

[0008] Mice in which the λ (lambda) light (L) chain locus and/or the λ and κ (kappa) L chain loci have been functionally silenced and antibodies produced by such mice are described in U.S. Patent Nos. 7,541,513 and 8,367,888. Recombinant production of heavy chain-only antibodies in mice and rats has been reported, for example, in WO2006008548; U.S. Application Publication No. 20100122358; Nguyen et al., 2003, *Immunology*; 109(1), 93-101; Brüggemann et al., *Crit. Rev. Immunol.*; 2006, 26(5):377-90; and Zou et al., 2007, *J Exp Med*; 204(13): 3271–3283. The production of knockout rats via embryo microinjections of zinc-finger nucleases is described in Geurts et al., 2009, *Science*, 325(5939):433. Soluble heavy chain-only antibodies and transgenic rodents comprising a heterologous heavy chain locus producing such antibodies are described in U. S. Patent Nos. 8,883,150 and 9,365,655. CAR-T structures comprising single-domain antibodies as binding (targeting) domain are described, for example, in Iri-Sofla et al., 2011, *Experimental Cell Research* 317:2630-2641 and Jamnani et al., 2014, *Biochim Biophys Acta*, 1840:378-386.

SUMMARY OF THE INVENTION

[0009] [AspectExample](#) of the [invention-disclosure](#) relate to antibodies, such as heavy chain antibodies, including, but not limited to, UniAbs™, that bind to BCMA. Further [aspectexamples](#) of the [invention-disclosure](#) relate to methods of making such antibodies, compositions comprising such antibodies, and their use in the treatment of B-cell disorders that are characterized by the expression of BCMA.

[0010] [AspectExample](#) of the [invention-disclosure](#) include multi-specific antibodies that bind to BCMA, comprising a first binding unit comprising a variable region comprising a CDR3 sequence having at least 85% sequence identity to SEQ ID NO: 3.

[0011] [AspectExample](#) of the [invention-disclosure](#) include multi-specific antibodies that bind to BCMA, comprising a first binding unit comprising a variable region comprising a CDR1 sequence, a CDR2 sequence, and a CDR3 sequence, wherein the CDR1, CDR2 and CDR3 sequences combined have at least 85% sequence identity to SEQ ID NOs: 1-3 combined.

[0012] [AspectExample](#) of the [invention-disclosure](#) include multi-specific antibodies that bind to BCMA, comprising a first binding unit comprising a variable region comprising: a CDR1 sequence comprising the sequence of SEQ ID NO: 1; a CDR2 sequence comprising the sequence of SEQ ID NO: 2; and a CDR3 sequence comprising the sequence of SEQ ID NO: 3.

[0013] In some [embodimentsexamples](#), the CDR1, CDR2 and CDR3 sequences are present in a human VH framework. In some [embodimentsexamples](#), the variable region is a heavy chain-only variable region. In some [embodimentsexamples](#), the variable region comprises a sequence having at least 95% sequence identity to SEQ ID NO: 12. In some [embodimentsexamples](#), the variable region comprises a sequence comprising SEQ ID NO: 12. In some [embodimentsexamples](#), the variable region is in a monovalent or bivalent configuration

- [0014] In some [embodimentsexamples](#), a multi-specific antibody further comprises a heavy chain constant region sequence, in the absence of a CH1 sequence. In some [embodimentsexamples](#), a heavy chain constant region sequence comprises a CH2 domain and a CH3 domain, but no CH1 domain. In some [embodimentsexamples](#), the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36).
- [0015] In some [embodimentsexamples](#), the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40).
- [0016] In some [embodimentsexamples](#), a multi-specific antibody further comprises a hinge region sequence positioned between the heavy chain-only variable region and the CH2 domain. In some [embodimentsexamples](#), the hinge region sequence comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32). In some [embodimentsexamples](#), the hinge region sequence comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).
- [0017] In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366W mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.
- [0018] In some [embodimentsexamples](#), a multi-specific antibody further comprises a second binding unit that binds to La protein. In some [embodimentsexamples](#), the second binding unit comprises: (a) a heavy chain variable region comprising: (i) a CDR1 sequence comprising any one of the sequences of SEQ ID NOs: 4 or 7; and (ii) a CDR2 sequence comprising the sequence of SEQ ID NO: 5; and (iii) a CDR3 sequence comprising any one of the sequences of SEQ ID NOs: 6 or 8; and (b) a light chain variable region comprising: (i) a CDR1 sequence comprising the sequence of SEQ ID NO: 9; and (ii) a CDR2 sequence comprising the sequence of SEQ ID NO: 10; and (iii) a CDR3 sequence comprising the sequence of SEQ ID NO: 11.
- [0019] In some [embodimentsexamples](#), the heavy chain variable region of the second binding unit comprises: (i) a CDR1 sequence comprising the sequence of SEQ ID NO: 4, a CDR2 sequence comprising the sequence of SEQ ID NO: 5, and a CDR3 sequence comprising the sequence of SEQ ID NO: 6; or (ii) a CDR1 sequence comprising the sequence of SEQ ID NO: 7, a CDR2 sequence comprising the sequence of SEQ ID NO: 5, and a CDR3 sequence comprising the sequence of SEQ ID NO: 8.

