

CLAIMS

1. Use of an antibody-drug conjugate that binds to alpha-v beta-6 ($\alpha v\beta 6$) in the manufacture of a medicament for the treatment of a solid tumor in a subject, wherein the medicament comprises an antibody-drug conjugate that binds to $\alpha v\beta 6$ or an antigen-binding fragment thereof conjugated to a monomethyl auristatin or a functional analog thereof or a functional derivative thereof, wherein the medicament is to be administered at a dose of the antibody-drug conjugate ranging from about 0.7 mg/kg to about 2.5 mg/kg of the subject's body weight, and wherein the anti- $\alpha v\beta 6$ antibody or antigen-binding fragment of the antibody-drug conjugate comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- (i) a CDR-H1 comprising the amino acid sequence of SEQ ID NO:1;
- (ii) a CDR-H2 comprising the amino acid sequence of SEQ ID NO:2; and
- (iii) a CDR-H3 comprising the amino acid sequence of SEQ ID NO:3; and

wherein the light chain variable region comprises:

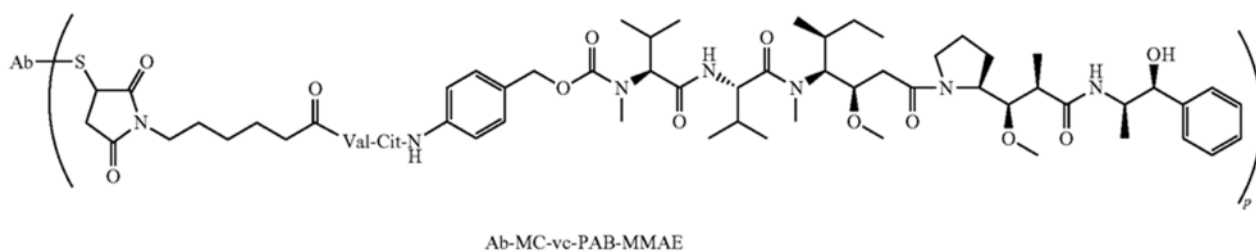
- (i) a CDR-L1 comprising the amino acid sequence of SEQ ID NO:4;
- (ii) a CDR-L2 comprising the amino acid sequence of SEQ ID NO:5; and
- (iii) a CDR-L3 comprising the amino acid sequence of SEQ ID NO:6.

2. The use of claim 1, wherein the anti- $\alpha v\beta 6$ antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising the amino acid sequence of SEQ ID NO:7 and a light chain variable region comprising the amino acid sequence of SEQ ID NO:8.

3. The use of claim 1 or claim 2, wherein the monomethyl auristatin is monomethyl auristatin E (MMAE).

4. The use of any one of claims 1-3, wherein the anti- $\alpha\nu\beta 6$ antibody or antigen-binding fragment thereof of the antibody-drug conjugate is a monoclonal antibody or a monoclonal antigen-binding fragment thereof.

5. The use of claim 4, wherein the linker is attached to monomethyl auristatin E (MMAE), wherein the antibody-drug conjugate has the following structure:



wherein p denotes a number from 1 to 8, S represents a sulphydryl residue of the anti- $\alpha\beta 6$ antibody, and Ab designates the anti- $\alpha\beta 6$ antibody or antigen-binding fragment thereof.

6. The use of claim 5, wherein the average value of p in a population of the antibody-drug conjugates is about 4.

7. The use of any one of claims 1-6, wherein the medicament is to be administered such that the dose of the antibody-drug conjugate is 0.8 mg/kg, 1.0 mg/kg, 1.2 mg/kg, 1.25 mg/kg, 1.5 mg/kg, 1.8 mg/kg, 2.0 or 2.4 mg/kg of the subject's body weight.

8. The use of any one of claims 1-7, wherein the medicament is to be administered once about every 1 week, once about every 2 weeks, once about every 3 weeks, or twice about every 3 weeks.

9. The use of claim 8, wherein the medicament is to be administered once about every 2 weeks.

10. The use of claim 8, wherein the medicament is to be administered is once about every 1 week for 2 consecutive weeks followed by about a 1 week resting period without any administration of the medicament so that each cycle time is about 21 days including the resting period.

11. The use of any one of claims 1-10, wherein the subject has been previously treated for the solid tumor with one or more therapeutic agents and did not respond to treatment, relapsed after the treatment, or experienced disease progression during the treatment, wherein the one or more therapeutic agents is not the antibody-drug conjugate.

