What is claimed is:

1. A method for culturing recombinant eukaryotic cells for improved recombinant protein production, comprising the steps of: (a) propagating or maintaining cells in a defined cell culture medium during growth phase, (b) supplementing the base cell culture medium with about 0.1 mM to about 10 mM L-taurine and about 0.09 mM to about 0.9 mM ornithine and expressing a recombinant protein of interest during production phase, and (c) increasing titer of the protein of interest by the addition of taurine.

2. The method of claims 1, 48, or 49 wherein the supplements of (b) are provided from about 1 to about 5 times during production phase.

3. The method of claims 1, 48, or 49 wherein the supplements of (b) are provided on each day for the duration of the production phase.

4. The method of claims 1, 48, or 49 further comprising supplementing the culture in a defined cell culture medium with about 0.1 mM to about 10 mM L-taurine during growth phase.

5. The method of claims 1, 48, or 49 wherein the eukaryotic cell is selected from the group consisting of mammalian cell, avian cell, insect cell, and yeast cell.

6. The method of claim 5, wherein the cell is selected from the group consisting of CHO (e.g. CHO K1, DXB-11 CHO, Veggie-CHO), COS (e.g. COS-7), retinal cell, Vero, CV1, kidney (e.g. HEK293, 293 EBNA, MSR 293, MDCK, HaK, BHK21), HeLa, HepG2, WI38, MRC 5, Colo25, HB 8065, HL-60, lymphocyte (e.g. Jurkat, Daudi), A431 (epidermal), CV-1, U937, 3T3, L cell, C127 cell, SP2/0, NS-0, MMT cell, PER.C6® cell, stem cell, tumor cell, and a cell line derived from an aforementioned cell.

7. The method of claim 6, wherein the cell is a CHO cell.

8. The method of claims 1, 48, or 49 wherein the protein of interest is an antigen binding protein.

9. The method of claims 1, 48, or 49 wherein the protein of interest comprises an Fc domain.

10. The method of claim 8, wherein the protein of interest is selected from the group consisting of an Fc-fusion protein, a receptor-Fc-fusion protein (TRAP), an antibody, an antibody fragment, and a ScFv-Fc fusion protein.

11. The method of claim 10, wherein the protein of interest is selected from the group consisting of an anti-PD1 antibody, an anti-PDL-1 antibody, an anti-Dll4 antibody, an anti-ANG2 antibody, an anti-AngPtl3 antibody, an anti-PDGFR antibody, an anti-Erb3 antibody, an anti-PRLR antibody, an anti-TNF antibody, an anti-EGFR antibody, an anti-PCSK9 antibody, an anti-GDF8 antibody, an anti-GCGR antibody, an anti-VEGF antibody, an anti-IL1R antibody, an anti-IL4R antibody, an anti-IL6R antibody, an anti-IL1 antibody, an anti-IL2 antibody, an anti-IL3 antibody, an anti-IL4 antibody, an anti-IL5 antibody, an anti-IL6 antibody, an anti-IL7 antibody, an anti-RSV antibody, an anti-NGF antibody, an anti-CD3 antibody, an anti-CD20 antibody, an anti-CD19 antibody, an anti-CD28 antibody, an anti-CD48 antibody, an anti-CD3/anti-CD20 bispecific antibody, an anti-CD3/anti-MUC16 bispecific antibody, and an anti-CD3/anti-PSMA bispecific antibody.

12. The method of claim 10, wherein the protein of interest is selected from the group consisting of alirocumab, sarilumab, fasinumab, nesvacumab, dupilumab, trevogrumab, evinacumab, and rinucumab.

13. A method for producing a recombinant protein of interest comprising the steps of:
    (a) introducing into a cell or cells a nucleic acid comprising a nucleotide sequence encoding a protein of interest;
    (b) selecting the cell(s) expressing the protein of interest;

(c) culturing the selected cell(s) in a cell culture medium comprising about 0.1 mM to about 10 mM L-taurine and about 0.09 mM to about 0.9 mM ornithine; and

(d) producing the protein of interest in the cell, wherein the protein of interest is secreted into the medium.

14. The method of claims 13, 50, or 51 wherein the cell(s) of step (c) is capable of high-yield production of the protein of interest.

15. The method of claims 13, 50, or 51 wherein the cell(s) is capable of about 3% to about 8% or greater higher protein yield compared to cells expressing the protein of interest in a cell culture medium containing less than 0.1 mM L-taurine.