[0020] In some [embodimentsexamples](#), the CDR1, CDR2 and CDR3 sequences of the heavy chain variable region of the second binding unit are present in a human VH framework. In some [embodimentsexamples](#), the CDR1, CDR2 and CDR3 sequences of the light chain variable region of the second binding unit are present in a human VL framework. In some [embodimentsexamples](#), the human VL framework is a human V kappa framework. In some [embodimentsexamples](#), the human VL framework is a human V lambda framework.

[0021] In some [embodimentsexamples](#), the second binding unit comprises a heavy chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 14 and a light chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 16. In some [embodimentsexamples](#), the second binding unit comprises a heavy chain variable region comprising the sequence of SEQ ID NO: 14 and a light chain variable region comprising the sequence of SEQ ID NO: 16. In some [embodimentsexamples](#), the second binding unit comprises a heavy chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 15 and a light chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 17. In some [embodimentsexamples](#), the second binding unit comprises a heavy chain variable region comprising the sequence of SEQ ID NO: 15 and a light chain variable region comprising the sequence of SEQ ID NO: 17.

[0022] In some [embodimentsexamples](#), the heavy chain variable region and the light chain variable region of the second binding unit are on a common polypeptide subunit of the multi-specific antibody, and are connected by a linker sequence. In some [embodimentsexamples](#), the heavy chain variable region and the light chain variable region of the second binding unit are on different polypeptide subunits of the multi-specific antibody.

[0023] In some [embodimentsexamples](#), the second binding unit further comprises a heavy chain constant region. In some [embodimentsexamples](#), the heavy chain constant region comprises a CH1 domain, a hinge region, a CH2 domain, and a CH3 domain. In some [embodimentsexamples](#), the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36). In some [embodimentsexamples](#), the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40). In some [embodimentsexamples](#), the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32). In some [embodimentsexamples](#), the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

[0024] In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), a multi-specific

antibody further comprises a variant human IgG4 CH3 domain comprising a T366W mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.

[0025] In some [embodimentsexamples](#), the second binding unit further comprises a light chain constant region. In some [embodimentsexamples](#), the light chain constant region comprises a human Vkappa constant region sequence. In some [embodimentsexamples](#), the light chain constant region comprises a human Vlambd constant region sequence. In some [embodimentsexamples](#), the multi-specific antibody is bispecific.

[0026] [AspectExample](#)s of the [invention-disclosure](#) include multi-specific antibodies comprising: (a) a first binding unit that binds to La protein, comprising: (i) a heavy chain variable region comprising: a CDR1 sequence of SEQ ID NOs: 4 or 7, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 6 or 8, in a human VH framework; and (ii) a light chain variable region comprising: a CDR1 sequence of SEQ ID NO: 9, a CDR2 sequence of SEQ ID NO: 10, and a CDR3 sequence of SEQ ID NO: 11, in a human VL framework; and (b) a second binding unit that binds to BCMA, comprising: (i) an antigen-binding domain of an anti-BCMA heavy chain-only antibody, comprising a CDR1 sequence of SEQ ID NO: 1, a CDR2 sequence of SEQ ID NO: 2, and a CDR3 sequence of SEQ ID NO: 3, in a human VH framework, wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody is in a monovalent or bivalent configuration.

[0027] In some [embodimentsexamples](#), the heavy chain variable region and the light chain variable region of the first binding unit are on a common polypeptide subunit of the multi-specific antibody, and are connected by a linker sequence. In some [embodimentsexamples](#), the heavy chain variable region and the light chain variable region of the first binding unit are on different polypeptide subunits of the multi-specific antibody.

