What is claimed is:

1. Use of an isolated antibody or antigen-binding fragment thereof that binds specifically to human programmed death-1 (PD-1) protein or a pharmaceutical composition comprising the isolated antibody or antigen-binding fragment thereof and a carrier, wherein the isolated antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2, and HCDR3) of a heavy chain variable region (HCVR) having an amino acid sequence of SEQ ID NO: 162, and three light chain CDRs (LCDR1, LCDR2, and LCDR3) of a light chain variable region (LCVR) having an amino acid sequence of SEQ ID NO: 170, in the manufacture of a medicament for enhancing an immune response in a subject.

2. Use of an isolated antibody or antigen-binding fragment thereof that binds specifically to human programmed death-1 (PD-1) protein or a pharmaceutical composition comprising the isolated antibody or antigen-binding fragment thereof and a carrier, wherein the isolated antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2, and HCDR3) of a heavy chain variable region (HCVR) having an amino acid sequence of SEQ ID NO: 162, and three light chain CDRs (LCDR1, LCDR2, and LCDR3) of a light chain variable region (LCVR) having an amino acid sequence of SEQ ID NO: 170, in the manufacture of a medicament for inhibiting a T-regulatory (Treg) cell in a subject.

3. Use of an isolated antibody or antigen-binding fragment thereof that binds specifically to human programmed death-1 (PD-1) protein or a pharmaceutical composition comprising the isolated antibody or antigen-binding fragment thereof and a carrier, wherein the isolated antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2, and HCDR3) of a heavy chain variable region (HCVR) having an amino acid sequence of SEQ ID NO: 162, and three light chain CDRs (LCDR1, LCDR2, and LCDR3) of a light chain variable region (LCVR) having an amino acid sequence of SEQ ID NO: 170, in the manufacture of a medicament for enhancing T-cell activation in a subject.

4. The use according to any one of claims 1-3, wherein the subject has a viral infection.

5. The use according to claim 4, wherein the viral infection comprises HIV, HBV, HCV, HPV, LCMV, SIV, or a combination thereof.

6. The use according to any one of claims 1-4, wherein the subject has a tumor.

7. Use of an isolated antibody or antigen-binding fragment thereof that binds specifically to human programmed death-1 (PD-1) protein or a pharmaceutical composition comprising the isolated antibody or antigen-binding fragment thereof and a carrier, wherein the isolated antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2, and HCDR3) of a heavy chain variable region (HCVR) having an amino acid sequence of SEQ ID NO: 162, and three light chain CDRs (LCDR1, LCDR2, and LCDR3) of a light chain variable region (LCVR) having an amino acid sequence of SEQ ID NO: 170, in the manufacture of a medicament for inhibiting the growth of a tumor or tumor cell in a subject.

8. The use according to claim 6 or 7, wherein the tumor comprises brain cancer, renal cell carcinoma, ovarian cancer, prostate cancer, colon cancer, non-small-cell lung cancer, squamous cell carcinoma of head and neck, colorectal cancer, gastric cancer, kidney cancer, breast cancer, multiple myeloma, or melanoma.

9. The use according to any one of claims 1-8, wherein the antibody or antigen-binding fragment thereof or the pharmaceutical composition is to be administered to the subject in combination with a second therapeutic agent or therapy.

10. The use of claim 9, wherein the second therapeutic agent or therapy comprises a NSAID, a corticosteroid, an antibody to a different T-cell co-inhibitor, an antibody to a tumor specific antigen, an IDO inhibitor, an Ang2 inhibitor, a cancer vaccine, an EGFR inhibitor, a TGFβ inhibitor, an antibody to PD-L1, a CTLA-4 inhibitor, a LAG3 inhibitor, a TIM3 inhibitor, a dietary supplement such an antioxidant, a VEGF antagonist, such as an anti-VEGF antibody, a small molecule kinase inhibitor of VEGF receptor, a VEGF-inhibiting fusion protein, surgery, radiation, a chemotherapeutic agent, a cytotoxic agent, or a combination thereof.

11. The use according to any one of claims 1-10, wherein the antibody or antigen-binding fragment thereof or the pharmaceutical composition is to be administered to the subject subcutaneously, intravenously, intradermally, intraperitoneally, orally, intramuscularly or intracranially.

12. The use according to any one of claims 1-11, wherein the antibody or antigen-binding fragment or the pharmaceutical composition is to be administered to the subject at a dose of about 0.1 mg/kg of body weight to about 60 mg/kg of body weight of the subject.

13. An isolated polynucleotide molecule comprising a polynucleotide sequence that encodes a HCVR and/or a LCVR of an isolated antibody or antigen-binding fragment thereof that binds specifically to human programmed death-1 (PD-1) protein, wherein the isolated antibody or antigen-binding fragment thereof comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2, and HCDR3) of a heavy chain variable region (HCVR) having an amino acid sequence of SEQ ID NO: 162, and three light chain CDRs (LCDR1, LCDR2, and LCDR3) of a light chain variable region (LCVR) having an amino acid sequence of SEQ ID NO: 170.

14. A vector comprising the polynucleotide of claim 13.

15. A host cell expressing the vector of claim 14.

16. A method of producing an isolated antibody or antigen-binding fragment thereof, comprising growing the host cell of claim 15 under conditions permitting production of the antibody or antigen-binding fragment thereof, and recovering the antibody or antigen-binding fragment thereof so produced.

17. The method of claim 16, wherein the host cell is a CHO cell.

18. The method of claim 16 or 17, further comprising formulating the antibody or antigen-binding fragment thereof as a pharmaceutical composition comprising an acceptable carrier.

19. An anti-PD-1 antibody or antigen-binding fragment thereof obtainable by the method of claim 16 or claim 17.