CLAIMS

1. A composition comprising a recombinant polynucleic acid comprising a sequence encoding a chimeric fusion protein (CFP) comprising:

(a) an extracellular domain comprising an anti-tumor-associated calcium signal transducer-2 (anti-TROP2) binding domain, and

(b) a transmembrane domain operatively linked to the extracellular domain; wherein the transmembrane domain is a transmembrane domain from a protein that dimerizes with endogenous FcR-gamma receptors expressed in myeloid cells, monocytes, or macrophages; wherein the CFP is expressed on the surface of myeloid cells, monocytes, or macrophages that express endogenous FcR-gamma receptors.

2. The composition of claim 1, wherein the anti-TROP2 binding domain comprises a Fab fragment or an scFv domain comprising a heavy chain variable domain and a light chain variable domain; and wherein the anti-TROP2 binding domain comprises:

(a) a heavy chain complementarity determining region 1 (HC CDR1), a HC CDR2 and a HC CDR3 of SEQ ID NO: 34 and a light chain complementarity determining region 1 (LC CDR1), a LC CDR2 and a LC CDR3 of SEQ ID NO: 34; or

(b) a HC CDR1, a HC CDR2 and a HC CDR3 of SEQ ID NO: 35 and a LC CDR1, a LC CDR2 and a LC CDR3 of SEQ ID NO: 35.

3. The composition of claim 1 or 2, wherein the transmembrane domain is a transmembrane domain from CD16a, CD64, CD68 or CD89, or a fragment thereof.

4. The composition of any one of claims 1-3, wherein the extracellular domain further comprises an extracellular domain from CD16a, CD64, CD68 or CD89, or a fragment thereof.

5. The composition of any one of claims 1-4, wherein the CFP further comprises an intracellular domain comprising one or more intracellular signaling domains, wherein the one or more intracellular signaling domains comprise an intracellular signaling domain from CD16a, CD64, CD68, CD89, FCERIG, CD40 or CD3 zeta.

6. The composition of any one of claims 1-5, wherein the intracellular signaling domain comprises at least one immunoreceptor tyrosine-based activation motif (ITAM) domain, and wherein the at least one ITAM domain is from an intracellular domain of a protein or polypeptide selected from a group consisting of CD3 zeta TCR subunit, CD3 epsilon TCR subunit, CD3 gamma TCR subunit, CD3 delta TCR subunit, TCR zeta chain, Fc epsilon receptor 1 chain, Fc epsilon receptor 2 chain, Fc gamma receptor 1 chain, Fc gamma

receptor 2a chain, Fc gamma receptor 2b 1 chain, Fc gamma receptor 2b2 chain, Fc gamma receptor 3a chain, Fc gamma receptor 3b chain, Fc beta receptor 1 chain, TYROBP (DAP12), CD5, CD16a, CD16b, CD22, CD23, CD32, CD64, CD79a, CD79b, CD89, CD278, and CD66d, or functional fragment thereof.

7. The composition of any one of claims 1-6, wherein the transmembrane domain comprises a sequence SFCLVMVLLFAVDTGLYFSV (SEQ ID NO: 79).
8. The composition of any one of claims 1-7, wherein the CFP further comprises an extracellular hinge domain comprising a sequence GLAVSTISSFFPPGYQV (SEQ ID NO: 78); and an intracellular cytoplasmic domain comprising a sequence KTNIRSSTRDWKDHKFKWRKDPQDK (SEQ ID NO: 80).
9. The composition of any one of claims 1-6, wherein the transmembrane domain comprises a sequence LIRMAVAGLVLVALLAILV (SEQ ID NO: 83).
10. The composition of any one of claims 1-6 and 9, wherein the CFP further comprises an extracellular hinge domain comprising a sequence IHQDYTTQN (SEQ ID NO: 82); and an intracellular cytoplasmic domain comprising a sequence ENWHSHTALNKEASADVAEPSWSQQMCQPGLTFARTPSVCK (SEQ ID NO: 84).
11. The composition of any one of claims 1-10, wherein the CFP further comprises a signal peptide sequence comprising a sequence MWLQSLLLLGTVACSIS (SEQ ID NO: 7).
12. The composition of any one of claims 1-11, wherein the scFv comprises a sequence selected from the group consisting of SEQ ID NO: 34 and 35.
13. The composition of any one of claims 1-12, wherein the recombinant polynucleic acid is an mRNA.
14. The composition of any one of claims 1-13, wherein the recombinant polynucleic acid does not substantially express in a T cell.
15. The composition of any one of claims 1-14, further comprising a nanoparticle delivery vehicle, wherein the nanoparticle delivery vehicle encapsulates the recombinant polynucleic acid.
16. The composition of claim 15, wherein the nanoparticle delivery vehicle comprises a lipid nanoparticle.
17. The composition of claim 16, wherein the lipid nanoparticle delivery vehicle comprises at least one cationic lipid, at least one non-cationic lipid, at least one neutral lipid, or at least one PEGylated lipid.
18. The composition of any one of claims 15-17, wherein the nanoparticle delivery vehicle comprises one or more polymers.

19. A cell comprising the composition of any one of claims 1-18, wherein the cell is a CD14+ cell.
20. A pharmaceutical composition comprising (i) a lipid nanoparticle, encapsulating the recombinant nucleic acid of any one of claims 1-14.
21. Use of the composition of any one of the claims 1-18, the cell of claim 19, or the pharmaceutical composition of claim 20, in the manufacture of a medicament for treating a cancer in a subject, wherein the cancer is selected from a group consisting of gastric cancer, ovarian cancer, renal cancer, breast cancer, prostate cancer, liver cancer, brain cancer, lymphoma, leukemia, skin cancer, pancreatic cancer, colorectal cancer, glioblastoma and lung cancer.
22. A composition of any one of the claims 1-18, a cell of claim 19, or a pharmaceutical composition of claim 20 for use in therapy.