CLAIMS

1. A method for culturing natural killer cells comprising a step of co-culturing transformed CD4+ T cells and seed cells, wherein the transformed CD4+ T cells express at least one gene selected from the group consisting of 4-1BBL gene, mbIL-21 gene, OX40L gene and mTNF-α gene, and wherein the seed cells are mononuclear cells derived from cord blood.

2. The method for culturing natural killer cells of claim 1, wherein the 4-1BBL gene is a base sequence coding the amino acid sequence represented by sequence No. 1.

3. The method for culturing natural killer cells of claim 2, wherein the base sequence coding the amino acid sequence represented by sequence No. 1 is a base sequence represented by sequence No. 2.

4. The method for culturing natural killer cells of claim 1, wherein the mbIL-21 gene is a base sequence coding the amino acid sequence represented by sequence No. 3.

5. The method for culturing natural killer cells of claim 4, wherein the base sequence coding the amino acid sequence represented by sequence No. 3 is a base sequence represented by sequence No. 4.

6. The method for culturing natural killer cells of claim 1, wherein the OX40L gene is a base sequence coding the amino acid sequence represented by sequence No. 5.

7. The method for culturing natural killer cells of claim 6, wherein the base sequence coding the amino acid sequence represented by sequence No. 5 is a base sequence represented by sequence No. 6.

8. The method for culturing natural killer cells of claim 1, wherein the mTNF-α gene is a base sequence coding the amino acid sequence represented by sequence No. 8.

9. The method for culturing natural killer cells of claim 8, wherein the base sequence coding the amino acid sequence represented by sequence No. 8 is a base sequence represented by sequence No. 9.

10. The method for culturing natural killer cells of claim 1, wherein the gene is introduced through a recombinant lentivirus.

11. The method for culturing natural killer cells of claim 1, wherein the CD4+ T cells express 4-1BBL gene or mbIL-21 gene.

12. The method for culturing natural killer cells of claim 1, wherein the CD4+ T cells express 4-1BBL gene and mbIL-21 gene.

13. The method for culturing natural killer cells of claim 1, wherein the CD4+ T cells express 4-1BBL gene, mbIL-21 gene, and mTNF-α gene.

14. The method for culturing natural killer cells of claim 1, wherein the CD4+ T cells express 4-1BBL gene, mbIL-21 gene, OX40L gene, and mTNF-α gene.

15. The method for culturing natural killer cells of claim 1, wherein the CD4+ T cells are any one selected from the group consisting of Hut78, H9, Jurkat, Loucy, Molt-3, Molt-13, Peer, RPMI8402, and TALL-01 cells.

16. The method for culturing natural killer cells of claim 1, wherein the cultivation is performed by mixing the transformed CD4+ T cells and seed sells at a ratio of 0.1:1 to 50:1.

17. The method for culturing natural killer cells of claim 1, wherein the seed cells are mixed once with the support cells and cultured for 5 to 60 days, or mixed with the support cells at least twice and cultured for at least 60 days.

18. The method for culturing natural killer cells of claim 1, wherein the cultivation is performed in a medium containing an anti-CD3 antibody and interleukin protein.

19. The method for culturing natural killer cells of claim 18, wherein the anti-CD3 antibody comprises any one selected from the group consisting of OKT3, UCHT1, and HIT3a.

20. The method for culturing natural killer cells of claim 18, wherein the interleukin protein comprises any one selected from the group consisting of IL-2, IL-12, IL-15, IL-18, and IL-21.

21. A composition for culturing natural killer cells from mononuclear cells derived from cord blood as seed cells, comprising transformed CD4+ T cells which express at least one gene selected from the group consisting of 4-1BBL gene, mbIL-21 gene, OX40L gene and mTNF-α gene, as active ingredients.