

CLAIMS

1. An anti-CD73 (for example, human CD73) antibody or an antigen-binding fragment thereof, wherein according to Kabat, Chothia or IMGT numbering system, the anti-CD73 antibody comprises:

HCDR1, HCDR2 and HCDR3 contained in a heavy chain variable region set forth in SEQ ID NO: 2, SEQ ID NO: 6 or SEQ ID NO: 10; and

LCDR1, LCDR2 and LCDR3 contained in a light chain variable region set forth in SEQ ID NO: 4, SEQ ID NO: 8, SEQ ID NO: 12 or SEQ ID NO: 14.

2. The anti-CD73 antibody or an antigen-binding fragment thereof according to claim 1, wherein

according to the IMGT numbering system,
the anti-CD73 antibody comprises:

HCDR1, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 15,

HCDR2, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 16, HCDR3, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 17,

LCDR1, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 18,

LCDR2, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 19, and

LCDR3, comprising or consisting of an amino acid sequence set forth in SEQ ID NO: 20.

3. The anti-CD73 antibody or the antigen-binding fragment thereof according to claim 1 or 2, wherein the anti-CD73 antibody comprises a heavy chain variable region and a light chain variable region, wherein

(1) the heavy chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 2, or a sequence having at least 80% sequence identity to SEQ ID NO: 2; and

the light chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 4, or a sequence having at least 80% sequence identity to SEQ ID NO: 4;

(2) the heavy chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 6, or a sequence having at least 80% sequence identity to SEQ ID NO: 6; and

the light chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 8, or a sequence having at least 80% sequence identity to SEQ ID NO: 8;

(3) the heavy chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 10, or a sequence having at least 80% sequence identity to SEQ ID NO: 10; and

the light chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 12, or a sequence having at least 80% sequence identity to SEQ ID NO: 12; or

(4) the heavy chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 10, or a sequence having at least 80% sequence identity to SEQ ID NO: 10; and

the light chain variable region of the antibody comprises or consists of a sequence set forth in SEQ ID NO: 14, or a sequence having at least 80% sequence identity to SEQ ID NO: 14.

4. The anti-CD73 antibody or the antigen-binding fragment thereof according to any one of claims 1-3, wherein

the heavy chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 2, and the light chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 4;

the heavy chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 6, and the light chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 8;

the heavy chain variable region of the antibody comprises an amino acid

sequence set forth in SEQ ID NO: 10, and the light chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 12; or

the heavy chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 10, and the light chain variable region of the antibody comprises an amino acid sequence set forth in SEQ ID NO: 14.

5. The anti-CD73 antibody or the antigen-binding fragment thereof according to any one of claims 1-4, wherein the antibody comprises a heavy chain constant region having a sequence set forth in SEQ ID NO: 21, and a light chain constant region having a sequence set forth in SEQ ID NO: 22; or the heavy chain constant region is Ig gamma-1 chain C region represented by ACCESSION: P01857, and the light chain constant region is Ig kappa chain C region represented by ACCESSION: P01834.

6. The anti-CD73 antibody or the antigen-binding fragment thereof according to any one of claims 1-5, wherein the antibody is a monoclonal antibody, a humanized antibody, a chimeric antibody and a multispecific antibody.

7. The anti-CD73 antibody or the antigen-binding fragment thereof according to any one of claims 1-6, wherein the antigen-binding fragment is selected from Fab, Fab', F(ab')₂, Fv, Fab/c, a single chain antibody, a humanized antibody, a chimeric antibody and a bispecific antibody.

8. The anti-CD73 antibody or the antigen-binding fragment thereof according to any one of claims 1-6, wherein the antigen-binding fragment is scFv.

9. A nucleic acid molecule, encoding the antibody or the antigen-binding fragment thereof according to any one of claims 1-8.

10. A vector, comprising the nucleic acid molecule according to claim 9.

11. A host cell, comprising the nucleic acid molecule according to claim 9 or the vector according to claim 10.

12. A conjugate, comprising the antibody or the antigen-binding fragment thereof according to any one of claims 1-9 and a conjugated moiety, wherein

the conjugated moiety is a purification tag, or a detectable label.

13. The conjugate according to claim 12, wherein the purification tag is a His tag, and the detectable label is a radioisotope, a fluorescent substance, a chemiluminescent substance, a colored substance, polyethylene glycol or an enzyme.

14. A fusion protein or a multispecific antibody, comprising the antibody or the antigen-binding fragment thereof according to any one of claims 1–9.

15. The fusion protein or a multispecific antibody according to claim 14, wherein the multispecific antibody is a bispecific antibody.

16. A kit, comprising the antibody or the antigen-binding fragment thereof according to any one of claims 1–9, the conjugate according to claim 12 or 13, or the fusion protein or the multispecific antibody according to claim 14 or 15.

17. The kit according to claim 16, wherein the kit further comprises a secondary antibody specifically recognizing the antibody.

18. The kit according to claim 17, wherein the secondary antibody further comprises a detectable label defined in claim 13.

19. A pharmaceutical composition, comprising the antibody or the antigen-binding fragment thereof according to any one of claims 1–9, the conjugate according to claim 12 or 13, or the fusion protein or multispecific antibody according to claim 14 or 15.

20. The pharmaceutical composition according to claim 19, wherein the pharmaceutical composition further comprises a pharmaceutically acceptable carrier and/or excipient.

21. The pharmaceutical composition according to claim 20, wherein the pharmaceutical composition is in a form suitable for administration by subcutaneous injection, intradermal injection, intravenous injection, intramuscular injection or intralesional injection.

22. Use of the antibody or the antigen-binding fragment thereof of any one of claims 1–9, the conjugate according to claim 12 or 13, or the fusion protein or multispecific antibody according to claim 14 or 15 in preparing drugs for

treating a tumor or in preparing a drug for diagnosing a tumor.

23. Use according to claim 22, wherein the tumors are a solid tumor.

24. Use according to claim 22, wherein the tumors are non-small cell lung cancer, prostate cancer, triple-negative breast cancer, ovarian cancer, colorectal cancer, gastric cancer, melanoma, head and neck cancer, renal cell carcinoma or pancreatic ductal adenocarcinoma.

25. Use according to claim 24, wherein the prostate cancer is metastatic castration-resistant prostate cancer (mCRPC), and the colorectal cancer is colorectal cancer microsatellite stability (MSS).

26. A hybridoma cell line, selected from:

LT014, deposited at China Center for Type Culture Collection (CCTCC) with a collection number of CCTCC NO: C2018137.