antibody of claim 1, wherein the light chain variable region comprises an amino acid sequence of SEQ ID NO: 2, 4, 6, 8, 47, 49, 50, 52, 54, 56, 58, 109, 110 or 111,
5 or an amino acid sequence having a sequence homology thereto of at least 80%.

5. An antibody binding to mesothelin comprising:

a heavy chain variable region comprising an amino acid sequence of SEQ ID NO: 1, 3, 5, 7, 46, 48, 51, 53, 55, 57,
10 112, 113, 114, 115 or 116; and

a light chain variable region comprising an amino acid sequence of SEQ ID NO: 2, 4, 6, 8, 47, 49, 50, 52, 54, 56, 58, 109, 110 or 111.

6. A nucleic acid encoding the antibody according to
15 any one of claims 1 to 5.

7. A vector comprising the nucleic acid according to claim 6.

8. A host cell comprising the vector according to claim 7.

20 9. A method of preparing the antibody according to any one of claims 1 to 5 comprising expressing the antibody by culturing host cell according to claim 8.

10. A pharmaceutical composition for treating cancer or tumor comprising the antibody according to any one of
25 claims 1 to 5 as an active ingredient.