

What is claimed is:

1. A method of detecting MUC16 in a biological sample, comprising: obtaining a biological sample from a subject, and detecting whether MUC16 is present in the biological sample by contacting the biological sample with an anti-MUC16 antibody or antigen-binding fragment thereof and detecting binding between MUC16 and the anti-MUC16 antibody or antigen-binding fragment.
2. The method of claim 1, wherein the biological sample is a tissue or fluid sample selected from plasma, serum, ascites, ovary, uterus, cervix, liver, bladder, pancreas, stomach, small or large intestine, gall bladder, breast, lung, kidney, salivary, and lacrimal glands, or any epithelioid malignancy thereof.
3. The method of claim 1 or 2, wherein the antibody or antigen-binding fragment binds human MUC16 within one or more of five membrane-proximal SEA domains of human MUC16 corresponding to residues 13791-14451 of SEQ ID NO: 1899.
4. The method of claim 1 or 2, wherein the antibody or antigen-binding fragment binds human MUC16 within residues 13810-14451 of SEQ ID NO: 1899.
5. The method of claim 1 or 2, wherein the antibody or antigen-binding fragment binds to any one of more of SEA1, SEA2, SEA3, SEA4, SEA5, SEA6, SEA7, SEA8, SEA9, SEA10, SEA11, SEA12, SEA13, SEA14, SEA15 or SEA16 of human MUC16.
6. A method of detecting MUC16 in a tissue sample, comprising: obtaining a tissue sample from a subject; and detecting whether MUC16 is present in the tissue sample by contacting the tissue sample with an anti-MUC16 antibody or antigen-binding fragment thereof and detecting binding between MUC16 and the anti-MUC16 antibody or antigen-binding fragment.

7. The method of any one of claims 1-6, wherein the anti-MUC16 antibody or antigen-binding fragment is specific for an epitope within residues 12783-13467 of SEQ ID NO: 1899.

8. The method of claim 7, wherein the anti-MUC16 antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR pair comprising the amino acid sequences of SEQ ID NO: 202/210.

9. The method of any one of claims 1-6, wherein the anti-MUC16 antibody or antigen-binding fragment is specific for an epitope within residues 13810-14451 of SEQ ID NO: 1899.

10. The method of claim 9, wherein the anti-MUC16 antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR amino acid sequence pair selected from the group consisting of SEQ ID NO: 250/1936, 258/266, 314/322 and 1944/1952.

11. The method of any one of claims 6-10, further comprising diagnosing the patient with a cancer when the presence of MUC16 in the tissue sample is detected.

12. A method of detecting MUC16 in a plasma sample, comprising: obtaining a plasma sample from a subject; and detecting whether MUC16 is present in the plasma sample by contacting the plasma sample with an anti-MUC16 antibody or antigen-binding fragment comprising CDRs of a HCVR/LCVR pair comprising the amino acid sequences of SEQ ID NO: 202/210, and detecting binding between MUC16 and the anti-MUC16 antibody or antigen-binding fragment.

13. An isolated antibody or antigen-binding fragment thereof that binds MUC16, wherein the antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR amino acid sequence pair selected from the group consisting of SEQ ID NO: 202/210, 250/1936, 258/266, 314/322 and 1944/1952.

14. The antibody or antigen-binding fragment of claim 13, wherein the antibody or antigen-binding fragment thereof comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, selected from the group consisting of

SEQ ID NOs: 204-206-208-212-214-216; 252-254-256-1938-1940-1942; 260-262-264-268-270-272; 316-318-320-324-326-328; and 1946-1948-1950-1954-1956-1958.

15. The antibody or antigen-binding fragment of claim 14, wherein the antibody or antigen-binding fragment comprises a HCVR/LCVR amino acid sequence pair selected from the group consisting of 202/210, 250/1936, 258/266, 314/322 and 1944/1952.

16. An isolated antibody or antigen-binding fragment thereof that binds within one or more of the five membrane-proximal SEA domains of human MUC 16 in residues 13810-14451 of SEQ ID NO: 1899.

17. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment binds with a K_D of less than about 53 nM as measured in a surface plasmon resonance assay at 25°C.

18. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment binds within residues 14237 to 14290 of SEQ ID NO: 1899.

19. The antibody or antigen-binding fragment of claim 18, wherein the antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR pair comprising the amino acid sequences of SEQ ID NO: 18/26.

20. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment binds within residues 13935 to 13947 of SEQ ID NO: 1899.

21. The antibody or antigen-binding fragment of claim 20, wherein the antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR pair comprising the amino acid sequences of SEQ ID NO: 82/858.

22. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment binds within residues 14165 to 14178 of SEQ ID NO: 1899.

23. The antibody or antigen-binding fragment of claim 22, wherein the antibody or antigen-binding fragment comprises CDRs of a HCVR/LCVR pair comprising the amino acid sequences of SEQ ID NO: 98/170.

24. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment thereof comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, comprising the amino acid sequences of SEQ ID NOS: 252-254-256-1938-1940-1942.

25. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment thereof comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, comprising the amino acid sequences of SEQ ID NOS: 260-262-264-268-270-272.

26. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment thereof comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, comprising the amino acid sequences of SEQ ID NOS: 316-318-320-324-326-328.

27. The antibody or antigen-binding fragment of claim 16, wherein the antibody or antigen-binding fragment thereof comprises HCDR1-HCDR2-HCDR3-LCDR1-LCDR2-LCDR3 domains, respectively, comprising the amino acid sequences of SEQ ID NOS: 1946-1948-1950-1954-1956-1958.

28. The antibody or antigen-binding fragment of claim 24, wherein the antibody or antigen-binding fragment comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 250 and a LCVR comprising the amino acid sequence of SEQ ID NO: 1936.

29. The antibody or antigen-binding fragment of claim 25, wherein the antibody or antigen-binding fragment comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 258 and a LCVR comprising the amino acid sequence of SEQ ID NO: 266.

30. The antibody or antigen-binding fragment of claim 26, wherein the antibody or antigen-binding fragment comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 314 and a LCVR comprising the amino acid sequence of SEQ ID NO: 322.

31. The antibody or antigen-binding fragment of claim 27, wherein the antibody or antigen-binding fragment comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 1944, and a LCVR comprising the amino acid sequence of SEQ ID NO: 1952.