Claims:

1. An antibody having the ability of binding to CLD18 and mediating killing and/or inhibition of proliferation of cells expressing CLD18.

2. The antibody of claim 1 which binds to CLD18A1 and CLD18A2.

3. The antibody of claim 1 which binds to CLD18A2 but not to CLD18A1.

4. The antibody of any one of claims 1-3 wherein said killing of cells and/or inhibition of proliferation is induced by binding of said antibody to CLD18 expressed by said cells.

5. The antibody of any one of claims 1-4 wherein said killing of cells and/or inhibition of proliferation is induced by binding of said antibody to CLD18A2 expressed by said cells.

6. The antibody of any one of claims 1-5 wherein killing of cells and/or inhibition of proliferation is not induced by binding of said antibody to CLD18A1 expressed by said cells.

7. The antibody of any one of claims 1-6 wherein said cells expressing CLD18 are cancer cells.

8. The antibody of claim 7 wherein the cancer cells are selected from the group consisting of tumorigenic gastric, esophageal, pancreatic and lung cancer cells.

9. The antibody of any one of claims 1-8 which mediates said killing of cells by inducing complement dependent cytotoxicity (CDC) mediated lysis, antibody dependent cellular cytotoxicity (ADCC) mediated lysis, apoptosis, homotypic adhesion, and/or phagocytosis.

10. The antibody of any one of claims 1-9 which mediates said killing of cells by inducing CDC mediated lysis and/or ADCC mediated lysis.

11. The antibody of any one of claims 1-10 which does not induce CDC mediated lysis of said cells.

12. The antibody of any one of claims 9-11 wherein said ADCC mediated lysis takes place in the presence of effector cells selected from the group consisting of monocytes, mononuclear cells, NK cells and PMNs.

13. The antibody of any one of claims 9-12 wherein said phagocytosis is by macrophages.

14. The antibody of any one of claims 1-13 which is a monoclonal, chimeric or humanized antibody, or a fragment of an antibody.

15. The antibody of any one of claims 1-14 selected from the group consisting of an IgG1, an IgG2, preferably IgG2a and IgG2b, an IgG3, an IgG4, an IgM, an IgA1, an IgA2, a secretory IgA, an IgD, and an IgE antibody.

16. The antibody of any one of claims 2-15 wherein CLD18A2 has the amino acid sequence according to SEQ ID NO:2.

17. The antibody of any one of claims 2-16 wherein CLD18A1 has the amino acid sequence according to SEQ ID NO:8.

18. The antibody of any one of claims 1-17 which binds to native epitopes of CLD18 present on the surface of living cells.

19. The antibody of any one of claims 1-18 which is specific for cancer cells, preferably stomach cancer cells.

20. The antibody of any one of claims 1-19 wherein said CLD18 is expressed on the surface of said cells.

21. The antibody of any one of claims 1-20 which is obtainable by a method comprising the step of immunizing an animal with a protein or peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:2, 4, 6, 16, 18, 20-23, 26-31, 151, 153, and 155-157, or an immunogenic fragment or derivative thereof, or a nucleic acid or host cell expressing said protein or peptide, or immunogenic fragment thereof.

22. An antibody produced by a clone deposited under the accession no. DSM ACC2737, DSM ACC2738, DSM ACC2739, DSM ACC2740, DSM ACC2741, DSM ACC2742, DSM ACC2743, DSM ACC2745, DSM ACC2746, DSM ACC2747, DSM ACC2748, DSM ACC2808, DSM ACC2809, or DSM ACC2810.

23. A hybridoma capable of producing the antibody of any one of claims 1 to 22.

24. A hybridoma deposited under the accession no. DSM ACC2737, DSM ACC2738, DSM ACC2739, DSM ACC2740, DSM ACC2741, DSM ACC2742, DSM ACC2743, DSM ACC2745, DSM ACC2746, DSM ACC2747, DSM ACC2748, DSM ACC2808, DSM ACC2809, or DSM ACC2810.

25. A conjugate comprising an antibody of any one of claims 1 to 22 coupled to a therapeutic agent.

26. The conjugate of claim 25 wherein the therapeutic agent is a toxin, a radioisotope, a drug or a cytotoxic agent.

27. A pharmaceutical composition comprising an antibody of any one of claims 1 to 22 and/or a conjugate of claim 25 or 26, and a pharmaceutically acceptable carrier.

28. A method of inhibiting growth of a cell expressing CLD18, comprising contacting the cell with an effective amount of an antibody of any one of claims 1 to 22 and/or a conjugate of claim 25 or 26.

29. A method of killing of a cell expressing CLD18, comprising contacting the cell with an effective amount of an antibody of any one of claims 1 to 22 and/or a conjugate of claim 25 or 26.

