CLAIMS

1. A method of culturing pluripotent cells in vitro through at least one cell passage, the method comprising, culturing pluripotent animal cells in the presence of a sufficient amount of:

a. a GSK3 β inhibitor;

b. a second compound selected from one or more of a MEK inhibitor, an Erk inhibitor, a p38 inhibitor, and an FGF receptor inhibitor; and

c. sufficient nutrients for a sufficient time, to allow for at least one cell passage while maintaining cell pluripotency.

2. The method of claim 1, wherein the GSK3 β inhibitor is CHIR99021.

3. The method of claim 1 or claim 2, wherein the culturing step further comprises culturing the cells in the presence of an amount of Leukemia inhibitory factor (LIF).

4. The method of any one of claims 1 to 3, wherein the second compound is a MEK inhibitor.

5. The method of claim 4, wherein the MEK inhibitor is PD0325901.

6. The method of any one of claims 1 to 5, wherein the culturing step is performed in the presence of LIF.

7. The method of any one of claims 1 to 6, wherein the culturing step further comprises culturing the cells in the presence of a TGFβ receptor inhibitor.

8. The method of claim 7, wherein the TGFβ receptor inhibitor is an ALK5 inhibitor.

9. The method of claim 8, wherein the ALK5 inhibitor is A-83-01 or SB431542.

10. The method of any one of claims 1 to 9, wherein the pluripotent cells are induced pluripotent stem cells.

11. An in vitro culture of pluripotent mammalian cells, comprising a sufficient amount of:

a. a GSK3 β inhibitor; and

b. a second compound selected from one or more of a MEK inhibitor, an Erk inhibitor, a p38 inhibitor, and an FGF receptor inhibitor;

to allow for at least one cell passage while maintaining cell pluripotency.

12. The culture of claim 11, further comprising Leukemia inhibitory factor (LIF).

13. The culture of claim 11 or claim 12, wherein the GSK3 β inhibitor is CHIR99021.

14. The culture of any one of claims 11 to 13, wherein the second compound is a MEK inhibitor.

15. The culture of claim 14, wherein the MEK inhibitor is PD0325901.

16. The culture of any one of claims 11 to 15, further comprising a TGFβ receptor inhibitor.

17. The culture of claim 16, wherein the TGFβ receptor inhibitor is an ALK5 inhibitor.

18. The culture of claim 17, wherein the ALK5 inhibitor is A-83-01 or SB431542.

19. The culture of any one of claims 11 to 18, wherein the cells are induced pluripotent stem cells.

20. A cell culture medium, comprising a sufficient amount of:

a. a GSK3 β inhibitor; and

b. a second compound selected from one or more of a MEK inhibitor, an Erk inhibitor, a p38 inhibitor, and an FGF receptor inhibitor;

to allow for at least one cell passage while maintaining cell pluripotency when pluripotent cells are cultured in the medium.

21. The medium of claim 20, further comprising Leukemia inhibitory factor (LIF).

22. The medium of claim 20 or claim 21, wherein the GSK3 β inhibitor is CHIR99021.

23. The medium of any one of claims 20 to 22, wherein the second compound is a MEK inhibitor.

24. The medium of claim 23, wherein the MEK inhibitor is PD0325901.

25. The medium of any one of claims 20 to 24, further comprising a TGFβ receptor inhibitor.

26. The medium of claim 25, wherein the TGFβ receptor inhibitor is an ALK5 inhibitor.

27. The medium of claim 26, wherein the ALK5 inhibitor is A-83-01 or SB431542.