[0028] In some [embodimentsexamples](#), the heavy chain variable region of the first binding unit comprises: (i) a CDR1 sequence of SEQ ID NO: 4, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 6; or (ii) a CDR1 sequence of SEQ ID NO: 7, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 8. In some [embodimentsexamples](#), the human VL framework is a human Vkappa framework. In some [embodimentsexamples](#), the human VL framework is a human Vlambd framework. In some [embodimentsexamples](#), the heavy chain variable region of the first binding unit comprises a sequence having at least 95% identity to SEQ ID NO: 14 or SEQ ID NO: 15. In some [embodimentsexamples](#), the heavy chain variable region of the first binding unit comprises the sequence of SEQ ID NO: 14 or SEQ ID NO: 15. In some [embodimentsexamples](#), the light chain variable region of the first binding unit comprises a sequence having at least 95% identity to SEQ ID NO: 16 or SEQ ID NO: 17. In some [embodimentsexamples](#), the light chain variable region of the first binding unit comprises the sequence of SEQ ID NO: 16 or SEQ ID NO: 17. In some [embodimentsexamples](#), the antigen-binding domain of the anti-BCMA heavy chain-only antibody comprises a variable region sequence having at least 95% identity to the sequence of SEQ ID

NO: 12. In some [embodimentsexamples](#), the antigen-binding domain of the anti-BCMA heavy chain-only antibody comprises a variable region sequence comprising the sequence of SEQ ID NO: 12.

[0029] In some [embodimentsexamples](#), the antigen-binding domain of the anti-BCMA heavy chain-only antibody is in a bivalent configuration, and comprises a linker sequence. In some [embodimentsexamples](#), the linker sequence comprises a G4S linker sequence.

[0030] In some [embodimentsexamples](#), the first binding unit further comprises a heavy chain constant region. In some [embodimentsexamples](#), the heavy chain constant region comprises a CH1 domain, a hinge region, a CH2 domain, and a CH3 domain. In some [embodimentsexamples](#), the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36). In some [embodimentsexamples](#), the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40). In some [embodimentsexamples](#), the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32). In some [embodimentsexamples](#), the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

[0031] In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366W mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.

[0032] In some [embodimentsexamples](#), the first binding unit further comprises a light chain constant region. In some [embodimentsexamples](#), the light chain constant region comprises a human Vkappa constant region sequence. In some [embodimentsexamples](#), the light chain constant region comprises a human Vlambd constant region sequence.

[0033] In some [embodimentsexamples](#), the second binding unit further comprises a heavy chain constant region sequence, in the absence of a CH1 sequence. In some [embodimentsexamples](#), the heavy chain constant region sequence comprises a CH2 domain and a CH3 domain, but no CH1 domain. In some [embodimentsexamples](#), the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36). In some [embodimentsexamples](#), the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain

comprising a T366W mutation (SEQ ID NO: 39). In some [embodimentsexamples](#), the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40). In some [embodimentsexamples](#), the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32). In some [embodimentsexamples](#), the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

[0034] In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366W mutation. In some [embodimentsexamples](#), a multi-specific antibody further comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation. In some [embodimentsexamples](#), the multi-specific antibody is bispecific.

[0035] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20.

[0036] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20.

[0037] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.

[0038] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.

[0039] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 25; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20.

[0040] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20.

- [0041] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 25; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.
- [0042] [AspectExamples](#) of the [invention-disclosure](#) include bispecific three-chain antibody-like molecules that bind to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.
- [0043] [AspectExamples](#) of the [invention-disclosure](#) include pharmaceutical compositions comprising an antibody as described herein.
- [0044] [AspectExamples](#) of the [invention-disclosure](#) include methods for the treatment of a B-cell disorder characterized by expression of BCMA, comprising administering to a subject with said disorder an antibody or a pharmaceutical composition as described herein.
- [0045] [AspectExample](#) of the [invention-disclosure](#) include use of an antibody as described herein in the preparation of a medicament for the treatment of a B-cell disorder characterized by expression of BCMA.
- [0046] [AspectExample](#) of the [invention-disclosure](#) include an antibody as described herein for use in the treatment of a B-cell disorder characterized by expression of BCMA.
- [0047] In some [embodimentsexamples](#), the disorder is multiple myeloma (MM). In some [embodimentsexamples](#), the disorder is an autoimmune disorder. In some [embodimentsexamples](#), the autoimmune disorder is systemic lupus erythematosus (SLE). In some [embodimentsexamples](#), the autoimmune disorder is rheumatoid arthritis (RA). In some [embodimentsexamples](#), the autoimmune disorder is multiple sclerosis (MS).
- [0048] [AspectExample](#) of the [invention-disclosure](#) include a polynucleotide encoding an antibody as described herein. A vector comprising a polynucleotide as described herein, and a cell comprising a vector as described herein.
- [0049] [AspectExamples](#) of the [invention-disclosure](#) include methods of producing an antibody as described herein, comprising growing a cell as described herein under conditions permissive for expression of the antibody, and isolating the antibody from the cell.
- [0050] [AspectExamples](#) of the [invention-disclosure](#) include methods of making an antibody as described herein, comprising immunizing a UniRat animal with BCMA and identifying BCMA-binding heavy chain sequences.

