

Furthermore, the presently disclosed subject matter provides a bispecific molecule comprising the antibody or antigen-binding fragment thereof disclosed herein, linked to a second functional moiety. In certain embodiments, the second functional moiety has a different binding specificity than the antibody or antigen binding fragment thereof. In certain embodiments, the second functional moiety has a binding specificity for an immune cell. In certain embodiments, the second functional moiety has a binding specificity for CD3. The presently disclosed subject matter also provides a composition comprising such bispecific molecule and a pharmaceutically acceptable carrier.

In addition, the presently disclosed subject matter provides an isolated nucleic acid that encodes the antibody or antigen-binding fragment thereof disclosed herein, an expression vector comprising such nucleic acid molecule, and a host cell comprising such expression vector.

Furthermore, the presently disclosed subject matter provides a method for detecting BCMA in a whole cell or tissue. In certain embodiments, the method comprises: contacting a cell or tissue with the antibody or antigen-binding fragment thereof disclosed herein, wherein said antibody or antigen-binding fragment thereof comprises a detectable label; and determining the amount of the labeled antibody or antigen-binding fragment thereof bound to said cell or tissue by measuring the amount of detectable label associated with said cell or tissue, wherein the amount of bound antibody or antigen-binding fragment thereof indicates the amount of BCMA in said cell or tissue.

Furthermore, the presently disclosed subject matter provides uses of an effective amount of the antibody or antigen-binding fragment thereof as described herein, in the manufacture of medicament for treating a tumor in a subject.

Furthermore, the presently disclosed subject matter provides a method of treating a tumor in a subject. In certain embodiments, the method comprises: administering an effective amount of the antibody or antigen-binding fragment thereof disclosed herein to the subject, thereby inducing death of a tumor cell in the subject. In certain embodiments, the method reduces the number of the tumor cells. In certain embodiments, the method reduces the tumor size. In certain embodiments, the method eradicates the tumor in the subject. In certain embodiments, the subject is a human.

In addition, the presently disclosed subject matter provides use of the antibody or antigen-binding fragment disclosed herein for the treatment of a tumor,

41. The bispecific molecule of claim 40, wherein the second functional moiety has a different binding specificity than said antibody or antigen binding fragment thereof.
42. The bispecific molecule of claim 40 or claim 41, wherein the second functional moiety has a binding specificity for an immune cell.
43. The bispecific molecule of any one of claims 40-42, wherein the second functional moiety has a binding specificity for CD3.
44. A composition comprising the bispecific molecule of any one of claims 40-43 and a pharmaceutically acceptable carrier.
45. An isolated nucleic acid that encodes an antibody or antigen-binding fragment thereof of any one of claims 1-35.
46. An expression vector comprising the nucleic acid molecule of claim 45.
47. A host cell comprising the expression vector of claim 46.
48. A method for detecting BCMA in a whole cell or tissue, comprising:
contacting a cell or tissue with the antibody or antigen-binding fragment thereof of any one of claims 1-35, wherein said antibody or antigen-binding fragment thereof comprises a detectable label; and
determining the amount of the labeled antibody or antigen-binding fragment thereof bound to said cell or tissue by measuring the amount of detectable label associated with said cell or tissue, wherein the amount of bound antibody or antigen-binding fragment thereof indicates the amount of BCMA in said cell or tissue.
49. Use of an effective amount of the antibody or antigen-binding fragment thereof of any one of claims 1-35, in the manufacture of a medicament for treating a tumor in a subject. .
50. The use of claim 49, wherein the method reduces the number of the tumor cells.
51. The use of claim 49, wherein the method reduces the tumor size.
52. The use of claim 49, wherein the method eradicates the tumor in the subject.
53. The use of any one of claims 49-52, wherein the tumor is selected from the group consisting of multiple myeloma, Non-Hodgkin Lymphoma, Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), glioblastoma, and Waldenstrom's Macroglobulinemia.

- 54. The use of claim 53, wherein the tumor is multiple myeloma.
- 55. The use of any one of claims 49-54, wherein the subject is a human.
- 56. A kit for treating a tumor, comprising the antibody or antigen-binding fragment thereof of any one of claims 1-35.
- 57. The kit of claim 56, wherein the kit further comprises written instructions for using the antibody or antigen-binding fragment thereof for treating a subject having a tumor.
- 58. The kit of claim 56 or 57, wherein the tumor is multiple myeloma.