~~**WHAT IS CLAIMED IS:**~~**Claims**

1. A cell culture medium supplement comprising at least one plant protein homologue of a serum protein~~.~~, wherein said supplement is devoid of any serum proteins.

2. The cell culture medium supplement of claim 1, wherein said supplement is essentially devoid of any animal serum ~~proteins~~-derived component.

3. The cell culture medium supplement of any one of claims 1 or 2~~, wherein said supplement is essentially devoid of any animal serum-derived component.~~

~~4. The cell culture medium supplement of any one of claims 1 to 3~~, wherein the at least one plant protein homologue comprises the water soluble fraction of a plant protein isolate~~.~~, wherein the water soluble fraction comprises plant albumins and globulins

~~5. The cell culture medium supplement of claim 4, wherein the water soluble fraction comprises plant albumins and globulins~~

~~6~~. The cell culture medium supplement of any one of claims 1 ~~to 3~~or 2, wherein said at least one plant protein homologue is a homologue of a serum albumin, a serum catalase, a serum superoxide dismutase, a serum transferrin, a serum fibronectin, a serum vitronectin, a serum insulin, a serum hemoglobin, a serum aldolase, a serum lipase, a serum transaminase, a serum aminotransferase, a serum fetuin, or a combination thereof.

~~7~~5. The cell culture medium supplement of claim ~~6~~4, wherein said at least one plant protein homologue is a plant albumin, a plant catalase, a plant superoxide dismutase, a plant transferrin, a plant fibronectin, a plant vitronectin, a plant insulin, a plant leghemoglobin, a plant aldolase, a plant lipase, a plant transaminase, a plant aminotransferase, a plant cystatin, or a combination thereof.

~~8~~6. The cell culture medium supplement of claim ~~7~~5, wherein the at least one plant protein homologue comprises a plant albumin, a plant catalase, a plant fibronectin, and a plant insulin.

~~9~~7. The cell culture medium supplement of claim ~~7~~5, wherein said at least one plant protein homologue is a plant albumin.

~~10~~8. The cell culture medium supplement of claim ~~8~~6 or ~~9~~7, wherein said plant albumin is a chickpea albumin, a hempseed albumin, a lentil albumin, a pea albumin, a soy albumin, a wheat albumin or a potato albumin.

~~11~~9. The cell culture medium supplement of claim ~~10, wherein said plant albumin is a pea albumin or a potato albumin.~~

~~12. The cell culture medium supplement of claim 9~~7, wherein said plant albumin is from the water soluble fraction of a plant protein isolate.

~~13~~10. The cell culture medium supplement of any one of claims ~~7~~5 to ~~12, wherein said plant albumin has a molecular weight of about 13-110 kilodalton.~~

~~14. The cell culture medium supplement of claim 13, wherein said plant albumin has a molecular weight of about 13-17 kilodalton.~~

~~15. The cell culture medium supplement of claim 13, wherein said plant albumin has a molecular weight of about 20-35 kilodalton.~~

~~16. The cell culture medium supplement of claim 13, wherein said plant albumin has a molecular weight of about 50-110 kilodalton.~~

~~17. The cell culture medium supplement of any one of claims 7 to 16~~8 or 9, wherein said plant albumin is present in the cell culture medium supplement at a concentration such that when

the cell culture medium supplement is added to a cell culture medium the plant albumin has a final concentration of about 0.01% to about 10% by weight in the cell culture medium.

~~18~~11. The cell culture medium supplement of claim ~~7~~5, wherein said at least one plant protein homologue is a plant catalase.

~~19~~12. The cell culture medium supplement of claim ~~8~~6 or ~~18~~11, wherein said plant catalase is an *Arabidopsis* catalase, a cabbage catalase, a cucumber catalase, a cotton catalase, a potato catalase, a pumpkin catalase, a spinach catalase, a sunflower catalase, a tobacco catalase or a tomato catalase.

