CLAIMS

1. An engineered feeder cell capable of generating a natural killer (NK) cell resistant to TGF-β, the engineered feeder cell comprising: a feeder cell modified to express soluble or membrane bound TGF-β which is expressed by an inducible or constitutive promoter; and at least one additional NK cell effector agent on the feeder cell's surface, wherein the at least one additional NK cell effector agent is a cytokine, an adhesion molecule, or an NK cell activating agent.

2. The engineered feeder cell of claim 1, wherein the feeder cell comprises a leukemia K562 cell.

3. The engineered feeder cell of claim 1, wherein the feeder cell comprises a NK cell.

4. The engineered feeder cell of claim 1, wherein the at least one additional NK cell effector agent is selected from 4-1BBL, IL-2, IL-12, IL-15, IL-18, IL-21, MICA, LFA-1, 2B4, CCR7, OX40L, UBLP2, BCM1/SLAMF2, NKG2D agonists, CD155, CD112, Jagged1, Jagged2, Delta-1, Pref-1, DNER, Jedi, SOM-11, wingless, CCN3, MAGP2, MAGP1, TSP2, YB-1, EGFL7, CCR7, DAP12, and DAP10, Notch ligands, NKp46 agonists, NKp44 agonists, NKp30 agonists, other NCR agonists, and CD16 agonists.

5. The engineered feeder cell of claim 1, wherein the at least one additional NK cell effector agent comprises IL-21, 4-1BBL, IL-15, IL-21 and 4-1BBL, IL-21 and IL-15, or IL-15 and 4-1BBL.

6. The engineered feeder cell of any of claims 1-5, wherein the feeder cells comprise PBMCs, RPMI8866, HFWT, K562 cells, EBV-LCL, NK cells transfected with membrane bound IL-21, NK cells transfected with membrane bound 4-1BBL, NK cells transfected with membrane bound IL-15 and 4-1BBL, or NK cells transfected with membrane bound IL-21 and 4-1BBL.

7. A plasma membrane particle or exosome derived from the engineered feeder cell of any of claims 1-6.

8. A method of generating TGF-β resistant NK cells, comprising incubating NK cells in the presence of the engineered feeder cells of any of claims 1-8 or the exosome or plasma membrane particle of claim 9.

9. A method of generating TGF-β resistant NK cells, comprising incubating NK cells in the presence of feeder cells that have been engineered to express soluble or membrane bound TGF-β or incubating NK cells in the presence of plasma membrane particles or exosomes derived from said feeder cells.

10. The method of generating TGF-β resistant NK cells of claim 9, wherein the feeder cells comprise PBMCs, RPMI8866, HFWT, K562 cells, EBV-LCL, NK cells transfected with membrane bound IL-21, NK cells transfected with membrane bound 4-1BBL, NK cells transfected with membrane bound IL-15 and 4-1BBL, or NK cells transfected with membrane bound IL-21 and 4-1BBL.

11. The method of generating TGF-β resistant NK cells of claim 9 or 10, wherein the feeder cells further comprises at least one additional NK cell effector agent on its cell surface, wherein the at least one additional NK cell effector agent is a cytokine, an adhesion molecule, or an NK cell activating agent.

12. The method of generating TGF-β resistant NK cells of claim 11, wherein the at least one additional NK cell effector agent is selected from 4-1BBL, IL-2, IL-12, IL-15, IL-18, IL-21, MICA, LFA-1, 2B4, CCR7, OX40L, UBLP2, BCM1/SLAMF2, NKG2D agonists, CD155, CD112, Jagged1, Jagged2, Delta-1, Pref-1, DNER, Jedi, SOM-11, wingless, CCN3, MAGP2, MAGP1, TSP2, YB-1, EGFL7, CCR7, DAP12, and DAP10, Notch ligands, NKp46 agonists, NKp44 agonists, NKp30 agonists, other NCR agonists, and CD16 agonists.

