Claims

1. A method for producing CD4/CD8 double positive cells, the method comprising the following steps:
step 1: separating, from a cell population comprising hematopoietic progenitor cells, cells expressing one or more molecules selected from a first group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD32, CD39, CD49a, CD164, CD317, CD200, CD218a, CD7, CD144, CD56, CD226, CD262 and CD325, and/or cells not expressing one or more molecules selected from a second group consisting of CD49f, CD51, CD102, CD42b, CD61, CD62P, CD69 and CD156c, wherein the separated cells express CD34 and CD43, and
step 2: differentiating the cell separated in step 1 into CD4/CD8 double positive cells.

2. The method according to claim 1, wherein the cells selected in said step 1 do not express CD235a or CD14 but express CD45, CD34 and CD43.

3. The method according to claim 1 or 2, wherein said step 1 comprises separating, from a cell population comprising hematopoietic progenitor cells, cells expressing one or more molecules selected from the first group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD32, CD39, CD49a, CD164, CD317, CD200, CD218a, CD7, CD144, CD56, CD226, CD262 and CD325.

4. The method according to claim 3, wherein the first group in said step 1 consists of CD24, CD62L, CD90, CD143, CD263, Notch3, CD200, CD218a, CD7 and CD144.

5. The method according to claim 1 or 2, wherein said step 1 comprises separating, from a cell population comprising hematopoietic progenitor cells, cells not expressing one or more molecules selected from the second group consisting of

CD49f, CD51, CD102, CD42b, CD61, CD62P, CD69 and CD156c.

6. The method according to claim 5, wherein the second group in said step 1 consists of CD49f, CD51 and CD102.

7. The method according to any one of claims 1 to 6, wherein the cell population comprising hematopoietic progenitor cells in said step 1 is obtained by inducing differentiation of pluripotent stem cells.

8. The method according to claim 7, wherein said pluripotent stem cells are human induced pluripotent stem cells.

9. A method for producing CD8 single positive cells, comprising a step of inducing CD4/CD8 double positive cells obtained by the method according to any one of claims 1 to 8 into CD8 single positive cells.

10. The method according to claim 9, wherein said CD8 single positive cells are cytotoxic T lymphocytes.

11. A cell population for use in production of CD4/CD8 double positive cells obtained by separating, from a cell population comprising hematopoietic progenitor cells, cells expressing one or more molecules selected from a first group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD32, CD39, CD49a, CD164, CD317, CD200, CD218a, CD7, CD144, CD56, CD226, CD262 and CD325, and/or cells not expressing one or more molecules selected from a second group consisting of CD49f, CD51, CD102, CD42b, CD61, CD62P, CD69 and CD156c, wherein the separated cells express CD34 and CD43.

12. The cell population according to claim 11, wherein the separated cells do not express CD235a or CD14 but express CD45, CD34 and CD43.

13. The cell population according to claim 11 or 12, wherein said cell population comprising hematopoietic progenitor cells is obtained by inducing differentiation of pluripotent stem cells.

14. The cell population according to claim 13, wherein said pluripotent stem cells are human-induced pluripotent stem cells.

15. A cell population for use in production of CD4/CD8 double positive cells comprising hematopoietic progenitor cells expressing one or more molecules selected from a first group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD32, CD39, CD49a, CD164, CD317, CD200, CD218a, CD7, CD144, CD56, CD226, CD262 and CD325, and/or hematopoietic progenitor cells not expressing one or more molecules selected from a second group consisting of CD49f, CD51, CD102, CD42b, CD61, CD62P, CD69 and CD156c, at a ratio of [number of the hematopoietic progenitor cells/total number of cells in the cell population] not less than 40%, wherein the hematopoietic progenitor cells express CD34 and CD43.

16. The cell population according to claim 15, wherein the ratio is of the hematopoietic progenitor cells expressing one or more molecules selected from the first group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD200, CD218a, CD7 and CD144.

17. The cell population according to claim 15, wherein the ratio is of the hematopoietic progenitor cells not expressing one or more molecules selected from the second group consisting of CD49f, CD51 and CD102.

18. A reagent for separating hematopoietic progenitor cells for

use in production of CD4/CD8 double positive cells, the reagent comprising an antibody to CD34 and an antibody to CD43 as well as an antibody to each of one or more molecules selected from the group consisting of CD24, CD62L, CD90, CD143, CD263, Notch3, CD32, CD39, CD49a, CD164, CD317, CD200, CD218a, CD7, CD144, CD56, CD226, CD262, CD325, CD49f, CD51, CD102, CD42b, CD61, CD62P, CD69 and CD156c.

19. The reagent according to claim 18 further comprising one or more antibodies to CD235a, CD14 and/or CD45.