The invention refers to biotechnology, in particular to processes for obtaining *Spirulina platensis* biomass with an increased content of iron that may be used in the food, pharmaceutical industry and medicine.

The process for *Spirulina platensis* biomass obtaining includes preparation of the nutrient medium, containing, g/L of water: NaHCO₃ – 16,8; K₂HPO₄·3H₂O – 1,0; NaNO₃ – 2,5; NaCl – 1,0; K₂SO₄ – 1,0; CaCl₂·6H₂O – 0,04; MgSO₄·7H₂O – 0,20; H₃BO₃ – 0,00286; MnCl₂·4H₂O – 0,00181; ZnSO₄·7H₂O – 0,00022; CuSO₄·5H₂O – 0,00008; MoO₃ – 0,000015, inoculation of *Spirulina platensis* suspension in a quantity of 0,4 g/L and cultivation thereof during 6 days in the accumulation regime under the light of 3000...4800 lx, the temperature of 30...35 $^{\circ}$ C and pH of 9,5...10,0. Into the medium there is supplementary introduced the coordinative compound [Fe₂MgO(CCl₃COO)₆(THF)₃], in a concentration of 0,040...0,050 g/L by instalments, namely half in the first day of cultivation and half on the third day of cultivation.

Clams: 1