CLAIMS

What is claimed is:

1. An antibody capable of binding to B7H6 or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises a heavy chain CDR1, a heavy chain CDR2, a heavy chain CDR3, a light chain CDR1, a light chain CDR2, and a light chain CDR3, wherein

the heavy chain CDR1 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 1, and SEQ ID NO. 7, and an amino acid sequence in conservative modification form thereof;

the heavy chain CDR2 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 2, and SEQ ID NO. 8, and an amino acid sequence in conservative modification form thereof;

the heavy chain CDR3 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 3, and SEQ ID NO. 9, and an amino acid sequence in conservative modification form thereof;

the light chain CDR1 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 4, and SEQ ID NO. 10, and an amino acid sequence in conservative modification form thereof;

the light chain CDR2 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 5, SEQ ID NO. 11, and an amino acid sequence in conservative modification form thereof; and

the light chain CDR3 comprises at least one amino acid sequence selected from the group consisting of an amino acid sequence as set forth in SEQ ID NO. 6, SEQ ID NO. 12, and an amino acid sequence in conservative modification form thereof.

2. The antibody or antigen binding fragment thereof of claim 1, wherein the antibody or antigen binding fragment thereof comprises:

1) the heavy chain CDR1 having an amino acid sequence as set forth in SEQ ID NO. 1, the heavy chain CDR2 having an amino acid sequence as set forth in SEQ ID NO. 2, the heavy chain CDR3 having an amino acid sequence as set forth in SEQ ID NO. 3, the light chain CDR1 having an amino acid sequence as set forth in SEQ ID NO. 4, the light chain CDR2 having an

amino acid sequence as set forth in SEQ ID NO. 5, and the light chain CDR3 having an amino acid sequence as set forth in SEQ ID NO. 6: or

2) the heavy chain CDR1 having an amino acid sequence as set forth in SEQ ID NO. 7, the heavy chain CDR2 having an amino acid sequence as set forth in SEQ ID NO. 8, the heavy chain CDR3 having an amino acid sequence as set forth in SEQ ID NO. 9, the light chain CDR1 having an amino acid sequence as set forth in SEQ ID NO. 10, the light chain CDR2 having an amino acid sequence as set forth in SEQ ID NO. 11, and the light chain CDR3 having an amino acid sequence as set forth in SEQ ID NO. 12.

3. The antibody or antigen binding fragment thereof of claim 1 or 2, wherein the antibody or antigen binding fragment thereof comprises a heavy chain variable region and a light chain variable region, (i) the heavy chain variable region comprises an amino acid sequence that is at least 80% homologous to at least one of an amino acid sequence as set forth in SEQ ID NO. 13, SEQ ID NO. 15, SEQ ID NO. 17 and SEQ ID NO. 19 and an amino acid sequence in conservative modification form thereof; and/or, (ii) the light chain variable region comprises an amino acid sequence that is at least 80% homologous to at least one of an amino acid sequence as set forth in SEQ ID NO. 14, SEQ ID NO. 16, SEQ ID NO. 18 and SEQ ID NO. 20 and an amino acid sequence in conservative modification form thereof.

4. The antibody or antigen binding fragment thereof of any one of claims 1-3, wherein the heavy chain variable region comprises an amino acid sequence that is at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% homologous to the heavy chain variable region selected from (i); wherein the light chain variable region comprises an amino acid sequence that is at least 90%, at least 95%, at least 96%, at least 97%, at least 98%, at least 99%, or 100% homologous to the light chain variable region selected from (ii).

5. The antibody or antigen binding fragment thereof of any one of claims 1-4, wherein the antibody or antigen binding fragment thereof comprises:

1) an amino acid sequence of the heavy chain variable region as set forth in SEQ ID NO. 13, and an amino acid sequence of the light chain variable region as set forth in SEQ ID NO. 14;

2) an amino acid sequence of the heavy chain variable region as set forth in SEQ ID NO. 15, and an amino acid sequence of the light chain variable region as set forth in SEQ ID NO. 16;

3) an amino acid sequence of the heavy chain variable region as set forth in SEQ ID NO. 17, and an amino acid sequence of the light chain variable region as set forth in SEQ ID NO. 18; or

4) an amino acid sequence of the heavy chain variable region as set forth in SEQ ID NO. 19, and an amino acid sequence of the light chain variable region as set forth in SEQ ID NO. 20.

