

**【CLAIMS】****【Claim 1】**

The anti-hIL-2 antibody or antigen-binding fragment thereof, which binds specifically to human interleukin-2 (hIL-2), and inhibits the binding of the hIL-2 to CD25,

wherein the anti-hIL-2 antibody or antigen-binding fragment thereof comprises:

a heavy-chain variable region comprising a heavy-chain CDR1 consisting of an amino acid sequence of SEQ ID NO: 11, a heavy-chain CDR2 consisting of an amino acid sequence of SEQ ID NO: 12, and a heavy-chain CDR3 consisting of an amino acid sequence of SEQ ID NO: 13; and

a light-chain variable region comprising a light-chain CDR1 consisting of an amino acid sequence of SEQ ID NO: 14, a light-chain CDR2 consisting of an amino acid sequence of SEQ ID NO: 15, and a light-chain CDR3 consisting of an amino acid sequence of SEQ ID NO: 16.

**【Claim 2】**

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

a heavy-chain variable region comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 3, 23, 28, 32, and 34; and

a light-chain variable region comprising an amino acid sequence selected from the group consisting of SEQ ID NOS: 4, 24, 26, and 30.

**【Claim 3】**

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

a heavy-chain variable region of SEQ ID NO: 3 and a light-chain variable region of SEQ ID NO: 4;

a heavy-chain variable region of SEQ ID NO: 23 and a light-chain variable region of SEQ ID NO: 24;

a heavy-chain variable region of SEQ ID NO: 28 and a light-chain variable region of SEQ ID NO: 26;

a heavy-chain variable region of SEQ ID NO: 32 and a light-chain variable region of SEQ ID NO: 30; or

a heavy-chain variable region of SEQ ID NO: 34 and a light-chain variable region of SEQ ID NO: 30.

**【Claim 4】**

The anti-hIL-2 antibody or antigen-binding fragment thereof of claim 1, wherein the anti-hIL-2 antibody or antigen-binding fragment thereof induces expansion of CD8<sup>+</sup> T cells and NK cells.

**【Claim 5】**

A nucleic acid encoding the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claims 1, 2 to 4.

**【Claim 6】**

A recombinant vector comprising the nucleic acid of claim 5.

**【Claim 7】**

A cell transformed with the recombinant vector of claim 6.

**【Claim 8】**

A method of producing an anti-hIL-2 antibody or antigen-binding fragment thereof, comprising culturing the cell of claim 7.

**【Claim 9】**

A complex in which the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claims 1, 2 to 4 is bound to hIL-2.

**【Claim 10】**

A composition suitable for preventing or treating cancer, which comprises the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claims 1, 2 to 4 as an active ingredient.

**【Claim 11】**

The composition of claim 10, wherein the cancer is selected from the group consisting of skin cancer, breast cancer, colorectal cancer, kidney cancer, lung cancer, liver cancer, brain cancer, esophageal cancer, gallbladder cancer, ovarian cancer, pancreatic cancer, stomach cancer, uterine cervical cancer, thyroid cancer, prostate cancer, and bladder cancer.

**【Claim 12】**

A bispecific antibody comprising the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claim 1, 2 to 4.

**【Claim 13】**

A composition suitable for preventing or treating cancer, which comprises the bispecific antibody or antibody-drug conjugate of claim 12 as an active ingredient.

**【Claim 14】**

The composition of claim 13, wherein the cancer is selected from the group consisting of skin cancer, breast cancer, colorectal cancer, kidney cancer, lung cancer, liver cancer, brain cancer, esophageal cancer, gallbladder cancer, ovarian cancer, pancreatic cancer, stomach cancer, uterine cervical cancer, thyroid cancer, prostate cancer, and bladder cancer.

**【Claim 15】**

A co-administration composition suitable for cancer treatment, which comprises the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claims 1, 2 to 4 and an immune checkpoint inhibitor.

**【Claim 16】**

The composition of claim 15, wherein the immune checkpoint inhibitor is an anti-CTLA-4 antibody or an anti-PD-1 antibody.

**【Claim 17】**

A composition suitable for enhancing vaccine efficacy, which comprises the anti-hIL-2 antibody or antigen-binding fragment thereof any one of claims 1, 2 to 4 as an active ingredient.

**【Claim 18】**

A antibody-drug conjugate comprising the anti-hIL-2 antibody or antigen-binding fragment thereof of any one of claims 1, 2 to 4.

**【Claim 19】**

A composition suitable for preventing or treating cancer, which comprises the antibody-drug conjugate of claim 18 as an active ingredient.

**【Claim 20】**

The composition of claim 19, wherein the cancer is selected from the group consisting of skin cancer, breast cancer, colorectal cancer, kidney cancer, lung cancer, liver cancer, brain cancer, esophageal cancer, gallbladder cancer, ovarian cancer, pancreatic cancer, stomach cancer, uterine cervical cancer, thyroid cancer, prostate cancer, and bladder cancer.