[0051] AspectExamples of the invention-disclosure include methods of treatment, comprising administering to an individual in need an effective dose of an antibody or pharmaceutical composition as described herein.

[0052] These and further aspectexamples will be further explained in the rest of the disclosure, including the Examples.

[0052a] In one aspect, the present disclosure refers to a multi-specific antibody comprising: (a) a first binding unit that binds to La protein, comprising: (i) a heavy chain variable region comprising: a CDR1 sequence of SEQ ID NOs: 4 or 7, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 6 or 8, in a human VH framework; and (ii) a light chain variable region comprising: a CDR1 sequence of SEQ ID NO: 9, a CDR2 sequence of SEQ ID NO: 10, and a CDR3 sequence of SEQ ID NO: 11, in a human VL framework; and (b) a second binding unit that binds to BCMA, comprising: (i) an antigen-binding domain of an anti-BCMA heavy chain-only antibody, comprising a CDR1 sequence of SEQ ID NO: 1, a CDR2 sequence of SEQ ID NO: 2, and a CDR3 sequence of SEQ ID NO: 3, in a human VH framework, wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody is in a monovalent or bivalent configuration.

[0052b] In another aspect, the present disclosure refers to a bispecific three-chain antibody-like molecule that binds to BCMA and La protein, comprising: (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19;

(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 25; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22; (b) a second heavy chain polypeptide subunit comprising

the sequence of SEQ ID NO: 25; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23; or (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22; (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27; and (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.

[0052c] In another aspect, the present disclosure refers to a pharmaceutical composition comprising an antibody as disclosed herein.

[0052d] In another aspect, the present disclosure refers to use of an antibody as disclosed herein, or the pharmaceutical composition as disclosed herein, in the manufacture of a medicament for treating a B-cell disorder characterized by expression of BCMA.

[0052e] In another aspect, the present disclosure refers to an antibody as disclosed herein, or the pharmaceutical composition as disclosed herein, for use in therapy.

[0052f] In another aspect, the present disclosure refers to a polynucleotide encoding an antibody as disclosed herein. In yet another aspect, the present disclosure refers to a vector of the polypeptide as disclosed herein. In yet another aspect, the present disclosure refers to a cell comprising the vector as disclosed herein.

[0052g] In yet another aspect, the present disclosure refers to a method of producing an antibody of as disclosed herein, comprising growing a cell as disclosed herein under conditions permissive for expression of the antibody, and isolating the antibody from the cell.

[0052h] In yet another aspect, the present disclosure refers to a method of making an antibody as disclosed herein, comprising immunizing a UniRat animal with BCMA and identifying BCMA-binding heavy chain sequences.

BRIEF DESCRIPTION OF THE DRAWINGS

CLAIMS:

1. ~~———— A multi-specific antibody that binds to **BCMA**, comprising a first binding unit comprising a variable region comprising a CDR3 sequence having at least 85% sequence identity to SEQ ID NO: 3.~~
2. ~~———— A multi-specific antibody that binds to **BCMA**, comprising a first binding unit comprising a variable region comprising a CDR1 sequence, a CDR2 sequence, and a CDR3 sequence, wherein the CDR1, CDR2 and CDR3 sequences combined have at least 85% sequence identity to SEQ ID NOs: 1-3 combined.~~
3. ~~———— A multi-specific antibody that binds to **BCMA**, comprising a first binding unit comprising a variable region comprising:
 - a CDR1 sequence comprising the sequence of SEQ ID NO: 1;
 - a CDR2 sequence comprising the sequence of SEQ ID NO: 2; and
 - a CDR3 sequence comprising the sequence of SEQ ID NO: 3.~~
4. ~~———— The multi-specific antibody of any one of claims 1-3, wherein the CDR1, CDR2 and CDR3 sequences are present in a human VH framework.~~
5. ~~———— The multi-specific antibody of any one of claims 1-4, wherein the variable region is a heavy chain-only variable region.~~
6. ~~———— The multi-specific antibody of any one of claims 1-5, wherein the variable region comprises a sequence having at least 95% sequence identity to SEQ ID NO: 12.~~
7. ~~———— The multi-specific antibody of claim 6, wherein the variable region comprises a sequence comprising SEQ ID NO: 12.~~
8. ~~———— The multi-specific antibody of any one of claims 1-7, wherein the variable region is in a monovalent or bivalent configuration.~~
9. ~~———— The multi-specific antibody of any one of claims 1-8, further comprising a heavy chain constant region sequence, in the absence of a CH1 sequence.~~
10. ~~———— The multi-specific antibody of claim 9, wherein the heavy chain constant region sequence comprises a CH2 domain and a CH3 domain, but no CH1 domain.~~