16. The method of claims 13, 50, or 51 wherein the cell is a CHO cell, HEK293 cell or BHK cell.

17. The method of claims 13, 50, or 51 wherein the protein of interest is an antigen-binding protein.

18. The method of claims 13, 50, or 51 wherein the protein of interest comprises an Fc domain.

19. The method of claims 13, 50, or 51 wherein the protein of interest is selected from the group consisting of an Fc-fusion protein, a receptor-Fc-fusion protein (TRAP), an antibody, and an antibody fragment.

20. The method of claim 19, wherein the protein of interest is selected from the group consisting of an anti-PD1 antibody, an anti-PDL-1 antibody, an anti-Dll4 antibody, an anti-ANG2 antibody, an anti-AngPtl3 antibody, an anti-PDGFR antibody, an anti-Erb3 antibody, an anti-PRLR antibody, an anti-TNF antibody, an anti-EGFR antibody, an anti-PCSK9 antibody, an anti-GDF8 antibody, an anti-GCGR antibody, an anti-VEGF antibody, an anti-IL1R antibody, an anti-IL4R antibody, an anti-IL6R antibody, an anti-

IL1 antibody, an anti-IL2 antibody, an anti-IL3 antibody, an anti-IL4 antibody, an anti-IL5 antibody, an anti-IL6 antibody, an anti-IL7 antibody, an anti-RSV antibody, an anti-NGF antibody, an anti-CD3 antibody, an anti-CD20 antibody, an anti-CD19 antibody, an anti-CD28 antibody, an anti-CD48 antibody, an anti-CD3/anti-CD20 bispecific antibody, an anti-CD3/anti-MUC16 bispecific antibody, and an anti-CD3/anti-PSMA bispecific antibody.

21. The method of claim 19, wherein the protein of interest is selected from the group consisting of alirocumab, sarilumab, fasinumab, nesvacumab, dupilumab, trevogrumab, evinacumab, and rinucumab.

22. A method for producing a protein of interest in a taurine-supplemented culture medium, comprising the steps of:
    (a) introducing into a cell a nucleic acid comprising a sequence encoding a protein of interest;
    (b) selecting a cell or cells expressing the protein of interest;
    (c) culturing the selected cell(s) in a cell culture medium;
    (d) supplementing the cell culture medium with taurine in an amount of about 0.1 mM to about 10 mM and ornithine in an amount of about 0.09 mM to about 0.9 mM;
    (e) maintaining the cell culture under taurine supplementation conditions of (d) for at least 6 days to express a higher titer of protein of interest in the cell(s) compared to cell(s) cultured in non-taurine supplemented culture, wherein the protein of interest is secreted into the medium; and
    (f) harvesting the protein of interest.

23. The method of claims 22, 52, or 53 wherein the harvested protein has a protein titer that is at least 8%, 9%, 10%, 11%, 12%, 13%, 14%, 15%, or at least 20% higher than the titer of a comparator control culture wherein the comparator control culture medium has not been subjected to the taurine supplementation conditions of (d).

24. A method for producing a recombinant protein of interest in high yield comprising culturing a recombinant cell line in a cell culture medium comprising at least about 0.1 mM L-taurine and at least about 0.09 mM ornithine, wherein the cell line comprises a stably integrated nucleic acid encoding the recombinant protein.

25. The method of claims 24, 54, or 55 wherein yield of the recombinant protein of interest was increased by the inclusion of taurine in the medium compared to a cell line cultured in a cell culture medium that does not include L-taurine.

26. The method of claims 24, 54, or 55 wherein the protein of interest is selected from the group consisting of an Fc-fusion protein, a receptor-Fc-fusion protein (TRAP), an antibody, and an antibody fragment.

27. The method of claim 26, wherein the protein of interest is selected from the group consisting of an anti-PD1 antibody, an anti-PDL-1 antibody, an anti-Dll4 antibody, an anti-ANG2 antibody, an anti-AngPtl3 antibody, an anti-PDGFR antibody, an anti-Erb3 antibody, an anti-PRLR antibody, an anti-TNF antibody, an anti-EGFR antibody, an anti-PCSK9 antibody, an anti-GDF8 antibody, an anti-GCGR antibody, an anti-VEGF antibody, an anti-IL1R antibody, an anti-IL4R antibody, an anti-IL6R antibody, an anti-IL1 antibody, an anti-IL2 antibody, an anti-IL3 antibody, an anti-IL4 antibody, an anti-IL5 antibody, an anti-IL6 antibody, an anti-IL7 antibody, an anti-RSV antibody, an anti-NGF antibody, an anti-CD3 antibody, an anti-CD20 antibody, an anti-CD19 antibody, an anti-CD28 antibody, an anti-CD48 antibody, an anti-CD3/anti-CD20 bispecific antibody, an anti-CD3/anti-MUC16 bispecific antibody, and an anti-CD3/anti-PSMA bispecific antibody.

