Carcinoembryonic Antigen (CEA), and Melanoma-associated Chondroitin Sulfate Proteoglycan (MCSP).

26. The immunoconjugate of any one of claims 1 to 25, wherein said first antigen binding moiety, or said first and said second antigen binding moiety, is directed to CEA.

27. The immunoconjugate of claim 26, wherein said first antigen moiety, or said first and said second antigen binding moiety, comprises a heavy chain variable region sequence that is at least about 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99% or 100% identical to the sequence of SEQ ID NO: 191, and a light chain variable region sequence that is at least about 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99% or 100% identical to the sequence of SEQ ID NO: 189.

~~26.~~28. The immunoconjugate of any one of claims 1 to ~~25~~27, wherein said effector moiety is a single chain effector moiety.

~~27.~~29. The immunoconjugate of any one of claims 1 to ~~26~~28, wherein the effector moiety is a cytokine.

~~28.~~30. The immunoconjugate of claim ~~27~~29, wherein said cytokine is IL-2.

~~29.~~31. The immunoconjugate of claims ~~27~~-29 or ~~28~~30, wherein said cytokine is a mutant IL-2 polypeptide having reduced binding affinity to the α-subunit of the IL-2 receptor.

~~30.~~32. The immunoconjugate of claim ~~29~~31, wherein said mutant IL-2 polypeptide comprises an amino acid substitution at one or more positions selected from the positions corresponding to residues 42, 45 and 72 of human IL-2.

33. The immunoconjugate of claim 32, wherein said mutant IL-2 polypeptide comprises the amino acid substitutions F42A, Y45A and L72G.

34. The immunoconjugate of any one of claims 1 to 33, comprising the polypeptide sequences of SEQ ID NO: 277, SEQ ID NO: 281 and SEQ ID NO: 283, or variants thereof that retain functionality.

~~31.~~35. The immunoconjugate of claim ~~27~~29, wherein said cytokine is IL-10.

~~32.~~36. An isolated polynucleotide encoding the immunoconjugate of any one of claims 1 to ~~31~~35 or a fragment thereof.

~~33.~~37. An expression vector comprising the isolated polynucleotide of claim ~~32~~36.

34.38. A host cell comprising the isolated polynucleotide of claim 32–36 or the expression vector of claim 3337.

35.39. The host cell of claim 3438, wherein said host cell has been manipulated to express increased levels of one or more polypeptides having β(1,4)-N-acetylglucosaminyltransferase III (GnTIII) activity.

36.40. A method of producing the immunoconjugate of any one of claims 1 to 31, comprising culturing the host cell of claim 34–38 or 35–39 under conditions suitable for the expression of the immunoconjugate and optionally recovering the immunoconjugate.

37.41. An immunoconjugate comprising an antigen binding moiety, an Fc domain and a single effector moiety, wherein said immunoconjugate is produced by the method of claim 3640.

38.42. A pharmaceutical composition comprising the immunoconjugate of any one of claims 1 to 31–35 or claim 37–41 and a pharmaceutically acceptable carrier.

39.43. The immunoconjugate of any one of claims 1 to 33–35 or claim 3741, or the pharmaceutical composition of claim 3842, for use in the treatment of a disease in an individual in need thereof.

40.44. The immunoconjugate of any one of claims 1 to 33–35 or claim 3741, or the pharmaceutical composition of claim 3842, for the manufacture of a medicament for the treatment of a disease in an individual in need thereof.

41. A method of treating a disease in an individual, comprising administering to said individual a therapeutically effective amount of a composition comprising the immunoconjugate of any one of claims 1 to 31 or claim 37 in a pharmaceutically acceptable form.

42.45. The immunoconjugate or the pharmaceutical composition of claims 39-43 or 4044, or the method of claim 41, wherein said disease is cancer.

43.46. The immunoconjugate or the pharmaceutical composition of claims 39-43 or 4044, or the method of claim 41, wherein said disease is an inflammatory disorder.

44.47. The immunoconjugate, or pharmaceutical composition or method of claim 4346, wherein the effector moiety of the immunoconjugate is IL-10.

45. A conjugate comprising a first Fab molecule which does not specifically bind to any antigen, an Fc domain consisting of two subunits, and an effector moiety, wherein not more than one effector moiety is present.

46. The conjugate of claim 45, wherein said first Fab molecule comprises the heavy chain variable region sequence of SEQ ID NO: 299 and the light chain variable region sequence of SEQ ID NO: 297.

47. The conjugate of claim 45 or 46, wherein said effector moiety is fused to the amino- or carboxy-terminal amino acid of one of said two subunits of the Fc domain, optionally through a linker peptide.