~~11. — The multi-specific antibody of claim 10, wherein the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36).~~

~~12. — The multi-specific antibody of claim 10, wherein the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation.~~

~~13. — The multi-specific antibody of claim 10, wherein the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38).~~

~~14. — The multi-specific antibody of claim 10, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39).~~

~~15. — The multi-specific antibody of claim 10, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40).~~

~~16. — The multi-specific antibody of claim 10, further comprising a hinge region sequence positioned between the heavy chain-only variable region and the CH2 domain.~~

~~17. — The multi-specific antibody of claim 16, wherein the hinge region sequence comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32).~~

~~18. — The multi-specific antibody of claim 16, wherein the hinge region sequence comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).~~

~~19. — The multi-specific antibody of claim 18, further comprising a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation.~~

~~20. — The multi-specific antibody of claim 19, further comprising a variant human IgG4 CH3 domain comprising a T366W mutation.~~

21. ~~— The multi-specific antibody of claim 19, further comprising a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.~~

22. ~~— The multi-specific antibody of any one of claims 1-21, further comprising a second binding unit that binds to La protein.~~

23. ~~— The multi-specific antibody of claim 22, wherein the second binding unit comprises:~~

- ~~— (a) — a heavy chain variable region comprising:
 - ~~(i) a CDR1 sequence comprising any one of the sequences of SEQ ID NOs: 4 or 7; and~~
 - ~~(ii) a CDR2 sequence comprising the sequence of SEQ ID NO: 5; and~~
 - ~~(iii) a CDR3 sequence comprising any one of the sequences of SEQ ID NOs: 6 or 8; and~~~~
- ~~— (b) — a light chain variable region comprising:
 - ~~(i) a CDR1 sequence comprising the sequence of SEQ ID NO: 9; and~~
 - ~~(ii) a CDR2 sequence comprising the sequence of SEQ ID NO: 10; and~~
 - ~~(iii) a CDR3 sequence comprising the sequence of SEQ ID NO: 11.~~~~

24. ~~— The multi-specific antibody of claim 23, wherein the heavy chain variable region of the second binding unit comprises:~~

- ~~(i) a CDR1 sequence comprising the sequence of SEQ ID NO: 4, a CDR2 sequence comprising the sequence of SEQ ID NO: 5, and a CDR3 sequence comprising the sequence of SEQ ID NO: 6; or~~
- ~~(i) a CDR1 sequence comprising the sequence of SEQ ID NO: 7, a CDR2 sequence comprising the sequence of SEQ ID NO: 5, and a CDR3 sequence comprising the sequence of SEQ ID NO: 8.~~

25. ~~— The multi-specific antibody of any one of claims 23-24, wherein the CDR1, CDR2 and CDR3 sequences of the heavy chain variable region of the second binding unit are present in a human VH framework.~~

26. ~~— The multi-specific antibody of any one of claims 23-25, wherein the CDR1, CDR2 and CDR3 sequences of the light chain variable region of the second binding unit are present in a human VL framework.~~

~~27. — The multi-specific antibody of claim 26, wherein the human VL framework is a human Vkappa framework.~~

~~28. — The multi-specific antibody of claim 26, wherein the human VL framework is a human Vlambda framework.~~

~~29. — The multi-specific antibody of any one of claims 22-28, wherein the second binding unit comprises a heavy chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 14 and a light chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 16.~~

~~30. — The multi-specific antibody of claim 29, wherein the second binding unit comprises a heavy chain variable region comprising the sequence of SEQ ID NO: 14 and a light chain variable region comprising the sequence of SEQ ID NO: 16.~~