28. The method of claim 26, wherein the protein of interest is selected from the group consisting of alirocumab, sarilumab, fasinumab, nesvacumab, dupilumab, trevogrumab, evinacumab, and rinucumab.

29. The method of claim 26, wherein the production method is capable of increasing protein yield by at least 0.1 g/L, at least 0.5 g/L, at least 1 g/L, at least 1.2 g/L, at least

1.4 g/L, at least 1.6 g/L, at least 1.8 g/L, at least 2 g/L, at least 2.2 g/L, at least 2.4 g/L, or at least 2.5 g/L compared to a similar production method in a cell culture medium that contains less than 0.1 mM taurine.

30. The method of claim 27, wherein the production method is capable of increasing protein yield by about 3% to about 8% or greater compared to a similar production method in a cell culture medium that contains less than 0.1 mM taurine.

31. A CHO cell culture medium for high-yield recombinant production of antibody comprising about 0.1 mM to about 10 mM L-taurine and about 0.09 mM to about 0.9 mM ornithine.

32. The CHO cell culture medium of claim 56 further comprising ornithine.

33. The CHO cell culture medium of claim 31 further comprising putrescine.

34. The CHO cell culture medium of any one of claims 31-33, 56, or 57 further comprising a mixture of amino acids selected from the group consisting of arginine, histidine, lysine, aspartic acid, glutamic acid, serine, threonine, asparagine, glutamine, cysteine, glycine, proline, alanine, valine, isoleucine, leucine, methionine, phenylalanine, tyrosine, and tryptophan.

35. The CHO cell culture medium of claims 31, 56, or 57 wherein the medium is either serum-free, hydrolysate-free or chemically defined.

36. The CHO cell culture medium of claims 31, 56, or 57 wherein a feed is provided to the production batch culture at day 0, day 1, day 2, day 3, day 4, day 5, day 6, day 7, day 8, day 9, and/or day 10.

37. The CHO cell culture feed of claim 36, wherein the medium and feed provided to the production batch culture comprises about 5 mM to about 10 mM L-taurine total during the production phase.

38. The CHO cell culture medium of claims 31, 56 or 57 further comprises one or more fatty acids.

39. The CHO cell culture medium of claim 38, wherein the one or more fatty acids are selected from the group consisting of linoleic acid, linolenic acid, thioctic acid, oleic acid, palmitic acid, stearic acid, arachidic acid, arachidonic acid, lauric acid, behenic acid, decanoic acid, dodecanoic acid, hexanoic acid, lignoceric acid, myristic acid, and octanoic acid.

40. The CHO cell culture medium of claims 31, 56, or 57 further comprising vitamins and cofactors selected from the group consisting of biotin, D-calcium pantothenate, choline chloride, folic acid, I-inositol, nicotinamide, pyridoxine HCl, riboflavin, thiamine.HCl, and vitamin B12.

41. The CHO cell culture medium of claims 31, 56, or 57 further comprising a mixture of nucleosides, wherein said nucleosides is selected from the group consisting of adenosine, guanosine, cytidine, uridine, thymidine, and hypoxanthine.

42. The CHO cell culture medium of claims 31, 56, or 57 further comprising one or more divalent cations.

43. The CHO cell culture medium of claim 42, wherein the divalent cation is magnesium, calcium, or both.

44. A fed-batch medium and/or feed for protein production in CHO cell culture, comprising taurine in an amount of about 0.1 mM to about 10 mM and ornithine in an amount of about 0.09 mM to about 0.9 mM.

45. The fed-batch medium and/or feed of claim 58 further comprising ornithine.

46. The fed-batch medium and/or of claim 44 further comprising putrescine.

47. The fed-batch medium and/or feed of any one of claims 44-46, 58, or 59 further comprising a mixture of amino acids selected from the group consisting of arginine, histidine, lysine, aspartic acid, glutamic acid, serine, threonine, asparagine, glutamine, cysteine, glycine, proline, alanine, valine, isoleucine, leucine, methionine, phenylalanine, tyrosine, and tryptophan.

48. A method for culturing recombinant eukaryotic cells for improved recombinant protein production, comprising the steps of: (a) propagating or maintaining cells in a defined cell culture medium during growth phase, (b) supplementing the base cell culture medium with about 0.1 mM to about 10 mM L-taurine and about 0.20 mM to about 0.714 mM putrescine and expressing a recombinant protein of interest during production phase, and (c) increasing titer of the protein of interest by the addition of taurine.