48. The conjugate of claim 45 or 46, wherein said first Fab molecule is fused to the amino-terminal amino acid of one of said two subunits of the Fc domain, optionally through a linker peptide or an immunoglobulin hinge region.

49. The conjugate of any one of claims 45 to 48, wherein said Fc domain comprises a modification promoting heterodimerization of two non-identical polypeptide chains.

50. The conjugate of claim 49, wherein said modification is a knob-into-hole modification, comprising a knob modification in one of the subunits of the Fc domain and a hole modification in the other one of the two subunits of the Fc domain.

51. The conjugate of claim 50, wherein said effector moiety is fused to the amino- or carboxy-terminal amino acid of the subunit of the Fc domain comprising the knob modification.

52. The conjugate of any one of claims 45 to 51, wherein said Fc domain is an IgG Fc domain.

53. The conjugate of any one of claims 45 to 52, wherein said Fc domain is engineered to have altered binding to an Fc receptor and/or altered effector function.

54. The conjugate of claim 53, wherein said Fc receptor is an Fcγ receptor.

55. The conjugate of claim 53, wherein said effector function is ADCC.

56. The conjugate of claim 53, wherein said altered binding and/or effector function is reduced binding and/or effector function.

57. The conjugate of claim 56, wherein said Fc domain comprises one or more amino acid mutation that reduces the binding of the Fc domain to an Fc receptor, particularly an Fcγ receptor.

58. The conjugate of claim 57, wherein said amino acid mutation is an amino acid substitution at position P329.

59. The conjugate of claims 57 or 58, wherein the Fc domain comprises the amino acid substitutions L234A, L235A and P329G in each of its subunits.

60. The conjugate of claim 53, wherein said altered binding and/or effector function is increased binding and/or effector function.

61. The conjugate of claim 60, wherein said Fc domain is engineered to have an altered oligosaccharide structure, as compared to a non-engineered Fc domain.

62. The conjugate of claim 61, wherein said Fc domain comprises an increased proportion of non-fucosylated oligosaccharides, as compared to a non-engineered Fc domain.

63. The conjugate of any of claims 45 to 62, wherein the conjugate comprises a first and a second Fab molecule.

64. The conjugate of claim 63, wherein said first and said second Fab molecule each comprise the heavy chain variable region sequence of SEQ ID NO: 299 and the light chain variable region sequence of SEQ ID NO: 297.

65. The conjugate of claim 64, wherein said first and said second Fab molecule and said Fc domain are part of an immunoglobulin molecule.

66. The conjugate of claim 65, wherein said immunoglobulin molecule is an IgG class immunoglobulin.

67. The conjugate of claims 65 or 66, wherein said effector moiety is fused to the carboxy-terminal amino acid of one of the immunoglobulin heavy chains, optionally through a linker peptide.

68. The conjugate of any one of claims 45 to 67, wherein said effector moiety is a single chain effector moiety.

69. The conjugate of any one of claims 45 to 68, wherein the effector moiety is a cytokine.

70. The conjugate of claim 69, wherein said cytokine is IL-2.

71. The conjugate of claims 69 or 70, wherein said cytokine is a mutant IL-2 polypeptide having reduced binding affinity to the α-subunit of the IL-2 receptor.

72. The conjugate of claim 71, wherein said mutant IL-2 polypeptide comprises an amino acid substitution at one or more positions selected from the positions corresponding to residues 42, 45 and 72 of human IL-2.

73. An isolated polynucleotide encoding the conjugate of any one of claims 45 to 72 or a fragment thereof.

74. An expression vector comprising the isolated polynucleotide of claim 73.

75. A host cell comprising the isolated polynucleotide of claim 73 or the expression vector of claim 74.

76. A method of producing the conjugate of any one of claims 45 to 72, comprising culturing the host cell of claim 75 under conditions suitable for the expression of the conjugate and optionally recovering the conjugate.

77. A conjugate comprising a Fab fragment which does not specifically bind to any antigen, an Fc domain and a single effector moiety, wherein said conjugate is produced by the method of claim 76.

78. A pharmaceutical composition comprising the conjugate of any one of claims 45 to 72 or claim 77 and a pharmaceutically acceptable carrier.

79. The conjugate of any one of claims 45 to 72 or claim 77, or the pharmaceutical composition of claim 78, for use in the treatment of a disease in an individual in need thereof.

80. The conjugate of any one of claims 45 to 72 or claim 77, or the pharmaceutical composition of claim 78, for the manufacture of a medicament for the treatment of a disease in an individual in need thereof.

81. A method of treating a disease in an individual, comprising administering to said individual a therapeutically effective amount of a composition comprising the conjugate of any one of claims 45 to 72 or claim 77 in a pharmaceutically acceptable form.