

**CLAIMS:**

1. An antibody or a fragment thereof, having a variable region which binds a target molecule, and a constant region, wherein the light chain is a kappa light chain, and wherein the constant region comprises one or more mutations introducing a site specific conjugation site selected so as to permit conjugation of the antibody, or fragment to a payload, wherein the one or more mutations include a mutation to cysteine at light chain position 208 (positional numbering) and a mutation at one or more of heavy chain positions 160, 190, 168, 170, 176 or 200.
2. The antibody of claim 1 wherein the wild type residue at position 208 is S.
3. The antibody of claim 1 or 2, wherein the wild type residue at heavy chain position 160 is S, the wild type residue at heavy chain position 190 is T, the wild type residue at heavy chain position 168 is S, the wild type residue at heavy chain position 170 is V, the wild type residue at heavy chain position 176 is V or the wild type residue at heavy chain position 200 is T.
4. The antibody of any of claims 1-3, wherein the mutated residues are cysteine.
5. The antibody of any preceding claim, wherein the antibody is selected from the group comprising IgG1, IgG2, IgG3, and IgG4.
6. The antibody of any preceding claim wherein the constant region comprises at least a portion of an IgG1 constant region.
7. The antibody of claim 6 wherein the constant region comprises one or more of the Ck, CH1 and CH3 domains of the IgG1 constant region.
8. The antibody of any preceding claim wherein the antibody is selected from the group consisting of Fabs, bi specific antibody fragments (tandem scFv-Fc, scFv-Fc knobs-into-holes, scFv-Fc-scFv, F(ab')<sub>2</sub>, Fab-scFv, (Fab'scFv)<sub>2</sub>, scDiabody-Fc, or scDiabody-CH3), IgG-based bispecific antibodies (Hybrid hybridoma, Knobs-into-holes with common light chain, Two-in-one IgG, Dual V domain IgG, IgG-scFv, scFv-IgG, IgG-V, V-IgG), minibody, tribi-minibody, nanobodies, and di-diabody.
9. The antibody of any preceding claim wherein the antibody is human, humanised, or chimeric.

10. The antibody of any preceding claim comprising one or more mutations introducing a site specific conjugation site selected so as to permit conjugation of the antibody, wherein the antibody is selected from Abciximab; Rituximab; Basiliximab ;Daclizumab; Palivizumab; Infliximab; Trastuzumab; Alemtuzumab; Adalimumab; Efalizumab; Cetuximab; Ibritumomab; 5 Omalizumab; Bevacizumab; Ranibizumab; Golimumab; Canakinumab; Ustekinumab; Tocilizumab; Ofatumumab; Belimumab; Ipilimumab; Brentuximab; Pertuzumab; Raxibacumab; Vedolizumab; Ramucirumab; Obinutuzumab; Siltuximab; Secukinumab; Dinutuximab.

11. The antibody of any preceding claim which lacks one or more Fc effector 10 functions.

12. The antibody of claim 11 which lacks ADCC activity.

13. The antibody of any of claims 1 to 11 which has increased ADCC activity. 15

14. The antibody of any preceding claim further comprising a linker.

15. An immunoconjugate comprising an antibody according to any of claims 1 to 14, a payload, and a linker joining the payload to the antibody. 20

16. The antibody of claim 14, or the immunoconjugate of claim 15, wherein the linker is selected from 6-maleimidocaproyl (MC), maleimidopropanoyl (MP), valine-citrulline (val-cit), alanine-phenylalanine (ala-phe), p-aminobenzyloxycarbonyl (PAB), N-Succinimidyl 4-(2-pyridylthio) pentanoate (SPP), N-succinimidyl 4-(N-maleimidomethyl) cyclohexane-1 25 carboxylate (SMCC), N-Succinimidyl, (4-iodo-acetyl) aminobenzoate (SIAB), SPDB, hydrazone, maleimidocaproyl and 6-maleimidocaproyl-valine-citrulline-p-aminobenzyloxycarbonyl (MC-vc-PAB); or is a branched linker which comprises a peptide chain and is derived from o- hydroxy p-amino benzylic alcohol, wherein the peptide chain is connected to the phenyl ring via the p-amino group, the payload is connected to the phenyl ring via the benzylic alcohol moiety, and the antibody 30 is connected to the phenyl ring via the o-hydroxy group.

17. The immunoconjugate of claim 15 or 16, wherein the payload is selected from the group consisting of a radionuclide, a chemotherapeutic agent, a cytotoxic agent, a microbial toxin, a plant toxin, a polymer, a carbohydrate, a cytokine, a fluorescent label, a luminescent label, an 35 enzyme-substrate label, an enzyme, a peptide, a peptidomimetic, a nucleotide, an siRNA, a microRNA, an RNA mimetic, and an aptamer.

18. The immunoconjugate of claim 17 wherein the payload is selected from the group consisting of  $^{90}\text{Y}$ ,  $^{131}\text{I}$ ,  $^{67}\text{Cu}$ ,  $^{177}\text{Lu}$ ,  $^{213}\text{Bi}$ ,  $^{211}\text{At}$ , dolastatin, vedotin, monomethyl auristatin F(MMAF), monomethyl auristatin E (MMAE); maytansinoids including DM1 and DM4, duocarmycin, duocarmycin analogs, calicheamicin, pyrrolobenzodiazepines (PBD),  
 5 centanamycin, irinotecan, and doxorubicin, alpha-amanitin, melatonin, membrane disrupting peptide, *Pseudomonas* exotoxin A, Diphtheria toxin, ricin, polyethylene glycol, hydroxyethyl starch, and a mannosyl residue.

19. The immunoconjugate of claim 15 or 16, wherein the payload is a microtubule  
 10 disrupting agent, or a DNA modifying agent.

20. A pharmaceutical composition comprising an antibody or an immunoconjugate according to any preceding claim, and a pharmaceutically acceptable diluent, carrier or excipient.

21. A method for generating an immunoconjugate, the method comprising conjugating  
 15 an antibody according to any of claims 1 to 14 to a payload.

22. An isolated or recombinant polynucleotide encoding the antibody of any of claims  
 1-13.

23. A vector comprising the polynucleotide of claim 22.

24. The vector of claim 23 further comprising an inducible promoter operably linked  
 20 to the polynucleotide.

25. A host cell comprising the vector of claim 23 or claim 24.

26. A method of producing an antibody comprising:

- (a) providing a culture medium comprising the host cell of claim 25; and
- (b) placing the culture medium in conditions under which the antibody is expressed,  
 30 and optionally (c) isolating the antibody.