49. A method for culturing recombinant eukaryotic cells for improved recombinant protein production, comprising the steps of: (a) propagating or maintaining cells in a defined cell culture medium during growth phase, (b) supplementing the base cell culture medium with about 0.1 mM to about 10 mM L-taurine, about 0.09 mM to about 0.9 mM ornithine, and about 0.20 mM to about 0.714 mM putrescine and expressing a recombinant protein of interest during production phase, and (c) increasing titer of the protein of interest by the addition of taurine.

50. A method for producing a recombinant protein of interest comprising the steps of:
    (a) introducing into a cell or cells a nucleic acid comprising a nucleotide sequence encoding a protein of interest;
    (b) selecting the cell(s) expressing the protein of interest;
    (c) culturing the selected cell(s) in a cell culture medium comprising about 0.1 mM to about 10 mM L-taurine and about 0.20 mM to about 0.714 mM putrescine; and

(d) producing the protein of interest in the cell, wherein the protein of interest is secreted into the medium.

51. A method for producing a recombinant protein of interest comprising the steps of:
    (a) introducing into a cell or cells a nucleic acid comprising a nucleotide sequence encoding a protein of interest;
    (b) selecting the cell(s) expressing the protein of interest;
    (c) culturing the selected cell(s) in a cell culture medium comprising about 0.1 mM to about 10 mM L-taurine, about 0.09 mM to about 0.9 mM ornithine, and about 0.20 mM to about 0.714 mM putrescine; and
    (d) producing the protein of interest in the cell, wherein the protein of interest is secreted into the medium.

52. A method for producing a protein of interest in a taurine-supplemented culture medium, comprising the steps of:
    (a) introducing into a cell a nucleic acid comprising a sequence encoding a protein of interest;
    (b) selecting a cell or cells expressing the protein of interest;
    (c) culturing the selected cell(s) in a cell culture medium;
    (d) supplementing the cell culture medium with taurine in an amount of about 0.1 mM to about 10 mM and putrescine in an amount of about 0.20 mM to about 0.714 mM;
    (e) maintaining the cell culture under taurine supplementation conditions of (d) for at least 6 days to express a higher titer of protein of interest in the cell(s) compared to cell(s) cultured in non-taurine supplemented culture, wherein the protein of interest is secreted into the medium; and
    (f) harvesting the protein of interest.

53. A method for producing a protein of interest in a taurine-supplemented culture medium, comprising the steps of:
    (a) introducing into a cell a nucleic acid comprising a sequence encoding a protein of interest;
    (b) selecting a cell or cells expressing the protein of interest;
    (c) culturing the selected cell(s) in a cell culture medium;

(d) supplementing the cell culture medium with taurine in an amount of about 0.1 mM to about 10 mM, ornithine in an amount of about 0.09 mM to about 0.9 mM, and putrescine in an amount of about 0.20 mM to about 0.714 mM;

(e) maintaining the cell culture under taurine supplementation conditions of (d) for at least 6 days to express a higher titer of protein of interest in the cell(s) compared to cell(s) cultured in non-taurine supplemented culture, wherein the protein of interest is secreted into the medium; and

(f) harvesting the protein of interest.

54. A method for producing a recombinant protein of interest in high yield comprising culturing a recombinant cell line in a cell culture medium comprising at least about 0.1 mM L-taurine and at least about 0.20 mM putrescine, wherein the cell line comprises a stably integrated nucleic acid encoding the recombinant protein.

55. A method for producing a recombinant protein of interest in high yield comprising culturing a recombinant cell line in a cell culture medium comprising at least about 0.1 mM L-taurine, at least about 0.09 mM ornithine, and at least about 0.20 mM putrescine, wherein the cell line comprises a stably integrated nucleic acid encoding the recombinant protein.

56. A CHO cell culture medium for high-yield recombinant production of antibody comprising about 0.1 mM to about 10 mM L-taurine and about 0.20 mM to about 0.714 mM putrescine.

57. A CHO cell culture medium for high-yield recombinant production of antibody comprising about 0.1 mM to about 10 mM L-taurine, about 0.09 mM to about 0.9 mM ornithine, and about 0.20 mM to about 0.714 mM putrescine.

58. A fed-batch medium and/or feed for protein production in CHO cell culture, comprising taurine in an amount of about 0.1 mM to about 10 mM and putrescine in an amount of about 0.20 mM to about 0.714 mM.

59. A fed-batch medium and/or feed for protein production in CHO cell culture, comprising taurine in an amount of about 0.1 mM to about 10 mM, ornithine in an amount of

about 0.09 mM to about 0.9 mM, and putrescine in an amount of about 0.20 mM to about 0.714 mM.