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The invention refers to biotechnology, namely to a process for cultivation of microalga *Porphyridium cruentum* in order to obtain the biomass with high lipid content.

The process for cultivation of microalga *Porphyridium cruentum* CNMN-AR-01 comprises cultivation on a nutrient medium containing, g/L: KCl 16.04; NaCl 12.52; KNO<sub>3</sub> 1.24; MgSO<sub>4</sub>·7H<sub>2</sub>O 2.5; CaCl<sub>2</sub> 0.118; K<sub>2</sub>HPO<sub>4</sub>·3H<sub>2</sub>O 0.5; KI 0.05; KBr 0.05; 1 mL/L solution containing, mg/L: H<sub>3</sub>BO<sub>3</sub> 2.86; MnCl<sub>2</sub>·4H<sub>2</sub>O 1.81; CuSO<sub>4</sub>·5H<sub>2</sub>O 0.08; MoO<sub>3</sub> 0.015, FeEDTA 0.5 mL, Au nanoparticles of 10 nm stabilized in citrate 0.023-0.027nM and distilled water the rest, at a temperature of 25-28°C, pH 6.8-7.2, constant lighting of 50-57 μM photons/m<sup>2</sup>/s, for 14 days.

The result of the invention consists in increasing the biosynthesis of lipids and their accumulation in the biomass of microalga *Porphyridium cruentum*.

Claims: 1