CLAIMS

What is claimed is:

1. Use of activated expanded memory (XM) NK cells and an anti-PDL1 antibody in the manufacture of a medicament for improving an anti-PDL1 antibody therapy for treating a cancer or an infection in a subject, wherein the activated XM NK cells comprise cells obtained by activating a naïve NK cell population ex vivo by contacting said naïve NK cell population with one or more of IL-12, IL-15, and IL-18 and then expanding with feeder cells expressing membrane bound IL-21 (FC21 feeder cells), plasma membrane particles having membrane bound IL-21 (PM21 particles), or exosomes having membrane bound IL-21 (EX21 exosomes).

2. The use of claim 1, wherein the cancer is selected from lymphoma, B cell lymphoma, T cell lymphoma, mycosis fungoides, Hodgkin's Disease, myeloid leukemia, bladder cancer, brain cancer, nervous system cancer, head and neck cancer, squamous cell carcinoma of head and neck, kidney cancer, lung cancers such as small cell lung cancer and non-small cell lung cancer, neuroblastoma/glioblastoma, ovarian cancer, pancreatic cancer, prostate cancer, skin cancer, liver cancer, melanoma, squamous cell carcinomas of the mouth, throat, larynx, and lung, colon cancer, cervical cancer, cervical carcinoma, breast cancer, and epithelial cancer, renal cancer, genitourinary cancer, pulmonary cancer, esophageal carcinoma, head and neck carcinoma, large bowel cancer, hematopoietic cancers; testicular cancer; colon and rectal cancers, prostatic cancer, or pancreatic cancer.

3. The use of claim 1, wherein the infection is a viral, bacterial, fungal, or parasitic infection.

4. The use of any one of claims 1-3, wherein the activation or expansion of the naïve NK cell population by PM21 particles, EX21 exosomes, or FC21 feeder cells occurs between 1 and 21 days prior to the use in the manufacture of the medicament.

5. The use of any one of claims 1-3, wherein the naïve NK cell population is derived from peripheral blood, umbilical cord blood, or stem cells.

6. The use of claim 1, wherein the naive NK cell population is derived from a NK cell like cell line such as NK92.

7. The use of claim 1, wherein the activated XM NK cells are used in the manufacture of a first medicament and the anti-PDL1 antibody is used in the manufacture of a second medicament.

8. The use of claim 1, wherein the medicament comprises the activated XM NK cells and the anti-PDL1 antibody.

9. The use of claim 1, wherein the naïve NK cell population comprises autologous, haploidentical, or allogeneic NK cells.

10. The use of claim 1, wherein the activated XM NK cells are further contacted ex vivo with one or more of IL-12, IL-15, and IL-18 after expansion by PM21 particles, EX21 exosomes, or FC21 feeder cells and prior the use in the manufacture of the medicament.

11. The use of claim 8, further comprising the use of one or more of IL-12, IL-15, and IL-18 in the manufacture of a second medicament for separate administration from the medicament comprising the activated XM NK cells and the anti-PDL1 antibody.

12. The use of claim 11, wherein the second medicament comprising the one or more of IL-12, IL-15, and IL-18 is prepared to be administered prior to administration of the first medicament comprising the activated XM NK cells and the anti-PDL1 antibody.

13. The use of claim 12, wherein the second medicament comprising the one or more of IL-12, IL-15, and IL-18 is prepared to be administered following administration of the first medicament comprising the activated XM NK cells and the anti-PDL1 antibody.

14. The use of claim 1, further comprising use of PM21 particles, EX21 exosomes, and/or FC21 feeder cells in the manufacture of a medicament for treating the cancer or infection in the subject.

15. The use of claim 14, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells are used in the manufacture of a medicament comprising the activated XM NK cells and the anti-PDL1 antibody.

16. The use of claim 15, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells are used in the manufacture of a second medicament for separate administration from the medicament comprising the activated XM NK cells and the anti-PDL1 antibody.

17. Use of i) one or more of IL-12, IL-15, and IL-18, ii) feeder cells expressing membrane bound IL-21 (FC21 feeder cells), plasma membrane particles having membrane bound IL-21 (PM21 particles), or exosomes having membrane bound IL-21 (EX21 exosomes), and iii) an anti-PDL1 antibody in the manufacture of at least one medicament for improving an anti-PDL1 antibody therapy for treating a cancer or an infection in a subject.

18. The use of claim 17, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells are used in the manufacture of a first medicament and the anti-PDL1 antibody is used in the manufacture of a second medicament, wherein both the first and second medicaments are to be used to treat the cancer or infection in the subject.

19. The use of claim 17, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells and the anti-PDL1 antibody are used in the manufacture of a medicament comprising the PM21 particles, EX21 exosomes, and/or FC21 feeder cells, and the anti-PDL1 antibody.

20. The use of claim 17, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells and the anti-PDL1 antibody are used in the manufacture of a first medicament, and the anti-PDL1 antibody, and the one or more of IL-12, IL-15, and IL-18 are used in the manufacture of a second medicament to be administered to the subject prior to administration of the first medicament.

21. The use of claim 17, wherein the PM21 particles, EX21 exosomes, and/or FC21 feeder cells and the anti-PDL1 antibody are used in the manufacture of a first medicament, and the one or more of IL-12, IL-15, and IL-18 are used in the manufacture of a second medicament to be administered following administration of the first medicament.

22. Use of NK cells activated by contact with PM21 particles, EX21 exosomes, and/or FC21 feeder cells, with an anti-PDL1 antibody in the manufacture of a medicament for anti-cancer or anti-infective therapy, wherein the use further comprises the inclusion of one or more of IL-12, IL-15, and IL-18 in the medicament.

23. The use of claim 22, wherein the medicament further comprises PM21 particles, EX21 exosomes, and/or FC21 feeder cells.