**Claims**

1. A serum-free mammalian cell culture medium comprising maltose as sole carbohydrate source, wherein the mammalian cell line can be propagated.

2. A serum-free mammalian cell culture medium comprising maltose and at least one additional saccharide as carbohydrate sources, wherein culture viability of the mammalian cell culture can be sustained when the additional saccharide is limiting, wherein protein yield of the mammalian cell culture is improved.

3. A serum-free mammalian cell culture medium comprising maltose as sole carbohydrate source, wherein protein yield of a mammalian cell is increased when cultured in the serum-free mammalian cell culture medium.

4. A serum-free mammalian cell culture medium comprising maltose and at least one additional saccharide as carbohydrate sources, wherein the serum-free mammalian cell culture medium comprises Dulbecco's minimum essential medium (DMEM), F-12 basal medium (DMEM-F12), L-glutamine, a non-ionic surfactant, geneticin, maltose and glucose, or a modified version thereof, wherein protein yield of a mammalian cell is increased when cultured in the serum-free mammalian cell culture medium.

5. The serum-free cell culture medium of claim 2 or 4, wherein the saccharide is a monosaccharide.

6. The serum-free cell culture medium of claim 5, wherein the monosaccharide is selected from the group consisting of glucose and mannose.

7. The serum-free cell culture medium of any one of claims 2, 4 to 6, comprising maltose and glucose as sole carbohydrate sources.

8. The serum-free cell culture medium of claim 2 or 4, wherein the saccharide is a polysaccharide.

9. The serum-free cell culture medium of claim 2 or 4, wherein the saccharide is a glucan or a disaccharide.

10. The serum-free cell culture medium of claim 9, wherein the glucan is selected from the group consisting of cellobiose, kojibiose, nigerose, isomaltose, β,β-trehalose, α,β-trehalose, sophorose, laminaribiose, gentiobiose, dextran, glycogen, pullulan, starch, cellulose, chrysolaminarin, curdlan, laminarin, lentinan, lichenin, oat beta-glucan, pleuran, zymosan and combinations thereof.

11. The serum-free cell culture medium of claim 9, wherein the disaccharide is selected from the group consisting of cellobiose, chitobiose, kojibiose, nigerose, isomaltose, β,β-

trehalose, α,β-trehalose, sophorose, laminaribiose, gentiobiose, turanose, maltulose, palatinose, gentiobiulose, mannobiose, melibiose, melibiulose, rutinose, rutinulose, xylobiose and combinations thereof.

12. The serum-free cell culture medium of any one of the preceding claims, wherein the serum-free cell culture medium is protein-free.

13. The serum-free cell culture medium of any one of the preceding claims, wherein the serum-free cell culture medium is a chemically defined medium.

14. The serum-free cell culture medium of any one of the preceding claims, wherein the serum-free cell culture medium is a protein-free chemically defined medium (PFCDM).

15. The serum-free cell culture medium according to any one of the preceding claims, wherein the cell culture medium is further combined with a hydrolysate, an enzymatic digest or yeast cell extract.

16. The serum-free cell culture medium according to any one of the preceding claims, wherein the cell culture medium is further combined with an ionic surfactant or a non-ionic surfactant.

17. The serum-free cell culture medium according to any one of the preceding claims, wherein the cell culture medium further comprises an antibiotic agent.

18. The serum-free cell culture medium of any one of the preceding claims, wherein each ingredient is present in an amount which supports the cultivation of a cell *in vitro*.

19. The serum-free cell culture medium of claims 2 or 4, wherein said at least one saccharide is present at a concentration of between 0.5 g/litre to 40 g/litre.

20. The serum-free cell culture medium of any one of claims 1 to 4, wherein maltose is present at a concentration of between 0.5 g/litre to 40 g/litre.

21. The serum-free cell culture medium of claim 1 or 3, wherein the serum-free cell culture medium comprises Dulbecco's minimum essential medium (DMEM), F-12 basal medium (DMEM-F12), L-glutamine, a non-ionic surfactant, geneticin and maltose, or a modified version thereof.

22. The serum-free cell culture medium according to claim 2, wherein the serum-free cell culture medium comprises Dulbecco's minimum essential medium (DMEM), F-12 basal medium (DMEM-F12), L-glutamine, a non-ionic surfactant, geneticin, maltose and glucose, or a modified version thereof.

23. The serum-free cell culture medium of any one of the preceding claims, wherein the

serum-free cell culture medium is in powdered or liquid form.

24. The serum-free cell culture medium of claim 2 or 4, wherein the cell is able to metabolize maltose without requiring prior adaptation.

25. The serum-free cell culture medium of any one of the preceding claims, wherein the mammalian cell is selected from the group consisting of a human cell, a murine cell, a rat cell, a hamster cell, a rabbit cell, a dog cell, a monkey cell, a hybridoma cell, a CHO cell, a CHO-K1 cell, a CHO-DG44 cell, a CHO-S cell, a CHO-DXB11 cell, a CHO-GS cell, a BHK cell, NS0 cells, a COS cell, a VERO cell, a HeLa cell, a HEK293 cell, a PER-C6 cell, a K562 cell, a MOLT-4 cell, an M1 cell, an NS-1 cell, a COS-7 cell, an MDBK cell, an MDCK cell, an MRC-5 cell, a WI-38 cell, a WEHI cell, an SP2/0 cell, a CAP cell, a AGE1.HN cell, or a derivative thereof.

26. A method of growing and/or culturing a cell, wherein the method comprises growing and/or culturing a cell in the serum-free cell culture medium according to any one of claims 1 to 25.

27. A method of growing and/or culturing a cell, wherein the method comprising growing and/or culturing a cell in the serum-free cell culture medium according to any one of claims 1 to 4.

28. The method according to claim 26, wherein the method comprising growing and/or culturing a cell in the serum-free cell culture medium according to claim 8 or 21.

29. The method according to claim 28, wherein the method improves protein yield.

30. A method of increasing protein yield, wherein the method comprises growing and/or culturing a cell in the serum-free cell culture medium according to any one of claims 1 to 25.

31. A method of modulating glycosylation profile of a protein, wherein the method comprises culturing a cell expressing the protein in the serum-free cell culture medium according to any one of claims 1 to 25, to thereby produce a cell that expresses the protein with the modulated glycosylation profile.

32. The method of claim 31, wherein the modulation of glycosylation profile is a modulation of at least one selected from the group consisting of an antennae, a fucosylation, a mannosylation, and a sialylation of the protein.

33. The method of any one of claims 30 to 32, wherein the serum-free cell culture medium is according to claim 8 or 21.

34. The method of claim 33, wherein the cell is an antibody-producing cell.

35. A kit comprising the components as described in any one of claims 1 to 25.

36. The serum-free cell culture medium of any one of claims 1 to 4, wherein the culture medium is used to propagate mammalian cells in a cell culture method selected from the group consisting of batch, fed-batch, continuous, and perfusion.

37. The serum-free cell culture medium of any one of claims 1 to 4, wherein the culture medium is used as a basal medium, a feed medium, and/or a perfusion medium.