have realized the present disclosure by developing a novel anti-Cadherin 17 antibody and a molecule comprising the same.

Specifically, the present disclosure encompasses at least the following aspects and examples:

In a first aspect, the present invention provides an anti-CDH17 antibody or an antigen-binding fragment thereof comprising: a heavy chain variable region comprising HCDR1, HCDR2 and HCDR3 regions and a light chain variable region comprising LCDR1, LCDR2 and LCDR3 regions, wherein:

HCDR1 has the amino acid sequence as shown in SEQ ID NO: 10,

HCDR2 has the amino acid sequence as shown in SEQ ID NO: 21, and

HCDR3 has the amino acid sequence as shown in SEQ ID NO: 31 respectively;

or

HCDR1 has the amino acid sequence as shown in SEQ ID NO: 07,

HCDR2 has the amino acid sequence as shown in SEQ ID NO: 17, and

HCDR3 has the amino acid sequence as shown in SEQ ID NO: 28 respectively;

or

HCDR1 has the amino acid sequence as shown in SEQ ID NO: 05,

HCDR2 has the amino acid sequence as shown in SEQ ID NO: 15, and

HCDR3 has the amino acid sequence as shown in SEQ ID NO: 26 respectively;

and/or

LCDR1 has the amino acid sequence as shown in SEQ ID NO: 42,

LCDR2 has the amino acid sequence as shown in SEQ ID NO: 47, and

LCDR3 has the amino acid sequence as shown in SEQ ID NO: 54, respectively;

or

LCDR1 has the amino acid sequence as shown in SEQ ID NO: 38,

LCDR2 has the amino acid sequence as shown in SEQ ID NO: 45, and

LCDR3 has the amino acid sequence as shown in SEQ ID NO: 53, respectively;

or

LCDR1 has the amino acid sequence as shown in SEQ ID NO: 36,

LCDR2 has the amino acid sequence as shown in SEQ ID NO: 43, and

LCDR3 has the amino acid sequence as shown in SEQ ID NO: 51, respectively;

preferably,

the heavy chain variable region comprises HCDR1, HCDR2 and HCDR3 having the amino acid sequences as shown in SEQ ID NO: 10, SEQ ID NO: 21 and SEQ ID NO: 31, respectively; and the light chain variable region comprises LCDR1, LCDR2 and LCDR3 having the amino acid sequences as shown in SEQ ID NO: 42, SEQ ID NO: 47 and SEQ ID NO: 54, respectively;

or

the heavy chain variable region comprises HCDR1, HCDR2 and HCDR3 having the amino acid sequences as shown in SEQ ID NO: 07, SEQ ID NO: 17 and SEQ ID NO: 28, respectively; and the light chain variable region comprises LCDR1, LCDR2 and LCDR3 having the amino acid sequences as shown in SEQ ID NO: 38, SEQ ID NO: 45 and SEQ ID NO: 53, respectively;

or

the heavy chain variable region comprises HCDR1, HCDR2 and HCDR3 having the amino acid sequences as shown in SEQ ID NO: 05, SEQ ID NO: 15 and SEQ ID NO: 26, respectively; and the light chain variable region comprises LCDR1, LCDR2 and LCDR3 having the amino acid

sequences as shown in SEQ ID NO: 36, SEQ ID NO: 43 and SEQ ID NO: 51, respectively.

In a second aspect, the present invention provides an isolated anti-CDH17 antibody or antigen-binding fragment thereof wherein the antibody competes with the antibody or antigen binding fragment according to the invention for binding to human CDH17.

In a third aspect, the present invention provides an isolated nucleic acid molecule encoding the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention.

In a fourth aspect, the present invention provides a recombinant vector comprising the isolated nucleic acid molecule according to the invention.

In a fifth aspect, the present invention provides a host cell comprising the recombinant vector according to the invention, wherein the host cell is selected from the group consisting of a prokaryotic cell and a eukaryotic cell, preferably a eukaryotic cell, more preferably a mammalian cell.

In a sixth aspect, the present invention provides a therapeutic conjugate comprising the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention, wherein the antibody or the antigen-binding fragment thereof is conjugated with one or more therapeutic agents; preferably, the therapeutic agent is a cytotoxic agent.

In a seventh aspect, the present invention provides a diagnostic conjugate comprising the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention, wherein the antibody or the antigen-binding fragment thereof is conjugated with one or more diagnostic agents; preferably, the diagnostic agent is selected from the group consisting of a detectable label, enzyme, metal-containing substance, fluorescent substance, luminescent substance, colored substance and quantum dot.

In an eighth aspect, the present invention provides a bispecific antibody comprising a first binding domain that specifically binds to CDH17, and a second binding domain that specifically binds to a second target protein, wherein the first binding domain is an anti-CDH17 antibody or antigen-binding fragment according to the invention.