~~31. — The multi-specific antibody of any one of claims 22-28, wherein the second binding unit comprises a heavy chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 15 and a light chain variable region comprising a sequence having at least 95% sequence identity to SEQ ID NO: 17.~~

~~32. — The multi-specific antibody of claim 31, wherein the second binding unit comprises a heavy chain variable region comprising the sequence of SEQ ID NO: 15 and a light chain variable region comprising the sequence of SEQ ID NO: 17.~~

~~33. — The multi-specific antibody of any one of claims 23-32, wherein the heavy chain variable region and the light chain variable region of the second binding unit are on a common polypeptide subunit of the multi-specific antibody, and are connected by a linker sequence.~~

~~34. — The multi-specific antibody of any one of claims 23-32, wherein the heavy chain variable region and the light chain variable region of the second binding unit are on different polypeptide subunits of the multi-specific antibody.~~

~~35. — The multi-specific antibody of any one of claims 22-34, wherein the second binding unit further comprises a heavy chain constant region.~~

36. — The multi-specific antibody of claim 35, wherein the heavy chain constant region comprises a CH1 domain, a hinge region, a CH2 domain, and a CH3 domain.

37. — The multi-specific antibody of claim 36, wherein the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36).

38. — The multi-specific antibody of claim 36, wherein the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation.

39. — The multi-specific antibody of claim 36, wherein the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38).

40. — The multi-specific antibody of claim 36, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39).

41. — The multi-specific antibody of claim 36, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40).

42. — The multi-specific antibody of claim 36, wherein the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32).

43. — The multi-specific antibody of claim 36, wherein the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

44. — The multi-specific antibody of claim 43, further comprising a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation.

45. — The multi-specific antibody of claim 44, further comprising a variant human IgG4 CH3 domain comprising a T366W mutation.

~~46. The multi-specific antibody of claim 44, further comprising a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.~~

~~47. The multi-specific antibody of any one of claims 22-46, wherein the second binding unit further comprises a light chain constant region.~~

~~48. The multi-specific antibody of claim 47, wherein the light chain constant region comprises a human V κ constant region sequence.~~

~~49. The multi-specific antibody of claim 47, wherein the light chain constant region comprises a human V λ constant region sequence.~~

~~50. The multi-specific antibody of any one of claims 1-49, which is bispecific.~~

~~51.~~ A multi-specific antibody comprising:

(a) a first binding unit that binds to **La protein**, comprising:

(i) a heavy chain variable region comprising: a CDR1 sequence of SEQ ID NOs: 4 or 7, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 6 or 8, in a human VH framework; and

(ii) a light chain variable region comprising: a CDR1 sequence of SEQ ID NO: 9, a CDR2 sequence of SEQ ID NO: 10, and a CDR3 sequence of SEQ ID NO: 11, in a human VL framework; and

(b) a second binding unit that binds to **BCMA**, comprising:

(i) an antigen-binding domain of an anti-BCMA heavy chain-only antibody, comprising a CDR1 sequence of SEQ ID NO: 1, a CDR2 sequence of SEQ ID NO: 2, and a CDR3 sequence of SEQ ID NO: 3, in a human VH framework, wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody is in a monovalent or bivalent configuration.

~~52.~~ The multi-specific antibody of claim ~~51~~, wherein the heavy chain variable region and the light chain variable region of the first binding unit are on a common polypeptide subunit of the multi-specific antibody, and are connected by a linker sequence.

~~533.~~ The multi-specific antibody of claim ~~51~~1, wherein the heavy chain variable region and the light chain variable region of the first binding unit are on different polypeptide subunits of the multi-specific antibody.

~~544.~~ The multi-specific antibody of any one of claims ~~51-53~~1-3, wherein the heavy chain variable region of the first binding unit comprises:

(i) a CDR1 sequence of SEQ ID NO: 4, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 6; or

(ii) a CDR1 sequence of SEQ ID NO: 7, a CDR2 sequence of SEQ ID NO: 5, and a CDR3 sequence of SEQ ID NO: 8.

~~555.~~ The multi-specific antibody of any one of claims ~~51-54~~1-4, wherein the human VL framework is a human Vkappa framework-

~~56. — The multi-specific antibody of any one of claims 51-54; or~~ wherein the human VL framework is a human Vlambda framework.

~~576.~~ The multi-specific antibody of any one of claims ~~51-56~~1-5, wherein the heavy chain variable region of the first binding unit comprises a sequence having at least 95% identity to SEQ ID NO: 14 or SEQ ID NO: 15; ~~or~~;

~~58. — The multi-specific antibody of claim 57,~~ wherein the heavy chain variable region of the first binding unit comprises the sequence of SEQ ID NO: 14 or SEQ ID NO: 15.

