

Claims

1. An antibody molecule which binds to programmed death-ligand 1 (PD-L1) and lymphocyte-activation gene 3 (LAG-3), wherein the antibody molecule comprises:

- (i) a complementarity determining region (CDR)-based antigen binding site for PD-L1 comprising the CDRs set forth in SEQ ID NOs 86 to 91; and
- (ii) a LAG-3 antigen binding site located in a CH3 domain of the antibody molecule, wherein the LAG-3 binding site comprises the amino acid sequences WDEPWGED (SEQ ID NO: 1) and PYDRWWVPDE (SEQ ID NO: 3), and wherein the amino acid sequence WDEPWGED is located in the AB loop of the CH3 domain and the amino acid sequence PYDRWWVPDE is located in the EF loop of the CH3 domain.

2. An antibody molecule according to claim 1, wherein the LAG-3 antigen binding site further comprises one of the following sequences in the CD loop of the CH3 domain:

- (i) SNGQPENNY (SEQ ID NOS 2, 8 and 18);
- (ii) SNGQPEDNY (SEQ ID NO: 13);
- (iii) SNGYPEIEF (SEQ ID NO: 23);
- (iv) SNGIPEWNY (SEQ ID NO: 28);
- (v) SNGYAEYNY (SEQ ID NO: 33);
- (vi) SNGYKEENY (SEQ ID NO: 38);
- (vii) SNGVPELNV (SEQ ID NO: 43); or
- (viii) SNGYQEDNY (SEQ ID NO: 48);

preferably wherein the LAG-3 antigen binding site comprises the amino acid sequence set forth in SEQ ID NO: 2, 28, or 38,

preferably wherein the LAG-3 antigen binding site comprises the amino acid sequence set forth in SEQ ID NO: 2.

3. An antibody molecule according to claim 1 or 2, wherein the antibody molecule is an immunoglobulin G (IgG) molecule, preferably an IgG1, IgG2, IgG3, or IgG4 molecule, preferably an IgG1 molecule.

4. An antibody molecule according to any one of claims 1 to 3, wherein the antibody molecule comprises the CH3 domain set forth in SEQ ID NO: 5, 10, 15, 20, 25, 30, 35, 40, 45, or 50, preferably SEQ ID NO: 5, 30, or 40, preferably SEQ ID NO: 5.

5. An antibody molecule according to any one of claims 1 to 4, wherein the antibody molecule comprises a CH2 domain and the CH2 domain has the sequence set forth in SEQ ID NO: 53 or SEQ ID NO: 54.
6. An antibody molecule according to any one of claims 1 to 5, wherein the antibody molecule comprises the sequence set forth in SEQ ID NO: 6, 7, 11, 12, 16, 17, 21, 22, 26, 27, 31, 32, 36, 37, 41, 42, 46, 47, 51, or 52, preferably SEQ ID NO: 6, 7, 31, 32, 41, or 42, preferably SEQ ID NO: 6 or 7.
7. An antibody molecule according to any one of claims 1 to 6, wherein the antibody molecule comprises the VH and/or VL domains set forth in SEQ ID NOs 92 and 93.
8. An antibody molecule according to any one of claims 1-7, wherein the antibody molecule comprises the heavy chain sequence set forth in any one of SEQ ID NOs: 94 to 113, preferably SEQ ID NO: 94, 95, 104, 105, 108, or 109, preferably SEQ ID NO: 94 or 95.
9. An antibody molecule according to claim 7 or 8, wherein the antibody molecule comprises the light chain sequence set forth in SEQ ID NO: 116.
10. An antibody molecule according to claim 9, wherein the antibody molecule comprises the heavy chain sequence set forth in SEQ ID NO: 94 and the light chain sequence set forth in SEQ ID NO: 116.
11. An antibody molecule according to any one of claims 1 to 10, wherein the antibody molecule is conjugated to an immune system modulator, cytotoxic molecule, radioisotope, or detectable label, optionally wherein the immune system modulator or cytotoxic molecule is a cytokine.
12. A nucleic acid encoding an antibody molecule according to any one of claims 1 to 11, or a vector comprising a nucleic acid encoding a antibody molecule according to any one of claims 1 to 11.
13. A recombinant host cell comprising the nucleic acid or vector of claim 12.
14. A method of producing an antibody molecule according to any one of claims 1 to 11, comprising culturing the recombinant host cell of claim 13 under conditions for production of

the antibody molecule, wherein the method optionally further comprises isolating and/or purifying the antibody molecule.

15. A pharmaceutical composition comprising an antibody molecule according to any one of claims 1 to 11 and a pharmaceutically acceptable excipient.

16. An antibody molecule according to any one of claims 1 to 11, for use in a method of treating cancer in a patient, optionally wherein the method further comprises administering to the patient:

(a) an anti-tumour vaccine; or

(b) a chemotherapeutic agent.