CLAIMS

We claim:

1. A composition comprising a plasma membrane vesicle purified from NK cell feeder cells transfected with at least one membrane-bound NK cell effector agent, wherein the at least one effector agent is IL-21.

2. The composition of claim 1, further comprising at least one additional NK cell effector agent, wherein the at least one additional NK cell effector agent is selected from a cytokine, an adhesion molecule, and an NK cell activating agent.

3. The composition of claim 4, wherein the at least one additional cell effector agent is selected from IL-15, IL-2, 41BBL, IL-12, IL-18, MICA, 2B4, LFA-1, and BCM1/SLAMF2, and a ligand of NKp30, NKp44 and NKp46, NKG2D and DNAM-1.

4. The composition of claim 3, wherein the at least one additional NK cell effector agent is IL-15 or 41BBL.

5. The composition of any of claims 2-4, comprising at least two additional cell NK effector agents.

6. The composition of claim 5, wherein the at least two additional two cell effector agents are IL-15 and 41BBL.

7. The composition of any of claims 2-6, wherein each NK cell effector agent is conjugated to a separate membrane self-inserting peptide.

8. The composition of claim 7, wherein the membrane self-inserting peptide is selected from human Fc, GPI, transmembrane T cell receptor, and pHLIP.

9. The composition of claim 1, comprising a plurality of the plasma membrane vesicles.

10. The composition of claim 1 or claim 9, wherein the plasma membrane vesicle or vesicles are purified from NK cell feeder cells transfected with at least one membrane-bound NK cell effector agent in addition to membrane-bound IL-21.

11. The composition of 10, wherein the at least one additional NK cell effector agent is selected from a cytokine, an adhesion molecule, and an NK cell activating agent.

12. The composition of claim 10, wherein the at least one additional cell effector agent is selected from IL-15, IL-2, 41BBL, IL-12, IL-18, MICA, 2B4, LFA-1, and BCM1/SLAMF2.

13. The composition of claim 1 or claim 10, wherein the plasma membrane vesicle or vesicles are purified from cells selected from K562 cells, peripheral blood mononuclear cells (PBMCs), RPMI8866, HFWT, K562, K562 cells transfected with membrane bound IL-15 and 41BBL, and EBV-LCL.

14. A method of expanding an initial population of NK cells, the method comprising contacting the initial NK cell population *in vitro* with an effective amount of a composition comprising a plasma membrane vesicle purified from NK cell feeder cells transfected with at least one membrane bound NK cell effector agent, wherein at least one NK cell effector agent is IL-21.

15. The method of claim 14, wherein the membrane-bound NK cell effector agent in the plasma membrane vesicle is conjugated to a membrane self-inserting peptide.

16. The method of claim 14, wherein the plasma membrane vesicle comprises at least one membrane bound NK cell effector agent in addition to IL-21.

17. The method of claim 16, wherein IL-21 and the at least one additional NK cell effector agent are each conjugated to the same membrane self-inserting peptide selected from human Fc, GPI, transmembrane T cell receptor, and pHLIP.

18. The method of claim 16, wherein IL-21 and the at least one additional NK cell effector agent are each conjugated to a different membrane self-inserting peptide selected from human Fc, GPI, transmembrane T cell receptor, and pHLIP.

19. The method of claim 14, wherein the NK cell feeder cells are selected from K562 cells, irradiated autologous or allogeneic peripheral blood mononuclear cells (PBMCs), RPMI8866, HFWT, K562 cells transfected with membrane bound IL-15 and 41BBL, or EBV-LCL.

20. The method of claim 14, wherein the composition comprises a plurality of the plasma membrane vesicles.

21. A population of NK cells in contact *in vitro* with the composition of any of claims 1-13.

22. A device or a kit comprising the composition of any of claims 1-13.

23. The population of NK cells of claim 21, wherein the cells have a modified NK cell function selected from cytotoxicity, secretion of cytokines, and *in vivo* longevity.

24. A composition comprising a plasma membrane vesicle purified from NK cell feeder cells transfected with at least one membrane-bound NK cell effector agent conjugated to a membrane self-inserting peptide, wherein the at least one effector agent is IL-21.