~~597.~~ The multi-specific antibody of any one of claims ~~51-58~~1-6, wherein the light chain variable region of the first binding unit comprises a sequence having at least 95% identity to SEQ ID NO: 16 or SEQ ID NO: 17; ~~or~~;

~~60. — The multi-specific antibody of claim 59,~~ wherein the light chain variable region of the first binding unit comprises the sequence of SEQ ID NO: 16 or SEQ ID NO: 17.

~~618.~~ The multi-specific antibody of any one of claims ~~51-60~~1-7, wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody comprises a variable region sequence having at least 95% identity to the sequence of SEQ ID NO: 12; ~~or~~;

~~62. The multi-specific antibody of claim 61,~~ wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody comprises a variable region sequence comprising the sequence of SEQ ID NO: 12.

~~639.~~ The multi-specific antibody of any one of claims ~~51-621-8,~~ wherein the antigen-binding domain of the anti-BCMA heavy chain-only antibody is in a bivalent configuration, and comprises a linker sequence.

~~6410.~~ The multi-specific antibody of claim ~~639,~~ wherein the linker sequence comprises a G4S linker sequence (SEQ ID NO: 34).

~~6511.~~ The multi-specific antibody of any one of claims ~~51-641-10,~~ wherein the first binding unit further comprises a heavy chain constant region- comprising

~~66. The multi-specific antibody of claim 65, wherein the heavy chain constant region comprises a~~ CH1 domain, a hinge region, a CH2 domain, and a CH3 domain.

~~6712.~~ The multi-specific antibody of claim ~~6611,~~ wherein the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36);

~~68. The multi-specific antibody of claim 66;~~ or wherein the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation.

~~6913.~~ The multi-specific antibody of claim ~~6611,~~ wherein the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38); or

~~70. The multi-specific antibody of claim 66,~~ wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39); or

~~71. The multi-specific antibody of claim 66,~~ wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40).

~~72~~14. The multi-specific antibody of claim ~~66~~11, wherein the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32); or

~~73. The multi-specific antibody of claim 66,~~ wherein the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

~~74~~15. The multi-specific antibody of claim ~~73~~14, further comprising a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation; or

~~75. The multi-specific antibody of claim 74,~~ further comprising a variant human IgG4 CH3 domain comprising a T366W mutation; or

~~76. The multi-specific antibody of claim 74,~~ further comprising a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.

~~77~~16. The multi-specific antibody of any one of claims ~~54~~1-76~~15~~, wherein the first binding unit further comprises a light chain constant region;

~~78. The multi-specific antibody of claim 77, wherein the light chain constant region comprises~~ comprising -a human Vkappa constant region sequence; or

~~79. The multi-specific antibody of claim 77,~~ wherein the first binding unit further comprises a light chain constant region ~~comprises comprising~~ a human Vlambd constant region sequence.

~~80~~17. The multi-specific antibody of any one of claims ~~54~~1-79~~16~~, wherein the second binding unit further comprises a heavy chain constant region sequence, in the absence of a CH1 sequence.

~~81~~18. The multi-specific antibody of claim ~~80~~17, wherein the heavy chain constant region sequence comprises a CH2 domain and a CH3 domain, but no CH1 domain.

~~82~~19. The multi-specific antibody of claim ~~81~~18, wherein the CH2 domain comprises the sequence of a wild type human IgG4 CH2 domain (SEQ ID NO: 36); or

~~83.~~ The multi-specific antibody of claim ~~81~~, wherein the CH2 domain comprises a variant human IgG4 CH2 domain comprising an F234A mutation, an L235A mutation, or both an F234A mutation and an L235A mutation.

~~84~~20. The multi-specific antibody of claim ~~81~~18, wherein the CH3 domain comprises the sequence of a wild type human IgG4 CH3 domain (SEQ ID NO: 38); ~~or~~

~~85.~~ The multi-specific antibody of claim ~~81~~, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366W mutation (SEQ ID NO: 39); ~~or~~

~~86.~~ The multi-specific antibody of claim ~~81~~, wherein the CH3 domain comprises a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation (SEQ ID NO: 40).

~~87~~21. The multi-specific antibody of claim ~~81~~18, wherein the hinge region comprises the sequence of a wild type human IgG4 hinge region (SEQ ID NO: 32); ~~or~~

~~88.~~ The multi-specific antibody of claim ~~81~~, wherein the hinge region comprises a variant human IgG4 hinge region sequence comprising an S228P mutation (SEQ ID NO: 33).

