CLAIMS

1. Use of an antibody that specifically binds CD38 in the manufacture of a medicament for the treatment of relapsed and/or refractory multiple myeloma in a human subject, wherein:

    said antibody comprises at least one heavy chain and at least one light chain;

    said heavy chain comprises three sequential complementarity-determining regions (CDRs) comprising the amino acid sequences of SEQ ID NOs: 13, 37, and 15;

    said light chain comprises three sequential complementarity-determining regions (CDRs) comprising the amino acid sequences of SEQ ID NOs: 16, 17, and 18; and

    said antibody is formulated for administration to the human subject in a safe therapeutic dose of 10 mg/kg or 20 mg/kg once every two weeks.

2. The use of claim 1, wherein the antibody is capable of killing a $CD38^+$ cell in the human subject by induction of apoptosis, antibody-dependent cell-mediated cytotoxicity (ADCC), and complement-dependent cytotoxicity (CDC).

3. The use of claim 1 or 2, wherein the human subject has at least one condition selected from the group consisting of

    a) measurable serum M-protein level greater than about 0.5 g/dL,

    b) urine M-protein level greater than about 200 mg (24-hr urine),

    c) elevated level of serum free light chains (FLC) greater than about 10 mg/dL with abnormal FLC ratio,

    and combination thereof.

4. The use of any one of claims 1-3, wherein said antibody comprises at least one heavy chain comprising an amino acid sequence of SEQ ID NO: 50 and at least one light chain comprising an amino acid sequence of SEQ ID NO: 52.

5. The use of any one of claims 1-4, wherein the safe therapeutic dose of said antibody is to be administered intravenously.

6. The use of claims 5, wherein the safe therapeutic dose of said antibody is to be administered at an initial rate of infusion ranging from about 0.042 mg/hr to about 250 mg/hr.

7. The use of any one of claims 1-6, wherein the antibody is to be administered in combination with dexamethasone.

8. The use of any one of claims 1-7, wherein said antibody does not produce autoantibodies against said antibody in a human subject.

9. The use of any one of claims 1-8, wherein said antibody is capable of exhibiting at least about 84.1% CD38 receptor occupancy in a human subject.

10. The use of any one of claims 1-9, wherein said antibody is capable of exhibiting at least about 97.7% CD38 receptor occupancy in a human subject.

11. The use of any one of claims 1-10, wherein said antibody is capable of inhibiting tumor growth in a human subject.

12. The use of any one of claims 1-11, wherein the human subject has received prior anti-cancer therapy.

13. The use of claim 12, wherein:
the human subject has received at least two prior anti-cancer therapies, or
the human subject has received at least three prior anti-cancer therapies, or
the human subject has received 2 to 14 prior anti-cancer therapies.

14. The use of claim 12 or 13, wherein:
the human subject has been treated with bortezomib as prior anti-cancer therapy;
the human subject has been treated with lenalidomide as prior anti-cancer therapy; or
the human subject has been treated with bortezomib and lenalidomide as prior anti-cancer therapy.