CLAIMS

What is claimed is:

1. An immunoconjugate comprising:
a recombinant antibody comprising:
a first heavy chain comprising SEQ ID NO: 9,
a first light chain comprising SEQ ID NO: 10,
a second heavy chain comprising SEQ ID NO: 9, and
a second light chain comprising SEQ ID NO: 10; and
one, two, three or four pairs of adducts;
wherein each adduct of said one, two, three or four pairs of adducts comprises a monomethylauristatin E (MMAE) that is conjugated to said recombinant antibody via a maleimidocaproyl-valine-citrulline-para-amino benzyloxycarbonyl (mc-vc-PAB) linker;
wherein each of said one, two, three, or four pairs of adducts is conjugated to a pair of cysteine residues of said recombinant antibody,
wherein said pairs of cysteine residues are selected from:
C219 of the first heavy chain and C214 of the first light chain;
C219 of the second heavy chain and C214 of the second light chain;
C225 of the first heavy chain and C225 of the second heavy chain; and
C228 of the first heavy chain and C228 of the second heavy chain.

2. The immunoconjugate of claim 1 comprising two pairs of said adducts.

3. A pharmaceutical composition comprising the immunoconjugate of claim 1 at a concentration of about 10.0 ± 1.0 mg/mL, about 20 mM histidine buffer at pH 6.0, about 8.0% sucrose, and about 0.01% polysorbate 80.

4. Use of an immunoconjugate or pharmaceutical composition of any one of claims 1 to 3 in the manufacture of a medicament for the treatment of a cancer in a human subject comprising a cell expressing CD46.

5. The use of claim 4, wherein said cancer is relapsed or refractory multiple myeloma (RRMM).

6. The use of claim 4, wherein said cancer is metastatic castration resistant prostate cancer (mCRPC).

7. The use of any one of claim 4 - 6, wherein said cell comprises CD46 as determined by immunofluorescence microscopy or immunohistochemistry or by flow cytometry.

8. The use of any one of claim 4 - 6, wherein said cell comprises an amplification of chromosome location 1q21.

9. The use of any one of claim 4 - 8, wherein said immunoconjugate is formulated for intravenous infusion.

10. The use of any one of claim 4 - 98, wherein said immunoconjugate is to be administered to said human subject every 7 days, every 14 days, every 18 days, every 21 days, every 28 days, or every month, most preferably every 21 days.

11. The use of any one of claims 4 - 10, wherein said immunoconjugate is to be administered at a dose from about 1.2 to about 3.0 mg/kg, which is optionally about 1.8, about 2.4, about 2.7, or about 3.0 mg/kg.

12. The use of claim 11, wherein the weight, in kg, of said human subject is an actual body weight.

13. The use of claim 11, wherein the weight, in kg, of said human subject is an adjusted body weight.

14. The use of claim 11, wherein the weight, in kg, of said human subject is:

an actual body weight of said human subject if the actual body weight of said human subject is less than an adjusted body weight of said subject;

an adjusted body weight of said human subject if

the actual body weight of said human subject is greater than or equal to an adjusted body weight of said subject, and

the adjusted body weight of said human subject is less than 100 kg; or

100 kg if the adjusted body weight of said human subject is greater than or equal to 100 kg.

15. Use of a pharmaceutical formulation in the manufacture of a medicament for the treatment of metastatic castration resistant prostate cancer in a human subject in need thereof, wherein the pharmaceutical formulation comprises an immunoconjugate at a concentration of about 10.0 ± 1.0 mg/mL, wherein the immunoconjugate comprises:

a recombinant antibody comprising:

a first heavy chain comprising SEQ ID NO: 9,

a first light chain comprising SEQ ID NO: 10,

a second heavy chain comprising SEQ ID NO: 9, and

a second light chain comprising SEQ ID NO: 10; and

one, two, three or four pairs of adducts;

wherein each adduct of said one, two, three or four pairs of adducts comprises a monomethylauristatin E (MMAE) that is conjugated to said recombinant antibody via a maleimidocaproyl-valine-citrulline-para-amino benzyloxycarbonyl (mc-vc-PAB) linker;

wherein each of said one, two, three, or four pairs of adducts is conjugated to a pair of cysteine residues of said recombinant antibody,

wherein said pairs of cysteine residues are selected from:

C219 of the first heavy chain and C214 of the first light chain;

C219 of the second heavy chain and C214 of the second light chain;

C225 of the first heavy chain and C225 of the second heavy chain; and
C228 of the first heavy chain and C228 of the second heavy chain.
about 20 mM histidine buffer at pH 6.0,
about 8.0% sucrose, and
about 0.01% polysorbate 80.

16. The immunoconjugate or pharmaceutical composition of any one of claims 1 to 3 or the pharmaceutical formulation of claim 15 for use in therapy.