What is claimed is:

1. An antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA, wherein the antigen-binding molecule or antigen-binding fragment thereof comprises HCDR sequences of the heavy chain variable region the sequence of which is as set forth in SEQ ID NO: 14, and/or LCDR sequences of the light chain variable region the sequence of which is as set forth in SEQ ID NO: 15; preferably, the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA comprises a heavy chain variable region (VH) and a light chain variable region (VL), the heavy chain variable region comprises HCDR1 the sequence of which is as set forth in SEQ ID NO: 16, HCDR2 the sequence of which is as set forth in SEQ ID NO: 17, and HCDR3 the sequence of which is as set forth in SEQ ID NO: 18, and/or, the light chain variable region comprises an LCDR1 the sequence of which is as set forth in SEQ ID NO: 19, LCDR2 the sequence of which is as set forth in SEQ ID NO: 20, and LCDR3 the sequence of which is as set forth in SEQ ID NO: 21.

2. The antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of claim 1, the antigen-binding molecule or antigen-binding fragment thereof specifically binds to BCMA comprises a heavy chain variable region as set forth in SEQ ID NO: 14, and/or a light chain variable region as set forth in SEQ ID NO: 15.

3. The antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of claim 1 or 2, further wherein:

i) the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA further comprises a heavy chain constant region and/or a light chain constant region; preferably, the heavy chain constant region comprises Fc; more preferably, Fc is derived from murine or human; even more preferably, the sequence of the Fc is either natural or modified; further preferably, the Fc domain of the IgG1 comprises the amino acid sequence as set forth in SEQ ID NO: 38;

ii) The antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA is a monoclonal antibody, a bispecific binding molecule, a multispecific binding molecule, a murine antibody, a humanized antibody, a chimeric antibody, a modified antibody, a fully human antibody, a full-length antibody, a heavy chain antibody, a nanobody, a Fab, an Fv, a scFv, a F(ab')2, a linear antibody, and/or a heavy chain single-domain antibody; and/or

iii) the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA is of the IgG1, IgG2, IgG3, or IgG4 isotype.

4. The antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-3, comprising the heavy chain amino acid sequence as set forth in SEQ ID NO: 9, and/or the light chain amino acid sequence as set forth in SEQ ID NO: 7.

5. A fusion protein, wherein one of the fused portions of the fusion protein comprises the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4.

6. An antibody-drug conjugate, wherein the antibody-drug conjugate is formed by coupling the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4 to additional biologically active molecules; preferably, the additional biologically active molecule is a small molecule drug; preferably, the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA is linked to the additional biologically active molecules via a linker.

7. A nucleic acid encoding the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4, or a recombinant vector comprising the nucleic acid, or a host cell comprising the nucleic acid or the recombinant vector; preferably, the host cell is a prokaryotic cell (preferably *E. coli*), or an eukaryotic cell (preferably a mammalian cell or yeast; more preferably, the mammalian cell is a CHO cell or a HEK293 cell).

8. A method for preparing the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4, comprising culturing the host cell of claim 7 under suitable conditions and purifying the expression product obtained from the cell.

9. The antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4, the fusion protein of claim 5, the antibody-drug conjugate of claim 6, or the nucleic acid, the recombinant vector, or the host cell of claim 7 for use in the treatment or amelioration of tumors;

preferably, the medicament targets tumor cells with abnormal expression of BCMA; preferably, the tumor cell is selected from the group consisting of tumor cells of the following tumors: lymphomas, such as multiple myeloma, and metastatic cancers of the above tumors.

10. A pharmaceutical composition, comprising an effective amount of the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4, the fusion protein of claim 5, the antibody-drug conjugate of claim 6, or the nucleic acid, the recombinant vector, or the host cell of claim 7;

preferably, the pharmaceutical composition further comprises a pharmaceutically acceptable carrier; preferably, the pharmaceutical composition further comprises one or more additional therapeutic agents.

11. A chimeric antigen receptor (CAR) or a cell comprising the chimeric antigen receptor, comprising the antigen-binding molecule or antigen-binding fragment thereof that specifically binds to BCMA of any one of claims 1-4.

12. The pharmaceutical composition of claim 10 for use in inducing the death of a cell expressing BCMA, wherein the cell expressing BCMA is a tumor cell;

preferably, the tumor cell is selected from the group consisting of tumor cells of the following tumors: lymphomas, such as multiple myeloma, and metastatic cancers of the above tumors.

13. The pharmaceutical composition of claim 10 for use in treating a disease associated with expression of BCMA in a subject;

preferably, the disease is a tumor; preferably, the tumor is selected from the group consisting of lymphomas such as multiple myeloma, and metastatic cancers of the above tumors;

more preferably, the method further comprises administering an additional therapeutic agent to the subject.