

What is claimed is:

1. An isolated antibody that binds to PSMA comprising:
 - (1) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:31; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:32;
 - (2) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:31; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:66;
 - (3) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:100;
 - (4) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:134;
 - (5) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:167; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an

amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3,
respectively, of a VL having an amino acid sequence of SEQ ID NO:100;

- (6) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:167; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:134;
- (7) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:235; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:236;
- (8) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:235; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
- (9) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:303; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:236;
- (10) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:303; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;

- (11) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:371; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:372;
- (12) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:405; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:406;
- (13) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:439; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
- (14) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:473; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:474;
- (15) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:507; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:508;
- (16) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3,

- respectively, of a VH having an amino acid sequence of SEQ ID NO:541; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:542;
- (17) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:575; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:576;
- (18) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:100;
- (19) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:643; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:508;
- (20) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:677; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:678;
- (21) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:711; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an

- amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:474;
- (22) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:745; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:746;
- (23) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:779; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:780; or
- (24) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:813; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:814.
2. The isolated antibody of claim 1, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2, and VL CDR3 amino acid sequences are according to the
(i) Kabat numbering system;
(ii) Chothia numbering system;
(iii) AbM numbering system;
(iv) Contact numbering system;
(v) IMGT numbering system or a combination thereof.
3. The isolated antibody of claim 1 or claim 2, further comprising a VH having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:31, 99, 167, 235, 303, 371, 405, 439, 473, 507, 541, 575, 643, 677, 711, 779 or 813 and a VL having an amino acid sequence at least 80% identical to the amino acid sequence

- of SEQ ID NOs:32, 66, 100, 134, 236, 270, 372, 406, 474, 508, 542, 576, 678, 746, 780 or 814.
4. The isolated antibody of any one of claims 1 to 3, further comprising a heavy chain (HC) having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:33, 101, 169, 237, 305, 373, 407 or 441 and a light chain (LC) having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:34, 68, 102, 136, 238, 272, 374 or 408.
 5. An isolated antibody that binds PSMA comprising
 - a. (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:439; and (ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
 - b. (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of SEQ ID NOs:205, 206, and 411, respectively, and (ii) a VL comprising a VL CDR1, VL CDR2, and VL CDR3 having an amino acid sequence of SEQ ID NOs:242, 209, and 244, respectively;
 - c. (i) a VH having an amino acid sequence of SEQ ID NO:439; and (ii) a VL having an amino acid sequence of SEQ ID NO:270; or
 - d. (i) a HC having an amino acid sequence of SEQ ID NO:441; and (ii) a LC having an amino acid sequence of SEQ ID NO:272.
 6. The isolated antibody of any one of claims 1 to 5, wherein the antibody is a humanized antibody.
 7. The isolated antibody of any one of claims 1 to 6, wherein the antibody is a human antibody.
 8. The isolated antibody of any one of claims 1 to 7, wherein the binding domain that binds to PSMA is a scFv, an scFv dimer, a Fv, a Fab, a Fab, a F(ab')₂, a dsFv, a sdAb, a VHH or a single chain antibody.
 9. The isolated antibody of any one of claims 1 to 8, wherein the antibody is an IgG antibody.

10. The isolated antibody of claim 9, wherein the IgG antibody is an IgG1, IgG2, IgG3, or IgG4 antibody.
11. The isolated antibody of any one of claims 1 to 10, wherein the antibody comprises a kappa light chain.
12. The isolated antibody of any one of claims 1 to 10, wherein the antibody comprises a lambda light chain.
13. The isolated antibody of any one of claims 1 to 12, wherein the antibody is a monoclonal antibody.
14. The isolated antibody of any one of claims 1 to 13, wherein the antibody binds a PSMA antigen.
15. The isolated antibody of any one of claims 1 to 14, wherein the antibody binds a PSMA epitope.
16. The isolated antibody of any one of claims 1 to 15, wherein the antibody specifically binds to PSMA.
17. The isolated antibody of any one of claims 1 to 16, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 form a binding site for an antigen of the PSMA.
18. The isolated antibody of any one of claims 1 to 16, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 form a binding site for an epitope of the PSMA.
19. The isolated antibody of any one of claims 1 to 18, wherein the PSMA is present on the surface of a cell.
20. The isolated antibody of claim 19, wherein the cell is a prostate cell.
21. The isolated antibody of claim 19, wherein the cell is a prostate cancer cell.
22. The isolated antibody of claim 19, wherein the cell is a renal cell.
23. The isolated antibody of claim 19, wherein the cell is a renal cancer cell.
24. The isolated antibody of claim 23, wherein the renal cancer is a metastatic renal cell carcinoma.

