CLAIMS

1. An anti-PD-1 antibody comprising a heavy chain immunoglobulin polypeptide comprising SEQ ID NO:23, a light chain immunoglobulin polypeptide comprising SEQ ID NO:40, and an IgG4 heavy chain constant region (Fc).

2. An isolated nucleic acid sequence encoding the heavy chain immunoglobulin polypeptide and the light chain immunoglobulin polypeptide as defined in claim 1.

3. The isolated nucleic acid sequence of claim 2, comprising SEQ ID NO:53 and SEQ ID NO:63.

4. A vector comprising the nucleic acid of claim 2 or claim 3.

5. A host cell comprising the vector of claim 4.

6. A host cell comprising a vector encoding the heavy chain immunoglobulin polypeptide as defined in claim 1 and a vector encoding the light chain immunoglobulin polypeptide as defined in claim 1.

7. The host cell of claim 5 or claim 6, wherein the host cell is a mammalian host cell.

8. A pharmaceutical composition comprising the anti-PD-1 antibody of claim 1 and a pharmaceutically acceptable carrier.

9. The pharmaceutical composition of claim 8, wherein the pharmaceutical composition is formulated for parenteral administration.

10. A method of producing an anti-PD-1 antibody, said method comprising expressing said antibody in vitro in a host cell capable of expressing said antibody and wherein said host cell comprises the vector of claim 4 encoding said antibody (in cis), or comprises a vector encoding said antibody heavy chain immunoglobulin polypeptide as defined in claim 1 and a vector encoding said antibody light chain immunoglobulin polypeptide as defined in claim 1 (in trans).

11. Use of the anti-PD-1 antibody of claim 1 or the pharmaceutical composition of claim 8 or claim 9, in the manufacture of a medicament for the treating of cancer.

12. The use of claim 11, wherein the medicament is to be administered in combination with an agent that inhibits an immune checkpoint pathway.

13. The use of claim 12, wherein the agent inhibits the CTLA-4, TIM-3 or LAG-3 pathway.

14. The use of claim 11, 12 or 13, wherein the medicament is to be administered in combination with an anti-TIM-3 antibody or an anti-LAG-3 antibody.

15. The use of any one of claims 11 to 14, wherein the cancer is selected from the group consisting of: melanoma, renal cell carcinoma, lung cancer, bladder cancer, breast cancer, cervical cancer, colon cancer, gall bladder cancer, laryngeal cancer, liver cancer, thyroid cancer, stomach cancer, salivary gland cancer, prostate cancer, pancreatic cancer, and Merkel cell carcinoma.

16. The use of any one of claims 11 to 15, wherein the anti-PD-1 antibody is to be administered at a dose from about 0.5 to 15 mg/kg of total body weight per day.

17. An anti-PD-1 antibody of claim 1 or a pharmaceutical composition of claim 8 or claim 9 for use in therapy.