30. A method of inhibiting metastatic spread of a cell expressing CLD18, comprising contacting the cell with an effective amount of an antibody of any one of claims 1 to 22 and/or a conjugate of claim 25 or 26.

31. A method of treating or preventing a disease or disorder involving cells expressing CLD18, comprising administering to a subject an antibody of any one of claims 1 to 22, a conjugate of claim 25 or 26 or a pharmaceutical composition of claim 27.

32. The method of claim 31 wherein the disease or disorder is a tumor-related disease.

33. The method of claim 32 wherein the tumor-related disease is selected from the group consisting of gastric cancer, esophageal cancer, pancreatic cancer, lung cancer, ovarian cancer, colon cancer, hepatic cancer, head-neck cancer, cancer of the gallbladder and the metastasis thereof.

34. The method of claim 33 wherein the tumor-relates disease is Krukenberg tumor, peritoneal metastasis and/or lymph node metastasis.

35. The method of any one of claims 28-34, wherein said CLD18 is CLD18A2.

36. The method of any one of claims 28-35 wherein said CLD18 is expressed on the surface of said cells.

Claims:

1. Use of an antibody having the ability of binding to CLD18A2 and mediating killing and/or inhibition of proliferation of cells expressing CLD18A2 for the preparation of a medicament for treating or preventing a Krukenberg tumor.

2. The use of claim 1, wherein said antibody binds to CLD18A1 and CLD18A2.

3. The use of claim 1 or 2, wherein said antibody binds to CLD18A2 but not to CLD18A1.

4. The use of any one of claims 1-3, wherein said killing of cells and/or inhibition of proliferation is induced by binding of said antibody to CLD18A2 expressed by said cells.

5. The use of any one of claims 1-4, wherein said killing of cells is induced by binding of said antibody to CLD18A2 expressed by said cells.

6. The use of any one of claims 1-5, wherein killing of cells and/or inhibition of proliferation is not induced by binding of said antibody to CLD18A1 expressed by said cells.

7. The use of any one of claims 1-6, wherein said antibody mediates said killing of cells by inducing complement dependent cytotoxicity (CDC) mediated lysis, antibody dependent cellular cytotoxicity (ADCC) mediated lysis, apoptosis, homotypic adhesion, and/or phagocytosis.

8. The use of any one of claims 1-7, wherein said antibody mediates said killing of cells by inducing CDC mediated lysis and/or ADCC mediated lysis.

9. The use of any one of claims 1-8, wherein said antibody does not induce CDC mediated lysis of said cells.

10. The use of any one of claims 7-9, wherein said ADCC mediated lysis takes place in the presence of effector cells selected from the: group consisting of monocytes, mononuclear cells, NK cells and polymorphonuclear cells.

11. The use of any one of claims 7-10, wherein said phagocytosis is by macrophages.

12. The use of any one of claims 1-11, wherein said antibody is a monoclonal, chimeric, human or humanized antibody, or a fragment of an antibody.

13. The use of any one of claims 1-12, wherein said antibody is selected from the group consisting of an IgG1, an lgG2, preferably IgG2a and IgG2b, an IgG3, an IgG4, an IgM, an IgA1, an IgA2, a secretory IgA, an IgD, and an IgE antibody.

14. The use of any one of claims 1-13, wherein CLD18A2 has the amino acid sequence according to SEQ ID NO:2.

15. The use of any one of claims 1-14, wherein CLD18Al has the amino acid sequence according to SEQ ID NO:8.

16. The use of any one of claims 1-15, wherein said antibody binds to native epitopes of CLD18 present on the surface of living cells.

17. The use of any one of claims 1-16, wherein said antibody is obtainable by a method comprising the step of immunizing an animal with a protein or peptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:2, 4, 6, 16, 18, 20-23, 26-31, 151, 153, and 155-157, or an immunogenic fragment or derivative thereof, or a nucleic acid or host cell expressing said protein or peptide, or immunogenic fragment thereof.

18. The use of any one of claims 1-17, wherein said antibody is produced by a clone deposited under the accession no. DSM ACC2737, DSM ACC2738, DSM ACC2739, DSM ACC2740, DSM ACC2741, DSM ACC2742, DSM ACC2743, DSM ACC2745, DSM ACC2746, DSM ACC2747, DSM ACC2748, DSM ACC2808, DSM ACC2809, or DSM ACC2810.

19. The use of any one of claims 1-18, wherein said antibody is coupled to a therapeutic agent.

20. The use of claim 19, wherein the therapeutic agent is a toxin, a radioisotope, a drug or a cytotoxic agent.