~~89~~22. The multi-specific antibody of claim ~~88~~21, further comprising a variant human IgG4 CH2 domain comprising an F234A mutation and an L235A mutation.

~~90~~23. The multi-specific antibody of claim ~~89~~22, further comprising a variant human IgG4 CH3 domain comprising a T366W mutation; ~~or~~

~~91.~~ The multi-specific antibody of claim ~~89~~, further comprising a variant human IgG4 CH3 domain comprising a T366S mutation, an L368A mutation, and a Y407V mutation.

~~92~~24. The multi-specific antibody of any one of claims ~~51-91~~1-23, which is bispecific.

~~93~~25. A bispecific three-chain antibody-like molecule that binds to **BCMA and La protein**, comprising:

- (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18;

(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24;
and

(c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20;
or

~~94. — A bispecific three-chain antibody-like molecule that binds to BCMA and La protein, comprising:~~

(a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 18;
(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26;
and
(c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20;
or

~~95. — A bispecific three-chain antibody-like molecule that binds to BCMA and La protein, comprising:~~

(a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21;
(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 24;
and
(c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23;
or

~~96. — A bispecific three-chain antibody-like molecule that binds to BCMA and La protein, comprising:~~

(a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 21;
(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 26;
and
(c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23;
or

~~97. — A bispecific three-chain antibody-like molecule that binds to BCMA and La protein, comprising:~~

(a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19;
(b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 25;
and
(c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20;
or

~~98. — A bispecific three chain antibody like molecule that binds to BCMA and La protein, comprising:~~

- (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 19;
- (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27;

and

- (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 20;

or

~~99. — A bispecific three chain antibody like molecule that binds to BCMA and La protein, comprising:~~

- (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22;
- (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 25;

and

- (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23;

or

~~100. — A bispecific three chain antibody like molecule that binds to BCMA and La protein, comprising:~~

- (a) a first heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 22;
- (b) a second heavy chain polypeptide subunit comprising the sequence of SEQ ID NO: 27;

and

- (c) a first light chain polypeptide subunit comprising the sequence of SEQ ID NO: 23.

~~101~~26. A pharmaceutical composition comprising an antibody of any one of claims 1 to ~~100~~25.

~~102. — A method for the treatment of a B-cell disorder characterized by expression of BCMA, comprising administering to a subject with said disorder an antibody of any one of claims 1 to 100, or the pharmaceutical composition of claim 101.~~

~~103~~27. Use of an antibody of any one of claims 1 to ~~100~~25, or the pharmaceutical composition of claim 26, in the preparation-manufacture of a medicament for the treatment of/treating a B-cell disorder characterized by expression of BCMA.

~~104~~28. An antibody of any one of claims 1 to ~~100~~25, or the pharmaceutical composition of claim 26, for use in the treatment of a B-cell disorder characterized by expression of BCMAtherapy.

~~105~~29. The ~~method, use or antibody of any one~~ of claims ~~102-104~~27, wherein the disorder is multiple myeloma (MM); ~~or~~

~~106. The method, use or antibody of any one of claims 102-104,~~ wherein the disorder is an autoimmune disorder.

~~107~~30. The ~~method, use or antibody~~ of claim ~~106~~29, wherein the autoimmune disorder is systemic lupus erythematosus (SLE); ~~or~~

~~108. The method, use or antibody of claim 106, wherein the autoimmune disorder is~~ rheumatoid arthritis (RA); ~~or~~

~~109. The method, use or antibody of claim 106, wherein the autoimmune disorder is~~ multiple sclerosis (MS).

~~110~~31. A polynucleotide encoding an antibody of any of claims 1 to ~~100~~25.

~~111~~32. A vector comprising the polynucleotide of claim ~~110~~31.

~~112~~33. A cell comprising the vector of claim ~~111~~32.

~~113~~34. A method of producing an antibody of any one of claims 1 to ~~100~~25, comprising growing a cell according to claim ~~112~~33 under conditions permissive for expression of the antibody, and isolating the antibody from the cell.

~~114~~35. A method of making an antibody of any one of claims 1 to ~~100~~25, comprising immunizing a UniRat animal with BCMA and identifying BCMA-binding heavy chain sequences.

~~115. A method of treatment, comprising administering to an individual in need an effective dose of the antibody of any one of claims 1 to 100, or the pharmaceutical composition of claim 101.~~