6. The antibody or antigen binding fragment thereof of any one of claims 1-5, wherein the antibody or antigen binding fragment thereof comprises:

1) an amino acid sequence of the heavy chain as set forth in SEQ ID NO. 26, and an amino acid sequence of the light chain as set forth in SEQ ID NO. 27;

2) an amino acid sequence of the heavy chain as set forth in SEQ ID NO. 28, and an amino acid sequence of the light chain as set forth in SEQ ID NO. 29;

3) an amino acid sequence of the heavy chain as set forth in SEQ ID NO. 30, and an amino acid sequence of the light chain as set forth in SEQ ID NO. 31; or

4) an amino acid sequence of the heavy chain as set forth in SEQ ID NO. 32, and an amino acid sequence of the light chain as set forth in SEQ ID NO. 33.

7. The antibody or antigen binding fragment thereof of any one of claims 1-5, wherein the isolated antibody is IgG1, IgG2, or IgG4.

8. The antibody or antigen binding fragment thereof of any one of claims 1-5, wherein the antibody is a monoclonal antibody, murine antibody, chimeric antibody, humanized antibody, human engineered antibody, human antibody, Fv, single chain antibody (scFv), Fab, Fab', Fab'-SH, or F(ab')2.

9. The antibody or antigen binding fragment thereof of any one of claims 1-8, wherein the antibody or antigen binding fragment thereof is capable of binding to the amino acid sequence as set forth in SEQ ID NO. 21.

10. An immunoconjugate, comprising a therapeutic agent and the antibody or antigen binding fragment thereof of any one of claims 1-9 conjugated to the therapeutic agent.

11. A composition, comprising the antibody or antigen binding fragment thereof of any one of claims 1-9, and/or the immunoconjugate of claim 10, and a pharmaceutically acceptable carrier.

12. A kit for detecting B7H6 in a sample, comprising the antibody or antigen binding fragment thereof of any one of claims 1-9.

13. Use of the antibody or antigen binding fragment thereof of any one of claims 1-9 in preparation of a reagent for detection of B7H6 in a sample.

14. Use of the antibody or antigen binding fragment thereof of any one of claims 1-9 in preparation of a medicament for prevention and/or treatment of a B7H6-mediated disease, wherein the B7H6-mediated disease is a cancer or an infectious disease;

optionally, the cancer is at least one of the lung cancer, liver cancer, ovarian cancer, cervical cancer, skin cancer, bladder cancer, colon cancer, breast cancer, glioma, kidney cancer, stomach

cancer, esophageal cancer, oral squamous cell cancer, and head and neck cancer.

15. A nucleic acid, comprising a nucleic acid encoding the antibody or antigen binding fragment thereof of any one of claims 1-9.

16. A recombinant vector or transformant, comprising the nucleic acid of claim 15.

17. A recombinant cell, carrying the nucleic acid of claim 15, the expression vector or transformant of claim 16, or the antibody or antigen binding fragment thereof of any one of claims 1-9.

18. A medicament, comprising the antibody or antigen binding fragment thereof of any one of claims 1-9, the immunoconjugate of claim 10, the composition of claim 11, the nucleic acid of claim 15, the recombinant vector or transformant of claim 16, or the recombinant cell of claim 17.

19. Use of the antibody or antigen binding fragment thereof of any one of claims 1-9, the immunoconjugate of claim 10, the composition of claim 11, the medicament of claim 18, the nucleic acid of claim 15, the recombinant vector or transformant of claim 16 or the recombinant cell of claim 17 in treatment and/or prevention of a B7H6-mediated disease.

20. The use of claim 19, wherein the B7H6-mediated disease is a cancer or an infectious disease;

optionally, the cancer is at least one of the lung cancer, liver cancer, ovarian cancer, cervical cancer, skin cancer, bladder cancer, colon cancer, breast cancer, glioma, kidney cancer, stomach cancer, esophageal cancer, oral squamous cell cancer, and head and neck cancer.

21. Use of at least one of the following in diagnosing whether a subject has a B7H6-mediated disease:

1) the antibody or antigen binding fragment thereof of any one of claims 1-9;

2) the nucleic acid of claim 15;

3) the recombinant vector or transformant of claim 16; and

4) the recombinant cell of claim 17.

22. The use of claim 21, wherein the B7H6-mediated disease is a cancer or an infectious disease;

optionally, the cancer is at least one of the lung cancer, liver cancer, ovarian cancer, cervical cancer, skin cancer, bladder cancer, colon cancer, breast cancer, glioma, kidney cancer, stomach cancer, esophageal cancer, oral squamous cell cancer, and head and neck cancer.