25. The isolated antibody of any one of claims 1 to 24, wherein the antibody is multivalent.
26. The isolated antibody of claim 25, wherein the antibody is capable of binding at least three antigens.
27. The isolated antibody of claim 25, wherein the antibody is capable of binding at least four antigens.
28. The isolated antibody of claim 25, wherein the antibody is capable of binding at least five antigens.
29. The isolated antibody of any one of claims 1 to 28, wherein the antibody is a multispecific antibody.
30. The isolated antibody of claim 29, wherein the antibody is a bispecific antibody.
31. The isolated antibody of claim 29, wherein the antibody is a trispecific antibody.
32. The isolated antibody of claim 29, wherein the antibody is a quadraspecific antibody.
33. A nucleic acid encoding the antibody of any one of claims 1 to 32.
34. A vector comprising the nucleic acid of claim 33.
35. A host cell comprising the vector of claim 34.
36. A kit comprising the vector of claim 34 and packaging for the same.
37. A kit comprising the antibody of any one of claims 1 to 32 and packaging for the same.
38. A pharmaceutical composition comprising the antibody of any one of claims 1 to 32, and a pharmaceutically acceptable carrier.
39. A method of producing the pharmaceutical composition of claim 38, comprising combining the antibody with a pharmaceutically acceptable carrier to obtain the pharmaceutical composition.
40. An isolated multispecific antibody, comprising:
 - (a) a first binding domain that binds to PSMA, wherein the first binding domain comprises:
 - (1) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3,

- respectively, of a VH having an amino acid sequence of SEQ ID NO:31; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:32;
- (2) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:31; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:66;
- (3) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:100;
- (4) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:134;
- (5) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:167; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:100;
- (6) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:167; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an

amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:134;

- (7) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:235; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:236;
- (8) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:235; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
- (9) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:303; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:236;
- (10) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:303; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
- (11) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:371; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:372;

- (12) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:405; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:406;
- (13) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:439; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270;
- (14) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:473; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:474;
- (15) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:507; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:508;
- (16) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:541; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:542;
- (17) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3,

- respectively, of a VH having an amino acid sequence of SEQ ID NO:575; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:576;
- (18) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:99; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:100;
- (19) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:643; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:508;
- (20) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:677; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:678;
- (21) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:711; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:474;
- (22) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:745; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an

- amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:746;
- (23) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:779; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:780; or
- (24) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:813; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:814; and
- (b) a second binding domain that binds to CD3, wherein the second binding domain comprises:
- (1) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:1505; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:1464;
- (2) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:915; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:916;
- (3) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:983; and
(ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an

- amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:984;
- (4) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:1463; and (ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:1464;
- (5) (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:847; and (ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:848; or
- (6) a scFv comprising a VH CDR1, a VH CDR2, a VH CDR3, a VL CDR1, a VL CDR2, a VL CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, a VH CDR3, a VL CDR1, a VL CDR2, a VL CDR3 respectively, of a scFv having an amino acid sequence of SEQ ID NO:1524.
41. The isolated multispecific antibody of claim 40, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2, and VL CDR3 amino acid sequences are according to the
- (i) Kabat numbering system;
- (ii) Chothia numbering system;
- (iii) AbM numbering system;
- (iv) Contact numbering system;
- (v) IMGT numbering system or a combination thereof.
42. The isolated multispecific antibody of claim 40 or claim 41, wherein the first binding domain that binds PSMA comprises a heavy chain (HC) having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:33, 101, 169, 237, 305, 373, 407, 441, 1242, 1244, 1248, 1250, 1252, 1254, 1256, 1258, 1260, 1262, 1264, 1266, 1268 or 1270 and/or a light chain (LC) having an amino acid

sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:34, 68, 102, 136, 238, 272, 374 or 408.

