

Title	Technology for cultivation of marine red microalga <i>Porphyridium cruentum</i>
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Description	<p>The invention refers to microalgae biotechnology and bionanotechnology, namely to a technology for cultivation of marine red microalga <i>Porphyridium cruentum</i> of technological interest in order to obtain the high lipid content biomass.</p> <p><i>Porphyridium cruentum</i> is a marine red microalga known as a producer of lipids, in particular omega-3 polyunsaturated fatty acids which provide various biological properties. AuNPs are known for various medical applications (e.g., tumor therapy) and biological activities, as well as for their role as components in anti-aging cosmetics. More recently, AuNPs can be applied in the biotechnology and bionanotechnology of microalgae to stimulate the production of various biologically active molecules.</p> <p>The proposed technology for cultivation of microalga <i>Porphyridium cruentum</i> CNMN-AR-01 comprises its cultivation on a nutrient medium containing, g/L: KCl - 16.04; NaCl - 12.52; KNO₃ - 1.24; MgSO₄·7H₂O - 2.5; CaCl₂ - 0.118; K₂HPO₄·3H₂O - 0.5; KI 0.05; KBr - 0.05; 1 mL/L solution containing, mg/L: H₃BO₃ - 2.86; MnCl₂·4H₂O - 1.81; CuSO₄·5H₂O 0.08; MoO₃ 0.015, FeEDTA - 0.5 mL, Au 10 nm nanoparticles stabilized in citrate in a concentrations of 0.023 - 0.027nM, at a temperature of 25 - 28°C, pH 6.8 - 7.2, constant lighting of 50 - 57 μM photons/m²/s, for 14 days.</p> <p>The result of the invention consists in lipids biosynthesis increasing by 39%, and their accumulation in <i>Porphyridium</i></p>

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cruentum microalga biomass. Biomass obtained can be used for the development of new original remedies and active principles based on omega-3 microalgal lipids with antioxidant, anti-inflammatory, antiatherogenic and regenerative properties.