CLAIMS

1. A method of improving the efficiency of establishment of iPS cells, comprising inhibiting the p53 function in the step of somatic cell nuclear reprogramming.

2. The method of claim 1, wherein the p53 function is inhibited by bringing a chemical inhibitor of p53 into contact with a somatic cell.

3. The method of claim 1, wherein the p53 function is inhibited by bringing a dominant negative mutant of p53 or a nucleic acid that encodes the same into contact with a somatic cell.

4. The method of claim 1, wherein the p53 function is inhibited by bringing a nucleic acid selected from the group consisting of siRNAs and shRNAs against p53 and DNAs that encode the same into contact with a somatic cell.

5. The method of claim 1, wherein the p53 function is inhibited by bringing a p53 pathway inhibitor into contact with a somatic cell.

6. An agent for improving the efficiency of establishment of iPS cells, the agent comprising an inhibitor of p53 function.

7. The agent of claim 6, wherein the inhibitor is a chemical inhibitor.

8. The agent of claim 6, wherein the inhibitor is a dominant negative mutant of p53 or a nucleic acid that encodes the same.

9. The agent of claim 6, wherein the inhibitor is a nucleic acid selected from the group consisting of siRNAs and shRNAs

against p53 and DNAs that encode the same.

10. The agent of claim 6, wherein the inhibitor is a p53 pathway inhibitor.

11. A method of producing iPS cells, comprising bringing a nuclear reprogramming substance and an inhibitor of p53 function into contact with a somatic cell.

12. The method of claim 11, wherein the inhibitor is a chemical inhibitor.

13. The method of claim 11, wherein the inhibitor is a dominant negative mutant of p53 or a nucleic acid that encodes the same.

14. The method of claim 11, wherein the inhibitor is a nucleic acid selected from the group consisting of siRNAs and shRNAs against p53 and DNAs that encode the same.

15. The method of claim 11, wherein the inhibitor is a p53 pathway inhibitor.

16. The method of claim 11, wherein the nuclear reprogramming substances are Oct3/4, Klf4 and Sox2, or nucleic acids that encode the same.

17. The method of claim 11, wherein the nuclear reprogramming substances are Oct3/4, Klf4, Sox2 and c-Myc, or nucleic acids that encode the same.

18. The method of claim 11, wherein the somatic cell is a T cell.

19. An iPS cell wherein a T cell antigen receptor (TCR) gene

is rearranged, the iPS cells being obtained by reprogramming a T cell.

20. An iPS cell comprising a dominant negative mutant of p53 or an exogenous nucleic acid that encodes an siRNA or shRNA against p53.

CLAIMS

1. A method of improving the efficiency of establishment of iPS cells, comprising inhibiting the p53 function in the step of somatic cell nuclear reprogramming, wherein the inhibition of the p53 function is carried out by one of more substances selected from the group consisting of the following:
(i) Pifithrin-α or an analogue thereof, Pifithrin-β or analogue thereof, or Pifithrin-μ;
(ii) a dominant negative mutant of p53 or a nucleic acid that encodes the same;
(iii) an siRNA or shRNA against p53 or a DNA that encodes the same;
(iv) MDM2 or a nucleic acid that encodes the same; and
(v) an siRNA, shRNA, antisense nucleic acid or ribozyme against p21.

2. The method of claim 1, wherein the p53 function is inhibited by bringing a dominant negative mutant of p53 or a nucleic acid that encodes the same into contact with a somatic cell.

3. The method of claim 1 or 2, wherein the dominant negative mutant of p53 is p53DD, p53P275S or p53D278N.

4. The method of any one of claims 1-3, wherein the dominant negative mutant of p53 is p53DD.

5. The method of claim 1, wherein the p53 function is inhibited by bringing a nucleic acid selected from the group consisting of siRNAs and shRNAs against p53 and DNAs that encode the same into contact with a somatic cell.

6. An agent for improving the efficiency of establishment of iPS cells, the agent comprising an inhibitor of p53 function, wherein the inhibitor of p53 function is one of more substances selected from the group consisting of the following:
(i) Pifithrin-α or an analogue thereof, Pifithrin-β or analogue thereof, or Pifithrin-μ;
(ii) a dominant negative mutant of p53 or a nucleic acid that encodes the same;
(iii) an siRNA or shRNA against p53 or a DNA that encodes the same;
(iv) MDM2 or a nucleic acid that encodes the same; and
(v) an siRNA, shRNA, antisense nucleic acid or ribozyme against p21.

7. The agent of claim 6, wherein the inhibitor is a dominant negative mutant of p53 or a nucleic acid that encodes the same.

8. The agent of claim 6 or 7, wherein the dominant negative mutant of p53 is p53DD, p53P275S or p53D278N.

9. The agent of any one of claims 6-8, wherein the dominant negative mutant of p53 is p53DD.

10. The agent of claim 6, wherein the inhibitor is a nucleic acid selected from the group consisting of siRNAs and shRNAs against p53 and DNAs that encode the same.

11. A method of producing iPS cells, comprising bringing nuclear reprogramming substances and an inhibitor of p53 function into contact with a somatic cell, wherein the nuclear reprogramming substances comprise:
(a) Oct3/4 and Klf4, or nucleic acids that encode the same;

(b) Oct3/4, Klf4 and Sox2, or nucleic acids that encode the same; or
(c) Oct3/4, Klf4, Sox2 and c-Myc, or nucleic acids that encode the same,
and wherein the inhibitor of p53 function is one or more substance selected from the group consisting of the following:
(i) Pifithrin-α or an analogue thereof, Pifithrin-β or analogue thereof, or Pifithrin-μ;
(ii) a dominant negative mutant of p53 or a nucleic acid that encodes the same;
(iii) an siRNA or shRNA against p53 or a DNA that encodes the same;
(iv) MDM2 or a nucleic acid that encodes the same; and
(v) an siRNA, shRNA, antisense nucleic acid or ribozyme against p21.

12. The method of claim 11, wherein the inhibitor is a dominant negative mutant of p53 or a nucleic acid that encodes the same.

13. The method of claim 11 or 12, wherein the dominant negative mutant of p53 is p53DD, p53P275S or p53D278N.

14. The method of any one of claims 11-13, wherein the dominant negative mutant of p53 is p53DD.

15. The method of claim 11, wherein the inhibitor is a nucleic acid selected from the group consisting of siRNAs and shRNAs against p53 and DNAs that encode the same.

16. The method of any one of claims 11-15, wherein the somatic cell is a T cell.