WHAT IS CLAIMED IS:

1. A method of generating an isolated population of non graft versus host disease (GvHD) inducing anti-viral or anti-tumor cells comprising a central memory T-lymphocyte (Tcm) phenotype, said cells being tolerance inducing cells and/or endowed with anti-viral or anti-tumor activity, and capable of homing to the lymph nodes following transplantation, the method comprising:

(a) providing a population of T cells comprising at least 50 % memory T cells;

(b) contacting said population of T cells with a viral or tumor antigen or antigens in the presence of IL-21 so as to allow enrichment of antigen reactive cells; and

(c) culturing said cells resulting from step (b) in the presence of IL-21, IL-15 and/or IL-7 so as to allow proliferation of cells comprising said Tcm phenotype, thereby generating the isolated population of non-GvHD inducing anti-viral or anti-tumor cells.

2. The method of claim 1, wherein:

said population of T cells comprising at least 50 % memory T cells are enriched towards said viral or tumor antigen or antigens; and/or

said population of T cells is obtained by treating peripheral blood mononuclear cells (PBMCs) with an agent capable of depleting $CD4^+$, $CD56^+$ and $CD45RA^+$ cells, or with an agent capable of selecting $CD45RO^+$, $CD8^+$ cells.

3. The method of claim 1, further comprising treating a cell donor with a viral or tumor antigen or antigens prior to said providing said population of T cells comprising at least 50 % memory T cells.

4. A method of generating an isolated population of non-GvHD inducing anti-tumor cells comprising a central memory T-lymphocyte (Tcm) phenotype, said cells being tolerance inducing cells and endowed with anti-tumor activity, and capable of homing to the lymph nodes following transplantation, the method comprising:

(a) treating peripheral blood mononuclear cells (PBMCs) with an agent capable of depleting $CD4^+$, $CD56^+$ and $CD45RA^+$ cells, or with an agent capable of selecting $CD45RO^+$, $CD8^+$ cells, so as to obtain a population of cells enriched with or for memory T cells comprising a $CD45RO^+CD45RA^-CD8^+$ phenotype;

(b) contacting said population of cells enriched with or for memory T cells with a tumor antigen or antigens in the presence of IL-21 so as to allow enrichment of antigen reactive cells; and

(c) culturing said cells resulting from step (b) in the presence of IL-21, IL-15 and/or IL-7 so as to allow proliferation of cells comprising said Tcm phenotype, thereby generating the isolated population of non-GvHD inducing anti-tumor cells.

5. The method of claim 1 or 4, wherein said tumor antigen or antigens:

is presented by autologous antigen presenting cells, non-autologous antigen presenting cells, artificial vehicles or artificial antigen presenting cells; and/or

is presented by antigen presenting cells of the same origin as said memory T cells.

6. A method of generating an isolated population of non-GvHD inducing anti-viral cells comprising a central memory T-lymphocyte (Tcm) phenotype, said cells being tolerance inducing cells and endowed with anti-viral activity, and capable of homing to the lymph nodes following transplantation, the method comprising:

(a) treating peripheral blood mononuclear cells (PBMCs) with an agent capable of depleting $CD4^+$, $CD56^+$ and $CD45RA^+$ cells, or with an agent capable of selecting $CD45RO^+$, $CD8^+$ cells, so as to obtain a population of cells enriched with or for memory T cells comprising a $CD45RO^+CD45RA^-CD8^+$ phenotype;

(b) contacting said population of cells enriched with or for memory T cells with a viral antigen or antigens in the presence of IL-21 so as to allow enrichment of antigen reactive cells; and

(c) culturing said cells resulting from step (b) in the presence of IL-21, IL-15 and/or IL-7 so as to allow proliferation of cells comprising said Tcm phenotype, thereby generating the isolated population of non-GvHD inducing anti-third party cells.

7. The method of claim 6, wherein said viral antigen or antigens:

is presented by autologous antigen presenting cells, non-autologous antigen presenting cells, artificial vehicles or artificial antigen presenting cells; and/or

is presented by antigen presenting cells of the same origin as the PBMCs; and/or

comprises two or more viral peptides; and/or

comprises an EBV peptide, a CMV peptide, an Adenovirus (Adv) peptide and/or BK virus peptide; and/or

comprises three EBV peptides, two CMV peptides and two Adenovirus (Adv) peptides; and/or

is selected from the group consisting of EBV-LMP2, EBV-BZLF1, EBV-EBNA1, CMV-pp65, CMV-IE-1, Adv-penton and Adv-hexon; and/or

comprises two or more of EBV-LMP2, EBV-BZLF1, EBV-EBNA1, CMV-pp65, CMV-IE-1, Adv-penton and Adv-hexon; and/or

further comprises a bacterial antigen.

8. The method of any one of claims 1, 4 or 6, wherein:

(i) said contacting said population of T cells or said population of cells with said antigen or antigens in the presence of said IL-21:

is effected for 12 hours to 5 days; or

is effected for 3 days;

and/or

(ii) said culturing said cells resulting from step (b) in the presence of IL-21, IL-15 and/or IL-7:

is effected for 12 hours to 10 days; or

is effected for 4 days to 8 days; or

is effected for 6 days.

9. The method of any one of claims 1, 2, 4, 6 or 8, wherein said population of cells enriched with or for memory T cells are depleted of $CD4^+$ T cells, $CD56^+$ NK cells and/or $CD45RA^+$ naïve T cells.

10. The method of any one of claims 1-9, wherein:

said total length of time for generating the non-GvHD inducing anti-viral or anti-tumor cells is 10 days; and/or

said method is effected ex-vivo.

11. The method of any one of claims 1, 4 or 6,

further comprising depleting alloreactive cells from said cells comprising said Tcm phenotype following step (c), and optionally wherein said depleting said alloreactive cells is effected by depletion of CD137+ and/or CD25+ cells following contacting said cells comprising said Tcm phenotype with host antigen presenting cells (APCs); and/or

wherein said cells having said Tcm phenotype comprise a $CD3^+$, $CD8^+$, $CD62L^+$, $CD45RA^-$, $CD45RO^+$ signature.

12. An isolated population of non-GvHD inducing anti-viral or anti-tumor cells comprising cells having a central memory T-lymphocyte (Tcm) phenotype, said cells being tolerance inducing cells and endowed with anti-viral or anti-tumor activity, and capable of homing to the lymph nodes following transplantation, generated according to the method of any one of claims 1-11.

13. A pharmaceutical composition comprising as an active ingredient the isolated population of non-GvHD inducing anti-viral or anti-tumor cells of claim 12 and a pharmaceutical acceptable carrier.

14. The isolated population of non-GvHD inducing anti-viral or anti-tumor cells of claim 12 for use in treating a disease in a subject in need thereof.

15. The isolated population of non-GvHD inducing anti-viral or anti-tumor cells for use of claim 14, wherein the isolated population of non-GvHD inducing anti-

viral or anti-tumor cells further comprises a cell or tissue transplant which is to be administered concomitantly or following one another.

16. The isolated population of non-GvHD inducing anti-viral or anti-tumor cells of claim 12 for use as an adjuvant treatment for a cell or tissue transplant into a subject, wherein said subject is in need of a cell or tissue transplantation.