43. The isolated multispecific antibody of any one of claims 40 to 42, wherein the first binding domain that binds PSMA comprises a scFv having an amino acid sequence at least 80% identical to the amino acid sequence of any one of SEQ ID NOs:1485-1500 or SEQ ID NOs:1526-1531.
44. The isolated multispecific antibody of any one of claims 40 to 43, wherein the first binding domain that binds PSMA comprises (i) a HC having an amino acid sequence of SEQ ID NO:441; and (ii) a LC having an amino acid sequence of SEQ ID NO:272.
45. The isolated multispecific antibody of any one of claims 40 to 44, wherein the second binding domain that binds CD3 comprises a heavy chain (HC) having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:849, 883, 917, 951, 985, 1019, 1504, 1455, 1192, 1194, 1167, 1218 or 1238 and/or a light chain (LC) having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:850, 918, 986, 1193, 1195 or 1219.
46. The isolated multispecific antibody of any one of claims 40 to 45, wherein the second binding domain that binds CD3 comprises a scFv having an amino acid sequence at least 80% identical to the amino acid sequence of SEQ ID NOs:1186, 1187, 1523 or 1524.
47. An isolated bispecific antibody comprising a first binding domain that binds PSMA and a second binding domain that binds CD3, wherein
 - a. the first binding domain that binds PSMA comprises (i) a VH comprising a VH CDR1, a VH CDR2, and a VH CDR3 having an amino acid sequence of a VH CDR1, a VH CDR2, and a VH CDR3, respectively, of a VH having an amino acid sequence of SEQ ID NO:439; and (ii) a VL comprising a VL CDR1, a VL CDR2, and a VL CDR3 having an amino acid sequence of a VL CDR1, a VL CDR2, and a VL CDR3, respectively, of a VL having an amino acid sequence of SEQ ID NO:270, and the second binding domain that binds CD3 comprises a scFv comprising a VH CDR1, a VH CDR2, a VH CDR3, a VL CDR1, a VL CDR2, and a VL CDR3 of a scFv having an amino acid sequence of SEQ ID NO:1524;

- b. the first binding domain that binds PSMA comprises a VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2, VL CDR3 of SEQ ID NO:205, 206, 411, 242, 209 and 244, respectively, wherein the amino acid sequences are according to the Kabat numbering system; and the second binding domain that binds CD3 comprises a VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2, VL CDR3 of SEQ ID NO:1467, 1468, 1506, 1470, 1471 and 1472, respectively; wherein the amino acid sequences are according to the Kabat numbering system;
 - c. the first binding domain that binds PSMA comprises (i) a VH having an amino acid sequence of SEQ ID NO:439; and (ii) a VL having an amino acid sequence of SEQ ID NO:270, and the second binding domain that binds CD3 comprises a scFv of SEQ ID NO:1524, respectively; and/or
 - d. the first binding domain that binds PSMA comprises (i) a HC2 having an amino acid sequence of SEQ ID NO:441; and (ii) a LC2 having an amino acid sequence of SEQ ID NO:272, respectively; and the second binding domain that binds CD3 comprises a HC1 of SEQ ID NO:1455.
48. The isolated multispecific antibody of any one of claims 40 to 47, wherein the antibody is a humanized antibody.
 49. The isolated multispecific antibody of any one of claims 40 to 48, wherein the antibody is a human antibody.
 50. The isolated multispecific antibody of any one of claims 40 to 49, wherein the first binding domain, the second binding domain and/or the first and second is a scFv, an scFv dimer, a Fv, a Fab, a Fab, a F(ab')₂, a dsFv, a sdAb, a VHH or a single chain antibody.
 51. The isolated multispecific antibody of any one of claims 40 to 50, wherein the antibody is an IgG antibody.
 52. The isolated multispecific antibody of claim 51, wherein the IgG antibody is an IgG1, IgG2, IgG3, or IgG4 antibody.
 53. The isolated multispecific antibody of any one of claims 40 to 52, wherein the antibody comprises a kappa light chain.

54. The isolated multispecific antibody of any one of claims 40 to 52, wherein the antibody comprises a lambda light chain.
55. The isolated multispecific antibody of any one of claims 40 to 54, wherein the antibody is a monoclonal antibody.
56. The isolated multispecific antibody of any one of claims 40 to 55, wherein the first binding domain binds a PSMA antigen.
57. The isolated multispecific antibody of any one of claims 40 to 55, wherein first binding domain binds a PSMA epitope.
58. The isolated multispecific antibody of any one of claims 40 to 57, wherein the first binding domain specifically binds to PSMA.
59. The isolated multispecific antibody of any one of claims 40 to 58, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 of the first binding domain form a binding site for an antigen of the PSMA.
60. The isolated multispecific antibody of any one of claims 40 to 58, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 of the first binding domain form a binding site for an epitope of the PSMA.
61. The isolated multispecific antibody of any one of claims 40 to 60, wherein the second binding domain binds a CD3 antigen.
62. The isolated multispecific antibody of any one of claims 40 to 61, wherein the second binding domain binds a CD3 epitope.
63. The isolated multispecific antibody of any one of claims 40 to 62, wherein the second binding domain specifically binds to CD3.
64. The isolated multispecific antibody of any one of claims 40 to 63, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 of the second binding domain form a binding site for an antigen of the CD3.
65. The isolated multispecific antibody of any one of claims 40 to 63, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 of the second binding domain form a binding site for an epitope of the CD3.
66. The isolated multispecific antibody of any one of claims 40 to 65, wherein the PSMA is present on the surface of a cell.

