CLAIMS:

1. A system for maintaining pluripotent stem cells, comprising:

a cell culture medium comprising from greater than zero to 3.9 ng/mL of basic fibroblast growth factor (bFGF); and

a substrate for providing support to the stem cells.

2. The system of claim 1, wherein the substrate contains laminin-521 or laminin-511.

3. The system of claim 2, wherein the substrate also contains a cadherin.

4. The system of claim 1, wherein the substrate comprises laminin-521 and wherein the amount of bFGF is 3.5 ng/mL or less.

5. The system of claim 1, wherein the cell culture medium comprises from 0.5 to 3.5 ng/mL of bFGF.

6. The system of claim 1, wherein the cell culture medium further comprises at least one additional growth factor, at least one trace mineral, and at least one lipid.

7. A cell culture medium that provides nutrition to pluripotent stem cells, comprising from greater than zero to 3.9 ng/mL of basic fibroblast growth factor (bFGF).

8. The cell culture medium of claim 7, comprising 3.5 ng/mL or less of bFGF.

9. The cell culture medium of claim 7, comprising from 0.5 to 3.5 ng/mL of bFGF.

10. The cell culture medium of claim 7, further comprising at least one inorganic salt.

11. The cell culture medium of claim 7, further comprising at least one trace mineral.

12. The cell culture medium of claim 7, further comprising at least one energy substrate.

13. The cell culture medium of claim 7, further comprising at least one lipid.

14. The cell culture medium of claim 7, further comprising at least one amino acid.

15. The cell culture medium of claim 7, further comprising at least one vitamin.

16. The cell culture medium of claim 7, further comprising at least one additional growth factor.

17. The cell culture medium of claim 7, further comprising at least one inorganic salt, at least one trace mineral, at least one energy substrate, at least one lipid, at least one amino acid, and at least one vitamin.

18. The cell culture medium of claim 7, wherein the cell culture medium does not contain any one of (1) albumin, (2) insulin or an insulin substitute, or (3) transferrin or a transferrin substitute.

19. The cell culture medium of claim 7, further comprising albumin, insulin, lithium chloride, GABA, TGF beta 1, pipecolic acid, L-glutamine, MEM non-essential amino acid solution, and DMEM/F12 solution.

20. The cell culture medium of claim 7, further comprising at least one additional growth factor, at least one trace mineral, and at least one lipid.

CLAIMS:

1. A system for maintaining pluripotent stem cells, comprising:

a cell culture medium comprising from 0.5 to 3.5 ng/mL of basic fibroblast growth factor (bFGF); and

a substrate containing laminin-521 for providing support to the stem cells.

2. The system of claim 1, wherein the substrate also contains e-cadherin.

3. The system of claim 1, wherein the cell culture medium further comprises at least one additional growth factor, at least one trace mineral, and at least one lipid.

4. The system of claim 1, wherein the cell culture medium further comprising at least one trace mineral.

5. The system of claim 1, wherein the cell culture medium further comprises at least one lipid.

6. The system of claim 1, wherein the cell culture medium further comprises at least one inorganic salt, at least one trace mineral, at least one energy substrate, at least one lipid, at least one amino acid, and at least one vitamin.

7. The system of claim 1, wherein the cell culture medium does not contain any one of (1) albumin, (2) insulin or an insulin substitute, or (3) transferrin or a transferrin substitute.

8. The system of claim 1, wherein the cell culture medium further comprises albumin, insulin, lithium chloride, GABA, TGF beta 1, pipecolic acid, L-glutamine, MEM non-essential amino acid solution, and DMEM/F12 solution.

9. The system of claim 1, wherein the cell culture medium further comprises at least one additional growth factor, at least one trace mineral, and at least one lipid.