CLAIMS

1. A fusion protein characterized in
   that the fusion protein is capable of binding both CD137 and glypican-3 (GPC3), and
   that the fusion protein comprises at least two subunits in any order, wherein the first subunit comprises a lipocalin mutein specific for CD137 that has at least 85% sequence identity to a sequence selected from the group consisting of SEQ ID NOs: 18-33 and the second subunit comprises a full-length immunoglobulin, an antigen-binding domain thereof, or a lipocalin mutein specific for GPC3.
2. The fusion protein of claim 1, wherein the second subunit comprises a lipocalin mutein having binding specificity for GPC3.
3. The fusion protein of claim 2, wherein the fusion protein further comprises a third subunit which is
   (i) an immunoglobulin-Fc fragment,
   (ii) specific for CD137, or
   (iii) a lipocalin mutein having binding specificity for CD137.
4. The fusion protein of claim 2 or 3, wherein
   the lipocalin mutein having binding specificity for GPC3 comprises an amino acid sequence having at least 85% sequence identity to a sequence selected from the group consisting of SEQ ID NOs: 4-17, or having at least 90% sequence identity to a sequence selected from the group consisting of SEQ ID NOs: 4-17, or having at least 95% sequence identity to a sequence selected from the group consisting of SEQ ID NOs: 4-17, or being selected from the group consisting of SEQ ID NOs: 4-17.
5. The fusion protein of any one of claims 1-4, wherein
   the lipocalin mutein having binding specificity for CD137 comprises the following set of mutated amino acid residues in comparison with a linear polypeptide sequence of mature hNGAL (SEQ ID NO: 2):
   Gln 28 → His; Leu 36 → Gln; Ala 40 → Ile; Ile 41 → Arg; Gln 49 → Ile; Tyr 52 → Met; Asn 65 → Asp; Ser 68 → Met; Leu 70 → Lys; Arg 72 → Asp; Lys 73 → Asp; Asp 77 → Met; Trp 79 → Asp; Arg 81 → Trp; Cys 87 → Ser; Asn 96 → Lys; Tyr 100 → Phe; Leu 103 → His; Tyr 106 → Ser; Lys 125 → Phe; Ser 127 → Phe; Tyr 132 → Glu; and Lys 134 → Tyr.
6. The fusion protein of any one of claims 1-5, wherein
   (i) the lipocalin mutein having binding specificity for CD137 has at least 90% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NOs: 18-33;

(ii) the lipocalin mutein having binding specificity for CD137 has at least 95% sequence identity to an amino acid sequence selected from the group consisting of SEQ ID NOs: 18-33; or

(iii) the lipocalin mutein having binding specificity for CD137 comprises an amino acid sequence selected from the group consisting of SEQ ID NOs: 18-33.

7. The fusion protein of any one of claims 1-6, wherein the fusion protein comprises the amino acid sequence shown in SEQ ID NO: 48 or the amino acid sequence shown in SEQ ID NO: 49.
8. The fusion protein of any one of claims 1-7, wherein the immunoglobulin is a monoclonal antibody.
9. The fusion protein of claim 8, wherein

(a) the monoclonal antibody has an IgG4 backbone,
wherein optionally the IgG4 backbone has any one of the following mutations selected from the group consisting of S228P, N297A, F234A and L235A; or

(b) the monoclonal antibody has an IgG2 backbone,
wherein optionally the IgG2 backbone has any one of the following mutations selected from the group consisting of N297A, F234A and L235A.

10. The fusion protein of any one of claims 1-9, wherein the fusion protein comprises the amino acid sequence shown in SEQ ID NO: 44, the amino acid sequence shown in SEQ ID NO: 45, the amino acid sequence shown in SEQ ID NO: 46, or the amino acid sequence shown in SEQ ID NO: 47.
11. A nucleic acid molecule comprising a nucleotide sequence encoding the fusion protein of any one of claims 1-10.
12. A host cell containing the nucleic acid molecule of claim 11.
13. An *in vitro* method of producing the fusion protein of any one of claims 1-10, wherein the fusion protein is produced starting from the nucleic acid coding for the fusion protein by means of genetic engineering methods,
wherein optionally the fusion protein is produced in a bacterial or eukaryotic host organism and is isolated from this host organism or its culture.
14. A fusion protein of any one of claims 1-10 for use in treating cancer.
15. The fusion protein for the use of claim 14, comprising

(i) simultaneously activating downstream signaling pathways of CD137 and engaging GPC3-positive tumor cells, comprising applying the fusion protein or a composition comprising such fusion protein;

(ii) simultaneously costimulating T cells and engaging GPC3-positive tumor cells, comprising applying the fusion protein or a composition comprising such fusion protein;

(iii) simultaneously inducing T lymphocyte proliferation and engaging GPC3-positive tumor cells, comprising applying the fusion protein or a composition comprising such fusion protein; or

(iv) directing CD137 clustering and activation of T cells to GPC3-positive tumor cells, comprising applying the fusion protein or a composition comprising such fusion protein.

16. A pharmaceutical composition comprising the fusion protein of any one of claims 1-10.