67. The isolated multispecific antibody of claim 66, wherein the cell is a prostate cell.
68. The isolated multispecific antibody of claim 66, wherein the cell is a prostate cancer cell.
69. The isolated multispecific antibody of claim 66, wherein the cell is a renal cell.
70. The isolated multispecific antibody of claim 66, wherein the cell is a renal cancer cell.
71. The isolated multispecific antibody of claim 66, wherein the renal cancer is a metastatic renal cell carcinoma.
72. The isolated multispecific antibody of any one of claims 40 to 71, wherein the antibody is a bispecific antibody.
73. The isolated multispecific antibody of any one of claims 40 to 71, wherein the antibody is a trispecific antibody.
74. The isolated multispecific antibody of any one of claims 40 to 71, wherein the antibody is a quadraspecific antibody.
75. A nucleic acid encoding the multispecific antibody of any one of claims 40 to 74.
76. A vector comprising the nucleic acid of claim 75.
77. A host cell comprising the vector of claim 76.
78. A kit comprising the vector of claim 76 and packaging for the same.
79. A kit comprising the multispecific antibody of any one of claims 40 to 74 and packaging for the same.
80. A pharmaceutical composition comprising the multispecific antibody of any one of claims 40 to 74, and a pharmaceutically acceptable carrier.
81. A method of producing the pharmaceutical composition of claim 80, comprising combining the multispecific antibody with a pharmaceutically acceptable carrier to obtain the pharmaceutical composition.
82. A method of directing a CD3-expressing T cell to a PSMA-expressing target cell, comprising contacting the T cell with the multispecific antibody of any one of claims 40 to 74.
83. The method of claim 82, wherein the contacting directs the T cell to the target cell.

84. Use of the multispecific antibody of any one of claims 40 to 74 in the manufacture of a medicament for use in a method of inhibiting the growth or proliferation of a PSMA-expressing target cell, wherein the the multispecific antibody is to be contacted with the target cell.
85. The use of claim 84, wherein the contacting is in the presence of CD3-expressing T cells.
86. Use of the multispecific antibody of any one of claims 40 to 74 in the manufacture of a medicament for use in a method of eliminating a PSMA-expressing target cell in a subject, wherein an effective amount of the multispecific antibody is to be administered to the subject.
87. The use of claim 86, wherein the subject has a disease or disorder of the prostate.
88. The use of claim 86, wherein the subject has prostate inflammation.
89. The use of claim 86, wherein the subject has Benign prostatic hyperplasia.
90. The use of claim 86, wherein the subject has a prostate cancer.
91. The use of claim 90, wherein the subject has metastatic castration-resistant prostate cancer (mCRPC).
92. The use of any one of claims 86 to 91, wherein the target cell expresses PSMA on the cell surface.
93. The use of any one of claims 86 to 91, wherein the target cell is a prostate cell.
94. The use of any one of claims 86 to 91, wherein the target cell is a prostate cancer cell.
95. The use of claim 86, wherein the subject has a renal disease or disorder.
96. The use of claim 86, wherein the subject has a renal cancer.
97. The use of claim 86, wherein the subject has a metastatic renal cell carcinoma.
98. The use of any one of claims 86 or 95 to 97, wherein the target cell expresses PSMA on the cell surface.
99. The use of any one of claims 86 or 95 to 97, wherein the target cell is a renal cell.
100. The use of any one of claims 86 or 95 to 97, wherein the target cell is a renal cancer cell.

101. The use of any one of claims 86 or 95 to 97, wherein the target cell is a metastatic renal cell carcinoma cell.
102. The use of any one of claims 86 to 101, wherein the subject is a subject in need thereof.
103. Use of the multispecific antibody of any one of claims 40 to 74 in the manufacture of a medicament for treating a disease or disorder in a subject, wherein the disease or disorder is a disease or disorder of the prostate, prostate inflammation, Benign prostatic hyperplasia, a prostate cancer, metastatic castration-resistant prostate cancer (mCRPC), renal disease or disorder, a renal cancer, or a metastatic renal cell carcinoma, and wherein an effective amount of the multispecific antibody is to be administered to the subject.
104. The use of claim 103, wherein the subject is a subject in need thereof.
105. The multispecific antibody of any one of claims 40 to 74 for use in therapy.