~~20. The cell culture medium supplement of claim 19, wherein said plant catalase is a cabbage catalase, a cucumber catalase or a potato catalase.~~

~~21~~13. The cell culture medium supplement of any one of claims ~~18 to 20, wherein said plant catalase has a molecular weight of about 50-70 kilodaltons.~~

~~22. The cell culture medium supplement of any one of claims 18 to 21~~11 or 12, wherein said plant catalase is present in the cell culture medium supplement at a concentration such that when the cell culture medium supplement is added to a cell culture medium the plant catalase has a final concentration of about 1 ng/ml to about 100 ng/ml in the cell culture medium.

~~23~~14. The cell culture medium supplement of claim ~~7~~5, wherein said at least one plant protein homologue is a plant fibronectin.

~~24~~15. The cell culture medium supplement of claim ~~8~~6 or ~~23~~14, wherein said plant fibronectin is a bean fibronectin, a chickpea fibronectin, a lentil fibronectin, a rice fibronectin, a soy fibronectin, a tobacco fibronectin or a wheat fibronectin.

~~25. The cell culture medium supplement of claim 24, wherein said plant fibronectin is a chickpea fibronectin, a lentil fibronectin, a rice fibronectin, a soy fibronectin or a wheat fibronectin.~~

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16. The cell culture medium supplement of any one of claims ~~23~~14 to ~~25, wherein said plant fibronectin has a molecular weight of about 40-60 kilodaltons.~~

~~27. The cell culture medium supplement of any one of claims 23 to 26~~15, wherein said plant fibronectin is present in the cell culture medium supplement at a concentration such that when the cell culture medium supplement is added to a cell culture medium the plant fibronectin has a final concentration of about 0.1 µg/ml to about 100 µg/ml in the cell culture medium.

~~28~~17. The cell culture medium supplement of claim ~~7~~5, wherein said at least one plant protein homologue is a plant insulin.

~~29~~18. The cell culture medium supplement of claim ~~8~~6 or ~~28~~17, wherein said plant insulin is glucokinin, charantin, or corosolic acid.

~~30~~19. The cell culture medium supplement of claim ~~28~~17 or ~~29~~18, wherein said plant insulin is present in the cell culture medium supplement at a concentration such that when the cell culture medium supplement is added to a cell culture medium the plant insulin has a final concentration of about 0.05 µg/ml to about 10 µg/ml in the cell culture medium.

~~31. The cell culture medium supplement of any one of the preceding claims, wherein said at least one plant protein homologue is in the form of plant extract fractions or a pure form.~~

~~32~~20. A cell culture medium comprising a serum-free medium and the cell culture medium supplement according to any one of claims 1~~ to 31~~, 2, 3, 4-8, 9, 10-12, 13-15, or 16-19,

wherein said serum-free medium is essentially devoid of any animal serum-derived components.

~~33. The cell culture medium of claim 32, wherein said serum-free medium is a base physiological buffer.~~

~~34. A kit comprising the cell culture medium supplement of any one of claims 1 to 31 and instructions for mixing the cell culture medium supplement with a serum-free medium devoid of any animal serum-derived components.~~

~~35~~21. A method of producing cultured meat, comprising culturing cells in the cell culture medium of claim ~~32 or 33~~20, and producing meat from the cultured cells.

~~36~~22. The method of claim ~~35~~21, wherein said cells are from edible animals~~.~~

~~37. The method of claim 36~~, wherein the edible animal is livestock, game, poultry, fish, or crustacean.

~~38~~23. The method of any one of claims ~~35~~21 to ~~37~~22, wherein said cells are fibroblasts.

~~39~~24. The method of claim ~~38~~23, wherein said fibroblasts are bovine fibroblasts or chicken fibroblasts.

~~40~~25. Cultured meat produced by the method of any one of claims ~~35~~21 to ~~39~~24.

~~41. A method for producing a cell culture medium devoid of any animal proteins and/or components, comprising admixing a serum-free base medium and the cell culture medium supplement of any one of claims 1 to 31, wherein the serum-free base medium and cell culture medium supplement are each essentially devoid of any animal serum-derived components.~~

~~42. A cell culture medium produced by the method of claim 41.~~

~~43. Use of a plant protein homologue of an animal protein in place of the animal protein in a cell culture medium supplement.~~

~~44. The use of claim 43, wherein the animal protein is a serum protein.~~

~~45. The use of claim 43 or 44, wherein said supplement is essentially devoid of any animal serum-derived components.~~