In a ninth aspect, the present invention provides a method for producing the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention, wherein the method comprises: culturing the host cell according to the invention in a medium to produce and accumulate the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention, and harvesting the antibody or the antigen-binding fragment thereof from the culture.

In a tenth aspect, the present invention provides an agent for use in immunologically detecting or measuring CDH17, comprising the anti-CDH17 antibody or the antigen-binding fragment thereof of the invention, wherein the detection or measurement comprises a step of contacting a sample with the anti-CDH17 antibody or the antigen-binding fragment thereof.

In an eleventh aspect, the present invention provides an agent for use in a diagnosis of a disease related to a human CDH17 positive cell, comprising the anti-CDH17 antibody or the antigen-binding fragment thereof of the invention or the diagnostic conjugate according to the invention, wherein the diagnosis comprises a step of contacting a sample with the anti-CDH17 antibody or the antigen-binding fragment thereof or the diagnostic conjugate.

In a twelfth aspect, the present invention provides a pharmaceutical composition, which comprises: a therapeutically effective amount or prophylactically effective amount of the anti-CDH17 antibody or the antigen-binding fragment thereof according to the invention or the therapeutic conjugate according to the invention or the bispecific antibody according to the

invention, and one or more pharmaceutically acceptable carriers, diluents, or excipients.

In a thirteenth aspect, the present invention provides a use of the anti-CDH17 antibody or the antigen-binding fragment according to the invention, the therapeutic conjugate according to the invention, the bispecific antibody according to the invention, or the pharmaceutical composition of the invention for the manufacture of a medicament for treating or preventing a CDH17-mediated disease or disorder, preferably, the disease or disorder is cancer; more preferably the cancer is colorectal cancer, gastric cancer, pancreatic cancer, liver cancer, gallbladder cancer, ovarian cancer or cholangiocarcinoma.

The present disclosure provides an anti-Cadherin 17 antibody or an antigen-binding fragment thereof comprises: a heavy chain variable region comprising HCDR1, HCDR2 and HCDR3 regions and a light chain variable region comprising LCDR1, LCDR2 and LCDR3 regions, wherein:

a) HCDR1 having the amino acid sequence as shown in SEQ ID NO: 01, SEQ ID NO: 02, SEQ ID NO: 03, SEQ ID NO: 04, SEQ ID NO: 05, SEQ ID NO: 06, SEQ ID NO: 07, SEQ ID NO: 08, SEQ ID NO: 09 or SEQ ID NO: 10;

b) HCDR2 having the amino acid sequence as shown in SEQ ID NO: 11, SEQ ID NO: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, SEQ ID NO: 20 or SEQ ID NO: 21;

c) HCDR3 having the amino acid sequence as shown in SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, SEQ ID NO: 28, SEQ ID NO: 29, SEQ ID NO: 30 or SEQ ID NO: 31;

d) LCDR1 having the amino acid sequence as shown in SEQ ID NO: 32, SEQ ID NO: 33, SEQ ID NO: 34, SEQ ID NO: 35, SEQ ID NO: 36, SEQ ID NO: 37, SEQ ID NO: 38, SEQ ID NO: 39, SEQ ID NO: 40, SEQ ID NO: 41 or SEQ ID NO: 42;

e) LCDR2 having the amino acid sequence as shown in SEQ ID NO: 43, SEQ ID NO: 44, SEQ ID NO: 45, SEQ ID NO: 46, or SEQ ID NO: 47;

f) LCDR3 having the amino acid sequence as shown in SEQ ID NO: 48, SEQ ID NO: 49, SEQ ID NO: 50, SEQ ID NO: 51, SEQ ID NO: 52, SEQ ID NO: 53 or SEQ ID NO: 54.

In some embodiments, the heavy chain variable region sequence comprises:

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 01, HCDR2 having the amino acid sequence as shown in SEQ ID NO: 11, and HCDR3 having the amino acid sequence as shown in SEQ ID NO: 22, respectively; or

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 02, HCDR2 having the amino acid sequence as shown in SEQ ID NO: 12, and HCDR3 having the amino acid sequence as shown in SEQ ID NO: 23 respectively; or

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 03, HCDR2 having the amino acid sequence as shown in SEQ ID NO: 13, and HCDR3 having the amino acid sequence as shown in SEQ ID NO: 24 respectively; or

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 04, HCDR2 having the amino acid sequence as shown in SEQ ID NO: 14, and HCDR3 having the amino acid sequence as shown in SEQ ID NO: 25 respectively; or

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 05, HCDR2 having the amino acid sequence as shown in SEQ ID NO: 15, and HCDR3 having the amino acid sequence as shown in SEQ ID NO: 26 respectively; or

HCDR1 having the amino acid sequence as shown in SEQ ID NO: 06, HCDR2 having the