[0046] The present disclosure also relates to cell culture media that can be used to maintain stem cells in a pluripotent state. In one aspect, there is provided 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); and a substrate comprising laminin-511.

[0047] The cell culture medium may comprise 3.5 ng/mL or less of bFGF, including from 0.5 to 3.5 ng/mL of bFGF.

[0048] The cell culture medium may further comprise at least one inorganic salt, at least one trace mineral, at least one energy substrate, at least one lipid, at least one amino acid, at least one vitamin, or at least one additional growth factor. In particular embodiments, 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.

[0049] The cell culture medium may not contain any one of (1) albumin, (2) insulin or an insulin substitute, or (3) transferrin or a transferrin substitute.

[0050] The cell culture medium may further comprise albumin, insulin, lithium chloride, GABA, TGF beta 1, pipecolic acid, L-glutamine, MEM non-essential amino acid solution, and DMEM/F12 solution.

[0051] The cell culture medium may further comprise at least one additional growth factor, at least one trace mineral, and at least one lipid.

[0052] Also disclosed is 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.

[0053] The substrate may contain laminin-521 or laminin-511. The substrate may also contain a cadherin.

[0054] These and other non-limiting characteristics of the disclosure are more particularly disclosed below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0055] The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

CLAIMS:

1. 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); and a substrate comprising laminin-511.

2. The cell culture medium of claim 1, comprising 3.5 ng/mL or less of bFGF.

3. The cell culture medium of claim 1, comprising from 0.5 to 3.5 ng/mL of bFGF.

4. The cell culture medium of claim 1, further comprising at least one inorganic salt.

5. The cell culture medium of claim 1, further comprising at least one trace mineral.

6. The cell culture medium of claim 1, further comprising at least one energy substrate.

7. The cell culture medium of claim 1, further comprising at least one lipid.

8. The cell culture medium of claim 1, further comprising at least one amino acid.

9. The cell culture medium of claim 1, further comprising at least one vitamin.

10. The cell culture medium of claim 1, further comprising at least one additional growth factor.

11. The cell culture medium of claim 1, 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.

12. The cell culture medium 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.

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

14. The cell culture medium of claim 1, further comprising at least one additional growth factor, at least one trace mineral, and at least one lipid.