

PROCEDURES FOR OBTAINING CYANOBACTERIAL AND MICROALGAL BIOMASS – SOURCE OF MULTIFUNCTIONAL REMEDIES

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and cosmetics. Food bio – security

The procedures refer to biotechnology and bionanotechnology in particular to processes for biomass production and cultivation of cyanobacterium *Spirulina platensis* and microalga *Dunaliella salina* - sources of multifunctional remedies.

The first developed process consists in cultivation of cyanobacterium *Spirulina platensis* on a mineral nutrient medium containing, g/L: NaNO₃ – 2.25; NaHCO₃ – 8.0; NaCl – 1.0; K₂SO₄ – 0.3; Na₂HPO₄ – 0.2; MgSO₄·7H₂O – 0.2; CaCl₂ – 0.024; FeSO₄ – 0.01; EDTA – 0.08; H₃BO₃ – 0.00286; MnCl₂·4H₂O – 0.00181; ZnSO₄·7H₂O – 0.00022; CuSO₄·5H₂O – 0.00008; MoO₃ – 0.000015, **water-soluble silver nanoparticles with a size of 5 nm in a concentration of 0.0035...0.0038 g/L** and water up to 1 L, at a temperature of 25...28 °C, pH 8.0...10.0, with continuous illumination of 3000...4000 lx for 5 days.

The second process for cultivation of *Spirulina platensis* provides for cyanobacterium cultivation on a mineral nutrient medium containing, g / L: NaNO₃ – 2.25; NaHCO₃ – 8.0; NaCl – 1.0; K₂SO₄ – 0.3; Na₂HPO₄ – 0.2; MgSO₄·7H₂O – 0.2; CaCl₂ – 0.024; FeSO₄ – 0.01; EDTA – 0.08; H₃BO₃ – 0.00286; MnCl₂·4H₂O – 0.00181; ZnSO₄·7H₂O – 0.00022; CuSO₄·5H₂O – 0.00008; MoO₃ – 0.000015, water-soluble gold nanoparticles with a size of **5 nm** in a concentration of **0.0088...0.0091 g/L** and water up to 1 L, at a temperature of 25...28 °C, pH 8.0...10.0, with continuous illumination of 3000...4000 lx for 5 days.

The result of cyanobacterium *Spirulina platensis* cultivation consists in increasing the production of spirulina biomass and the content of lipids in spirulina biomass in order to obtain raw material for the development and production of anticancer, immunostimulating and antioxidant agents.

The process for cultivation of microalga *Dunaliella salina* CNMN-AV-01 comprises its cultivation on a mineral nutrient medium containing, g / L: NaCl – 120.0, NaHCO₃ – 4.2, MgSO₄ – 0.6, KNO₃ – 0.5, FeCl₃ – 0.0002, CaCl₂ – 0.033, KHPO₄ – 0.0272, EDTA – 0.0087, **silver nanoparticles with a size of 5 nm – 0.0005...0.00055**, at a temperature of 25...28 °C, pH 8.0 and constant illumination of 3000...4000 lx, for 8 days.

The result of the procedure application consists in increasing the yield of *Dunaliella salina* CNMN-AV-01 biomass and the content of lipids into biomass in order to obtain raw material for the development and production of liposoluble remedies.