12. The use of any one of claims 1-11, wherein the solid tumor is locally advanced or metastatic.

13. The use of any one of claims 1-12, wherein the solid tumor is selected from the group consisting of lung cancer, head and neck cancer, breast cancer, esophageal cancer, gastroesophageal junction cancer, ovarian cancer, peritoneal cancer, or fallopian tube cancer, skin cancer, pancreatic cancer, bladder cancer, cervical cancer, and gastric cancer.

14. The use of any one of claims 1-13, wherein the solid tumor is an advanced stage cancer.

15. The use of any one of claims 1-14, wherein at least about 0.1%, at least about 1%, at least about 2%, at least about 3%, at least about 4%, at least about 5%, at least about 6%, at least about 7%, at least about 8%, at least about 9%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, or at least about 80% of the cancer cells express $\alpha v\beta 6$.

16. The use of any one of claims 1-15, wherein one or more therapeutic effects in the subject is improved after administration of the medicament relative to a baseline.
17. The use of claim 16, wherein the one or more therapeutic effects is selected from the group consisting of: size of a tumor derived from the cancer, objective response rate, duration of response, time to response, progression free survival, and overall survival.
18. The use of any one of claims 1-17, wherein the subject has one or more adverse events and is to be further administered an additional therapeutic agent to eliminate or reduce the severity of the one or more adverse events.
19. The use of any one of claims 1-18, wherein the medicament is to be administered as a monotherapy.
20. The use of any one of claims 1-18, wherein the use further comprises a second medicament comprising one or more additional therapeutic agents that is to be administered to the subject.
21. The use of claim 20, wherein the one or more additional therapeutic agents is a checkpoint inhibitor.
22. The use of claim 21, wherein the checkpoint inhibitor is a PD-1 inhibitor or a PD-L1 inhibitor.
23. The use of claim 22, wherein the PD-1 inhibitor is an anti-PD-1 antibody.
24. The use of claim 23, wherein the anti-PD-1 antibody is pembrolizumab, or a biosimilar thereof.

25. The use of claim 24, wherein the second medicament is to be administered such that the dose of pembrolizumab or biosimilar thereof is about 200 mg.

26. The use of claim 24 or claim 25, wherein the second medicament is to be administered once about every 3 weeks.

27. The use of claim 24, wherein the second medicament is to be administered such that the dose of pembrolizumab or biosimilar thereof is about 400 mg.

28. The use of claim 24 or claim 27, wherein the second medicament is to be administered once about every 6 weeks.

29. The use of any one of claims 21-28, wherein prior to the treatment the tumor comprises one or more cells that express PD-L1.

30. The use of any one of claims 20-29, wherein the one or more additional therapeutic agents is a platinum-based agent.

31. The use of claim 30, wherein the platinum-based agent is carboplatin or cisplatin.

32. The use of any one of claims 20-31, wherein the first dose of the medicament comprising the antibody-drug conjugate is to be administered prior to the first dose of the second medicament comprising one or more additional therapeutic agents.

33. The use of claim 32, wherein the first dose of the medicament comprising the antibody drug conjugate is to be administered at least 1 day, at least 2 days, at least 3 days, at least 4 days, at least 5 days, at least 6 days, at least 7 days, at least 2 weeks, at least 3 weeks, at least 4 weeks, at least 2 months, at least 3 months, at least 4 months, at least 5 months, or

at least 6 months prior to the first dose of the second medicament comprising one or more additional therapeutic agents.

34. A kit comprising:

(a) a medicament comprising a dosage ranging from about 0.7 mg/kg to about 2.5 mg/kg of an antibody-drug conjugate that binds to $\alpha v\beta 6$, wherein the antibody-drug conjugate comprises an anti- $\alpha v\beta 6$ antibody or an antigen-binding fragment thereof conjugated to a monomethyl auristatin or a functional analog thereof or a functional derivative thereof; and

(b) instructions for using the medicament according to the use of any one of claims 1-33.

35. An antibody-drug conjugate that binds to $\alpha v\beta 6$ for treating cancer in a subject according to the use of any one of claims 1-33, wherein the antibody-drug conjugate comprises an anti- $\alpha v\beta 6$ antibody or an antigen-binding fragment thereof conjugated to a monomethyl auristatin or a functional analog thereof or a functional derivative thereof.