WHAT IS CLAIMED IS:

1. A method for improving myogenic differentiation capacity of a cell line, the method comprising:

    (a) providing a cell line; and

    (b) contacting the cell line with a culture media comprising:

        (i) at least a first Activin A inhibitor,

        (ii) at least a first BMP inhibitor, or

        (iii) at least a first WNT activator, or

        a combination thereof;

    thereby improving the cell line's myogenic differentiation capacity.

2. The method of claim 1, further comprising immortalizing the cell line by introducing a polynucleotide encoding a telomerase reverse transcriptase (TERT) polypeptide.

3. The method of claim 1, wherein the cell line is a late passage cell line.
4. The method of claim 1, wherein the cell line does not have differentiation capacity prior to contact with the culture media.
5. The method of claim 1, wherein after step (b) the method comprises (c) inducing myogenic specific differentiation, comprising inducing formation of myocytes, myoblasts, myotubes, or a combination thereof and (d) formulating into a food product suitable for human consumption.
6. The method of claim 1, further comprising introducing into a cell of the cell line a polynucleotide encoding at least one of MYOD, MYOG, MEF2B, PAX7, PAX3, and PITX1.

7. The method of claim 1, wherein the Activin A inhibitor is A-83-01, E-616542, SB431542, TGFβRI-IN-3, R-268712, Follistatin, or Follistatin-like-3.

8. The method of claim 1, wherein the BMP inhibitor is LDN193189, Dorsomorphin, Noggin, Chrodin, or Gremlin.

9. The method of claim 1, wherein the WNT activator is CHIR99021, BIO, AZD1080, WNT1a, WNT3a, WNT4, or WNT7.

10. The method of claim 1, wherein the culture media further comprises sodium butyrate.

11. The method of claim 1, wherein the cell line is from a species selected from: poultry, livestock, game, or aquatic animal species.

12. The method of claim 3, wherein the late passage cell line has exceeded 60 population doublings.

13. The method of claim 1, wherein the control cell line does not have myogenic differentiation capacity at or above 60 population doublings.

14. The method of claim 1, wherein after step (c), the cell line exhibits increased Pax7 expression, increased MyHC1 expression, and/or increased myotube formation, as compared to a cell line that is not exposed to the at least first Activin A inhibitor, at least first BMP inhibitor, at least first WNT activator, one or more myogenic regulatory factors, epigenetic modulator, or combination thereof.

15. The method of claim 1, wherein after step (c), the cell line exhibits an improved myogenic differentiation capacity after at least 60 passages compared with a cell line not exposed to the at least first Activin A inhibitor, at least first BMP inhibitor, at least first WNT activator, one or more myogenic regulatory factors, epigenetic modulator, or a combination thereof.

16. The method of claim 1, further comprising adapting the cell line for suspension culture.

17. The method of claim 1, wherein the step of inducing myogenic-specific differentiation comprises contacting the cell line with a differentiation medium.

18. A population of cells produced by any of the methods of claims 1-28.

19. A cell culture media for improving myogenic differentiation capacity of a cell line or an immortalized cell line, the cell culture media comprising:

(a) at least a first Activin A inhibitor;

(b) at least a first BMP inhibitor;

(c) at least a first WNT activator, or

a combination thereof.

20. The cell culture media of claim 17, further comprising sodium butyrate.