CLAIMS

1. A nutritive food product comprising a cell biomass produced by a process for *in vitro* producing a nutritive food product for human or animal consumption comprising culturing an avian cell line in suspension, in which the avian cell line is (i) avian embryonic stem cells, (ii) capable of proliferating in a basal culture medium in the absence of exogenous growth factors, feeder cells and/or animal serum, and (iii) capable of growing continuously in suspension, further comprising a step of adding to the cell biomass one or more ingredient(s) increasing nutritional value of the food product selected from the group comprising vitamins, co-vitamins, minerals, essential amino acids, essential fatty acids, enzymes, antioxidants, flavourants, flavour aromatics and colorants.

2. A nutritive food product according to Claim 1, in which the avian cell line is obtained by the process comprising the steps:

(a) isolating avian embryonic stem cells from an embryo(s) at a developmental stage around oviposition;

(b) culturing the cells in a basal culture medium containing at least one exogenous growth factors SCF, IGF-1, bFGF, IL-6, IL-6R and/or CNTF, a layer of feeder cells and an animal serum for at least twenty passages;

(c) modifying the culture medium by progressive deprivation of the growth factors, feeder cells and animal serum and further culturing the cells for at least several passages; and

(d) adapting the cells of step (c) to suspension,

thereby obtaining the avian cell line capable of proliferating in a basal culture medium in the absence of exogenous growth factors, feeder cells and/or animal serum for at least 50 days.

3. A nutritive food product according to Claim 1, in which the avian cell line is obtained by the process comprising the steps:

(a) isolating the avian embryonic stem cells from an embryo(s) at a developmental stage around oviposition;

(b) culturing the cells in a basal culture medium containing the exogenous growth factor IGF-1 and CNTF, a layer of feeder cells and an animal serum for at least one passage;

(c) progressively withdrawing the growth factors from the culture of step (b) and further growing for at least one passage;

(d) progressively withdrawing the feeder cells from the culture of step (c) and further growing for at least one passage;

(e) progressively withdrawing the animal serum from the culture of step (d) and further growing for at least one passage; and

(f) adapting the cells of step (e) to suspension,

thereby obtaining a continuous avian cell line capable of proliferating in a basal medium in the absence of exogenous growth factors, feeder cells and/or animal serum.

4. A nutritive food product according to Claim 1, 2 or 3, in which the avian cell line is free of functional endogenous retroviral or other viral particles.

5. A nutritive food product according to any preceding claim, in which the avian cell line is chicken or duck embryonic stem cells.

6. A nutritive food product according to Claim 5, in which the chicken cell line is DL43 or DL46, and the duck cell line is EB24 or EB26.

7. A nutritive food product according to any preceding claim, in which the basal culture media are synthetic or chemically defined (CD) media, preferably additionally supplemented with one or more ingredient(s) selected from the group consisting of amino acids, nucleotides, vitamins, saccharides, fatty acids, beta-mercapto-ethanol, insulin, glycine, choline, pluronic acid F-68, sodium pyruvate and L-glutamine.

8. A nutritive food product according to any preceding claim, in which the cell line is cultured under fed-batch conditions.

9. A nutritive food product according to any of Claims 1 to 7, in which the cell line is cultured under perfusion conditions.

10. A nutritive food product according to any preceding claim, in which the cell line is cultured in a bioreactor with a volume equal or larger than 30 litres, 50 litres, 100 litres, 1000

litres, or 10,000 litres and in which the culturing temperature is around 37°C, pH 7.2, pO_2 50%, and the stirring speed is 40 rpm or higher.

11. A nutritive food product according to any preceding claim, in which the cell line is cultured until the cell density has reached 10^7 cells/mL or more, preferably 10^8 cells/mL or more.

12. A nutritive food product according to any preceding claim, in which the yield of the process is at least 0.5 to 1 g biomass per g medium.

13. A nutritive food product according to any preceding claim, further comprising a step of harvesting the cell biomass by sedimentation and decantation, in which cell sedimentation is performed by addition of a calcium salt to the cell suspension at a final concentration from 10 to 500 mg/L, preferably from 50 to 300 mg/L, more preferably 50 mg/L.

14. A nutritive food product according to any preceding claim, further comprising one or more food processing step(s) selected from cooling, freezing, solidifying, drying, pickling, boiling, cooking, baking, frying, smoking, 3D printing and packing.

15. A nutritive food product according to any preceding claim, further comprising other cells selected from the group consisting of non-human muscle cells, fat cells or cartilage cells, or their combinations, that are grown *in vitro* together with the avian cells or added after the avian cells harvesting.

16. A nutritive food product according to any preceding claim, in which the nutritive food product is processed to any of the consumption form selected from the group comprising paste, puree, soup, pie, powder, granules, chip, tablet, capsule, spread and sausage.

17. Use of a nutritive food product according to any preceding claim for human or animal consumption.

18. A nutritive food product produced by a process for *in vitro* producing a nutritive food product for human or animal consumption comprising culturing an avian cell line in suspension, in which the avian cell line is (i) avian embryonic stem cells, (ii) capable of proliferating in a basal culture medium in the absence of exogenous growth factors, feeder cells and/or animal serum, and (iii) capable of growing continuously in suspension, further comprising other cells selected from the group consisting of non-human muscle cells, fat cells,

cartilage cells, or their combinations, that are grown *in vitro* together with the avian cells or added after the avian cells harvesting.

19. Use of a nutritive food product comprising a cell biomass produced by a process for *in vitro* producing a nutritive food product for human or animal consumption comprising culturing an avian cell line in suspension, in which the avian cell line is (i) avian embryonic stem cells, (ii) capable of proliferating in a basal culture medium in the absence of exogenous growth factors, feeder cells and/or animal serum, and (iii) capable of growing continuously in suspension for human or animal consumption.