13. The method of generating TGF-β resistant NK cells of claim 12, wherein the at least one additional NK cell effector agent comprises IL-21, 4-1BBL, IL-15, IL-21 and 4-1BBL, IL-21 and IL-15, or IL-15 and 4-1BBL.

14. The method of generating TGF-β resistant NK cells of any of claims 9-13, wherein the NK cells comprise memory-like NK cells such as $NKG2C^{+}$, $CD56^{bright}$ NK cells, $CD56^{dim}$ NK cells, peripheral NK cells, and NK T cells, tumor infiltrating NK cells.

15. The method of generating TGF-β resistant NK cells of any of claims 9-14, wherein the NK cells are obtained from a donor subject.

16. The method of generating TGF-β resistant NK cells of any of claims 9-14, wherein the NK cells are obtained from autologous donor, allogeneic donor, or syngeneic donor.

17. The method of generating TGF-β resistant NK cells of any of claims 9-16, wherein the NK cells are incubated in the presence of the engineered feeder cells, plasma membrane particles, or exosomes for at least 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 45, or 60 days.

18. A TGF-β resistant NK cell made by the method of any of claims 8-17.

19. Use of a TGF-β resistant NK cell of claim 18 in the manufacture of a medicament for the treatment of a cancer in a subject.

20. Use of a TGF-β resistant NK cell in the manufacture of a medicament for the treatment of a cancer in a subject, wherein the TGF-β resistant NK cell is obtained by a method comprising obtaining an NK cell; culturing the cell in the presence of feeder cells modified to express soluble or membrane-bound TGF-β which is expressed by an inducible or constitutive promote thereby creating a TGF-β resistant NK cell or in the presence of plasma membrane particles or exosomes derived from said feeder cells.

21. The use of claim 20, wherein the NK cells are memory-like NK cells such as $NKG2C^{+}$, $CD56^{bright}$ NK cells, $CD56^{dim}$ NK cells, peripheral NK cells, and NK T cells, tumor infiltrating NK cells.

22. The use of claim 20 or 21, wherein the NK cells are obtained from a donor subject.

23. The use of any of claims 20-22, wherein the NK cells are obtained from autologous donor, allogeneic donor, or syngeneic donor.

24. The use of any of claims 20-23, wherein the feeder cells comprise PBMCs, RPMI8866, HFWT, K562 cells, EBV-LCL, NK cells transfected with membrane bound IL-21, NK cells transfected with membrane bound 4-1BBL, NK cells transfected with membrane bound IL-15 and 4-1BBL, or NK cells transfected with membrane bound IL-21 and 4-1BBL.

25. The use of any of claims 20-24, wherein the feeder cells further comprise at least one additional NK cell effector agent on its cell surface, wherein the at least one additional NK cell effector agent is a cytokine, an adhesion molecule, or an NK cell activating agent.

26. The use of claim 25, wherein the at least one additional NK cell effector agent is selected from 4-1BBL, IL-2, IL-12, IL-15, IL-18, IL-21, MICA, LFA-1, 2B4, CCR7, OX40L, UBLP2, BCM1/SLAMF2, NKG2D agonists, CD155, CD112, Jagged1, Jagged2,

Delta-1, Pref-1, DNER, Jedi, SOM-11, wingless, CCN3, MAGP2, MAGP1, TSP2, YB-1, EGFL7, CCR7, DAP12, and DAP10, Notch ligands, NKp46 agonists, NKp44 agonists, NKp30 agonists, other NCR agonists, and CD16 agonists.

27. The use of claim 26, wherein the cancer is a solid tumor and wherein the at least one additional NK cell effector agent comprises IL-21, 4-1BBL, IL-15, IL-21 and 4-1BBL, IL-21 and IL-15, or IL-15 and 4-1BBL.

28. The use of any of claims 20-27, wherein the NK cells are incubated in the presence of the engineered feeder cells, plasma membrane particles, or exosomes for at least 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 45, or 60 days.