CLAIMS

1. A method of producing a plurality of cells comprising skeletal muscle-committed progenitor cells, the method comprising culturing a plurality of pluripotent stem cells (PSCs) in a culture medium comprising a combination of: (i) at least one activator of the TGF-beta (TGF-β) signaling pathway and (ii) at least one inhibitor of the GSK3 signaling pathway; thereby producing a plurality of cells comprising skeletal muscle-committed progenitor cells.

2. The method of claim 1, wherein culturing is performed under three-dimensional (3D) culture conditions, wherein the 3D culture is selected from the group consisting of a 3D culture devoid of adherent material and/or support matrix and a 3D culture comprising at least one adherent material and/or support matrix.

3. The method of any one of claims 1-2, wherein culturing is performed under two-dimensional (2D) culture conditions comprising at least one adherent material and/or support matrix.

4. The method of any one of claims 1-3, wherein the at least one activator of the TGF-β signaling pathway is selected from the group consisting of: Activin A, TGF-β, BMP2, BMP7, GDF9, NODAL, and any combination thereof.

5. The method of any one of claims 1-4, wherein the at least one inhibitor of the GSK3 signaling pathway is selected from the group consisting of: CHIR-99021 (C22H18Cl2N8) or a salt thereof, SB 216763, LY2090314, TWS119, Tideglusib, GSK-3β inhibitor 1, GSK-3β inhibitor 2, GSK-3β inhibitor 3, AR-A014418, TDZD-8, Kenpaullone, GSK 3 Inhibitor IX, Cromolyn sodium, CHIR-98014, AZD1080, SB 415286, IM-12, 9-ING-41, Indirubin-3'-monoxime, 1-Azakenpaullone, BRD0705, AZD2858, CP21R7, BIO-acetoxime, Bikinin, VP3.15, VP3.15 dihydrobromide, GNF4877, KY19382, SAR502250, A 1070722, (R)-BRD3731, BRD3731, BIP-135, 5-Iodo-indirubin-3'-monoxime, BRD5648, GSK-3 inhibitor 1, GSK-3/CDK5/CDK2-IN-1, Indirubin-3'-monoxime-5-sulphonic acid, a GSK3β-inhibiting flavonoid, lithium, and any combination thereof.

6. The method of any one of claims 1-5, wherein the combination comprises

Activin A and CHIR-99021.

7. The method of any one of claims 1-6, wherein at least one exist (i) culturing the plurality of PSCs is performed continuously in the medium comprising the combination of at least one activator of the TGF-β signaling pathway and at least one inhibitor of the GSK3 signaling pathway; and (ii) culturing the plurality of PSCs is performed in cycles, wherein the medium comprising the combination of at least one activator of the TGF-β signaling pathway and at least one inhibitor of the GSK3 signaling pathway is replaced after each cycle.

8. The method of any one of claims 1-7, wherein the produced plurality of cells further comprises at least one additional lineage committed progenitor cells.

9. The method of any one of claims 1-8, wherein the PSCs are of an origin selected from the group consisting of non-human animal and human.

10. A method of producing a plurality of differentiated cells comprising skeletal muscle cells, the method comprising:

a. depositing the plurality of cells comprising skeletal muscle committed progenitor cells produced by the method of any one of claims 1-26 on an adherent material and/or support matrix; and

b. culturing the plurality of cells in a differentiation medium promoting differentiation of the skeletal muscle-committed progenitor cells to skeletal muscle cells,

thereby producing a plurality of differentiated cells comprising skeletal muscle cells.

11. The method of claim 10, wherein the differentiation medium is devoid of activators of the TGF-β signaling pathway and of inhibitors of the GSK3 signaling pathway.

12. The method of any one of claims 10-11, wherein the entire period for obtaining the plurality of differentiated cells comprising skeletal muscle cells from PSCs is from about 6 days to about 30 days.

13. The method of any one of claims 10-12, wherein the plurality of differentiated cells further comprises at least one additional cell type selected from the group consisting of stromal cells and adipocytes.

14. A plurality of cells comprising skeletal muscle-committed progenitor cells produced by the method of any one of claims 1-9.

15. The plurality of cells of claim 14, wherein the skeletal muscle-committed progenitor cells are produced from non-human animal PSCs.

16. A plurality of differentiated cells comprising skeletal muscle cells produced by the method of any one of claims 10-13.

17. The plurality of differentiated cells of claim 16, wherein said plurality of differentiated cells further comprises at least one type of cells selected from the group consisting of stromal cells, adipocyte cells, and a combination thereof.

18. The plurality of differentiated cells of claim 17, wherein the stromal cells comprise collagen-producing cells.

19. An engineered tissue comprising the plurality of cells of any one of claims 16-18.

20. A cultured food product comprising the plurality of differentiated cells of any one of claims 16-18 and/or an engineered tissue comprising same.

21. The cultured food product of claim 20, wherein said cultured food product is cultured meat.

22. A plurality of *in vitro* grown cells comprising skeletal muscle-committed progenitor cells, wherein the skeletal muscle-committed progenitor cells are characterized by the expression of at least one mesodermal marker and/or at least one early myogenic marker.

23. The plurality of *in vitro* grown cells of claim 22, wherein said plurality of cells comprises at least one GSK3β inhibiting flavonoid and/or a metabolite thereof.

24. A plurality of *in vitro* grown differentiated cells comprising skeletal muscle cells, wherein the skeletal muscle cells are characterized by the expression of at least one myogenic marker.

25. The plurality of *in vitro* grown differentiated cells of claim 24, wherein said plurality of cells further comprises at least one of stromal cells, adipocytes or a combination thereof.

26. The plurality of *in vitro* grown differentiated cells of any one of claims 24-25, wherein the cells are non-human-animal cells.

27. An engineered tissue comprising the plurality of *in vitro* grown differentiated cells of any one of claims 24-26.

28. A cultured food product comprising the plurality of *in vitro* grown differentiated cells of claim 26 and/or an engineered tissue comprising same.