Claims

1. An anti-CLDN6 antibody comprising

(a) a heavy chain comprising a set of heavy chain CDRl, CDR2 and CDR3 as shown in SEQ ID NO: 36; and

(b) a light chain comprising a set of light chain CDRl, CDR2 and CDR3 as shown in SEQ ID NO: 35, 54 or 55,

wherein the heavy chain and light chain are covalently linked to each other.

2. The anti-CLDN 6 antibody of claim 1, which is capable of binding to CLDN6 associated with the surface of a cell that expresses CLDN6 and is not substantially capable of binding to CLDN9 associated with the surface of a cell that expresses CLDN9.

3. The anti-CLDN6 antibody of claim 1, which is not substantially capable of binding to CLDN4 associated with the surface of a cell that expresses CLDN4 and/or is not substantially capable of binding to CLDN3 associated with the surface of a cell that expresses CLDN3.

4. The anti-CLDN6 antibody of claim 1, which has one or more of the following activities:

(i) killing of a cell expressing CLDN6,

(ii) inhibition of proliferation of a cell expressing CLDN6,

(iii) inhibition of colony formation of a cell expressing CLDN6,

(iv) mediating remission of established tumors,

(v) preventing formation or re-formation of tumors and

(vi) inhibition of metastasis of a cell expressing CLDN6.

5. The anti-CLDN6 antibody of claim 1, which exhibits one or more immune effector functions against a cell carrying CLDN6 in its native conformation, wherein the one or more immune effector functions are preferably selected from the group consisting of complement dependent cytotoxicity (CDC), antibody-dependent cell-

mediated cytotoxicity (ADCC), induction of apoptosis, and inhibition of proliferation, preferably the effector functions are ADCC and/or CDC.

6. The anti-CLDN6 antibody of claim 1, which is a monoclonal, a chimeric or a humanized antibody.

7. A conjugate comprising the anti-CLDN6 antibody of claim 1 coupled to a therapeutic agent, preferably a toxin, a radioisotope, a drug or a cytotoxic agent.

8. A pharmaceutical composition comprising the anti-CLDN6 antibody of claim 1, and a pharmaceutically acceptable carrier.

9. The anti-CLDN6 antibody of claim 1, wherein the antibody is selected from the group consisting of: single chain Fv (scFv) antibody, monospecific antibody, bispecific antibody, and multispecific antibody.

10. The anti-CLDN6 antibody of claim 9, wherein the antibody is bispecific or multispecific and comprises a second binding specificity for an effector cell.

11. The anti-CLDN6 antibody of claim 9, wherein the antibody is bispecific or multispecific and comprises a second binding specificity for an Fc receptor or a T cell receptor.

12. The anti-CLDN6 antibody of claim 10, wherein the antibody triggers an Fc receptor-mediated effector cell activity selected from phagocytosis, antibody dependent cellular cytotoxicity (ADCC), cytokine release, and generation of superoxide anion.

13. The anti-CLDN6 antibody of claim 10, wherein the second binding specificity is selected from the group consisting of IgG receptor, IgA receptor, CD3, CD16, CD32, CD64, and CD89.

14. The anti-CLDN6 antibody of claim 10, wherein the antibody further comprises a third specificity for an enhancement factor.

15. The anti-CLDN6 antibody of claim 14, wherein the third binding specificity binds a cytotoxic T cell or an immune cell that increases immune response.

16. The anti-CLDN6 antibody of claim 15, wherein the third binding specificity is selected from the group consisting of CD2, CD3, CD8, CD28, CD4, CD40, and ICAM-1.