

WHAT IS CLAIMED IS:

1. A conjugate, comprising:
an antibody that binds to a cell surface molecule of a target cell; and a prokaryotic sialidase, a eukaryotic sialidase, or a derivative thereof.
2. The conjugate of Claim 1, wherein the antibody is an IgG, a single chain Fv (scFv), Fab, (Fab)₂, or (scFv')₂.
3. The conjugate of Claim 1 or Claim 2, wherein the sialidase is conjugated to a heavy chain of the antibody.
4. The conjugate of Claim 3, wherein the sialidase is conjugated to an Fc region of the antibody.
5. The conjugate of Claim 3, wherein the sialidase is conjugated to the C-terminus of the heavy chain.
6. The conjugate of any one of Claims 1 to 5, wherein the sialidase is conjugated to the targeting moiety via a linker.
7. The conjugate of Claim 6, wherein the linker is a peptide.
8. The conjugate of Claim 7, wherein the conjugate is a fusion protein.
9. The conjugate of any one of Claims 1 to 8, wherein the target cell is a cancer cell.
10. The conjugate of Claim 9, wherein the cell surface molecule is a tumor-associated cell surface molecule or a tumor-specific cell surface molecule.

11. The conjugate of Claim 9 or Claim 10, wherein the cancer cell is selected from the group consisting of: a carcinoma cell, a breast cancer cell, an ovarian cancer cell, a gastric cancer cell, and a colon cancer cell.
12. The conjugate of Claim 10, wherein the tumor-associated cell surface molecule or the tumor-specific cell surface molecule is human epidermal growth factor receptor 2 (HER2).
13. The conjugate of any one of Claims 1 to 12, wherein the sialidase is selected from the group consisting of: a *Salmonella typhimurium* sialidase, a *Vibrio cholerae* sialidase, a mammalian neuraminidase, and a human neuraminidase.
14. The conjugate of any one of Claims 1 to 12, wherein the sialidase is a human neuraminidase selected from the group consisting of: human neuraminidase 1, human neuraminidase 2, human neuraminidase 3, and human neuraminidase 4.
15. A composition, comprising:
 - the conjugate of any one of Claims 1 to 14; and
 - a pharmaceutically acceptable carrier.
16. A kit comprising the conjugate of any one of Claims 1 to 14 and instructions for administering the conjugate to an individual in need thereof.
17. A nucleic acid encoding the fusion protein of Claim 8.
18. An expression vector comprising a promoter operably linked to the nucleic acid of Claim 17.
19. A host cell comprising the nucleic acid of Claim 17 or the expression vector of Claim 18.