WHAT IS CLAIMED IS:

1. A heterodimer comprising a dimerizing moiety attached to at least one amino acid sequence of at least one type I membrane protein capable of at least binding a natural ligand or receptor of said at least one type I membrane protein and to at least one amino acid sequence of at least one type II membrane protein capable of at least binding a natural ligand or receptor of said at least one type II membrane protein.

2. The heterodimer of claim 1, wherein said dimerizing moiety is a proteinaceous moiety.

3. The heterodimer of any one of claims 1-2, wherein said dimerizing moiety is an Fc domain of an antibody ~~or a fragment thereof~~.

4. The heterodimer of any one of claims 1-3, wherein said at least one type I membrane protein is selected from the group consisting of PD1, SIRPα, LAG3, BTN3A1, CD27, CD80, CD86, ENG, NLGN4X, CD84, TIGIT, CD40, IL-8, IL-10, CD164, LY6G6F, CD28, CTLA4, BTLA, LILRB1, LILRB2, TYROBP, ICOS, VEGFA, CSF1, CSF1R, VEGFB, BMP2, BMP3, GDNF, PDGFC, PDGFD, RAET1E, CD155, CD166, MICA, NRG1, HVEM, DR3, TEK, TGFB1, LY96, CD96, KIT, CD244, GFER and SIGLEC.

5. The heterodimer of any one of claims 1-3, wherein said at least one type I membrane protein is selected from the group consisting of PD1, SIRPα, TIGIT, LILRB2 and SIGLEC.

6. The heterodimer of any one of claims 1-3, wherein said at least one type I membrane protein is selected from the group consisting of PD1 and SIRPα.

7. The heterodimer of any one of claims 1-6, wherein said at least one type II membrane protein is selected from the group consisting of 4-1BBL, FasL, TRAIL, TNF-alpha, TNF-beta, OX40L, CD40L, CD27L, CD30L, RANKL, TWEAK, APRIL, BAFF, LIGHT, VEGI, GITRL, EDAl/2, Lymphotoxin alpha and Lymphotoxin beta.

8. The heterodimer of any one of claims 1-6, wherein said at least one type II membrane protein is selected from the group consisting of 4-1BBL, OX40L, CD40L, LIGHT and GITRL.

9. The heterodimer of any one of claims 1-6, wherein said at least one type II membrane protein is selected from the group consisting of 4-1BBL and CD40L.

10. The heterodimer of any one of claims 1-9, wherein at least one of said type I membrane protein and said type II membrane protein is an immune modulator.

11. A nucleic acid construct or system comprising at least one polynucleotide encoding the heterodimer of any one of claims 2-10, and a regulatory element for directing expression of said polynucleotide in a host cell.

12. A host cell comprising the heterodimer of any one of claims 2-10 or the nucleic acid construct or system of claim 11.

13. A method of producing a heterodimer, the method comprising expressing in a host cell a nucleic acid construct or system encoding the heterodimer of anyone of claims 1-10.

14. The heterodimer of ~~any one of claims 1~~ claim 10, a nucleic acid construct or system encoding same or a cell comprising same for use in treating ~~a disease that can benefit from treatment with said heterodimer~~cancer, wherein cells of said cancer express a ligand or a receptor of said type I membrane protein and/or said type II membrane protein.

15. A method of modulating activity of immune cells, the method comprising in-vitro activating immune cells in the presence of the heterodimer of claim 10, a nucleic acid construct or system encoding same or a host cell comprising same.