CLAIMS

1. A method of producing T cells comprising

(a) activating T cells in the presence of anti-CD3 antibody and an anti-CD28 antibody,

(b) expanding a first portion of the activated T cells over a plurality of different periods of time selected from 1 days to 15 days after the activating,

(c) culturing the expanded first portion of the activated T cells in (b) in the presence of at least one cytokine and in the absence of antigen presenting cells over a period of at least 21 days,

wherein the at least one cytokine is selected from the group consisting of interleukin (IL) 2, IL-7, IL-15, and a combination thereof,

(d) measuring a cytokine response in the cultured T cells in (c) in the absence of continual cytokine stimulation,

(e) comparing the cytokine response in (d) to identify a period of time from the plurality of different periods of time in (b) that yields a maximum cytokine response in (d), and

(f) expanding a second portion of the activated T cells in (a) for the period of time identified in (e) that yields a maximum cytokine response in (d).

2. The method of claim 1, further comprising freezing the expanded first portion of the activated T cells prior to culturing.

3. The method of claim 1 or 2, further comprising thawing the frozen expanded first portion of activated T cells prior to the culturing in (c).

4. The method of any one of claims 1-3, further comprising resting the thawed expanded first portion of the activated T cells prior to the culturing in (c).

5. The method of claim 4, wherein the resting is carried out for 2 hours to 12 hours.

6. The method of any one of claims 1-5, wherein the concentration of IL-2 is from 10 U/ml to 500 U/ml, from 10 U/ml to 450 U/ml, from 10 U/ml to 400 U/ml, from 10 U/ml to 350 U/ml, from 10 U/ml to 300 U/ml, from 10 U/ml to 250 U/ml, from 10 U/ml to 200

U/ml, from 10 U/ml to 150 U/ml, from 10 U/ml to 100 U/ml, from 10 U/ml to 50 U/ml, from 20 U/ml to 40 U/ml, from 25 U/ml to 35 U/ml, or from 30 U/ml to 35 U/ml.

7. The method of any one of claims 1-6, wherein the concentration of IL-7 is from 0.1 ng/ml to 50 ng/ml, from 0.1 ng/ml to 45 ng/ml, from 0.1 ng/ml to 40 ng/ml, from 0.1 ng/ml to 35 ng/ml, from 0.1 ng/ml to 30 ng/ml, from 0.1 ng/ml to 25 ng/ml, from 0.1 ng/ml to 20 ng/ml, from 0.1 ng/ml to 15 ng/ml, from 0.1 ng/ml to 10 ng/ml, from 0.1 ng/ml to 5 ng/ml, from 0.1 ng/ml to 4 ng/ml, from 0.1 ng/ml to 3 ng/ml, from 0.1 ng/ml to 2 ng/ml, from 0.1 ng/ml to 1 ng/ml, or from 0.1 ng/ml to 0.5 ng/ml.

8. The method of any one of claims 1-7, wherein the concentration of IL-15 is from 0.1 ng/ml to 50 ng/ml, from 0.1 ng/ml to 45 ng/ml, from 0.1 ng/ml to 40 ng/ml, from 0.1 ng/ml to 35 ng/ml, from 0.1 ng/ml to 30 ng/ml, from 0.1 ng/ml to 25 ng/ml, from 0.1 ng/ml to 20 ng/ml, from 0.1 ng/ml to 15 ng/ml, from 0.1 ng/ml to 10 ng/ml, from 0.1 ng/ml to 5 ng/ml, from 0.1 ng/ml to 4 ng/ml, from 0.1 ng/ml to 3 ng/ml, from 0.1 ng/ml to 2 ng/ml, from 0.1 ng/ml to 1 ng/ml, or from 0.1 ng/ml to 0.5 ng/ml.

9. The method of any one of claims 1-8, wherein the cytokine response is selected from one or more of increased proliferation, reduced apoptosis, increased population of naïve T cells (T_N) and/or stem memory T cells (T_{scm})/T central memory (T_{cm}), and a combination thereof.

10. The method of any one of claims 1-9, wherein the anti-CD3 antibody and the anti-CD28 antibody each have a concentration of from 0.1 µg/ml to 10.0 µg/ml, 0.1 µg/ml to 8.0 µg/ml, 0.1 µg/ml to 6.0 µg/ml, 0.1 µg/ml to 4.0 µg/ml, 0.1 µg/ml to 2.0 µg/ml, 0.1 µg/ml to 1.0 µg/ml, 0.1 µg/ml to 0.8 µg/ml, 0.1 µg/ml to 0.6 µg/ml, 0.1 µg/ml to 0.5 µg/ml, 0.1 µg/ml to 0.25 µg/ml, 0.2 µg/ml to 0.5 µg/ml, 0.2 µg/ml to 0.3 µg/ml, 0.3 µg/ml to 0.5 µg/ml, 0.3 µg/ml to 0.4 µg/ml, or 0.4 µg/ml to 0.5 µg/ml.

11. The method of any one of claims 1-10, wherein the T cell is a $CD3^+$ $CD8^+$ T cell.

12. The method of any one of claims 1-11, wherein the culturing in (c) is performed for 21 days.

13. The method of any one of claims 1-12, wherein the period of time identified in (e) is about 3 to about 5 days.

14. The method of any one of claims 1-13, wherein the at least one cytokine is IL-15.

15. The method of any one of claims 1-13, wherein the at least one cytokine is IL-2 and IL-15.

16. The method of any one of claims 1-13, wherein the at least one cytokine is IL-7 and IL-15.

17. The method of any one of claims 1-13, wherein the at least one cytokine is IL-7.

18. The method of any one of claims 1-13, wherein the at least one cytokine is IL-7 and IL-2.

19. The method of any one of claims 1-13, wherein the at least one cytokine is IL-2.

20. The method of any one of claims 1-13, wherein the at least one cytokine is IL-2, IL-7 and IL-15.