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10.

Title: THE PROCEDURE FOR CULTIVATION OF RHODOTORULA GRACILIS YEASTS

Patent/project number: Patent MD 4690/2018.07.31; Patent application No. a 2020 0013/2020.02.18

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Institution: Public Institution Institute of Microbiology and Biotechnology, Ministry of Education and Research of the Republic of Moldova

Category: R

Description: The invention relates to nanotechnologies and microbial biotechnologies, in particular to a process for stimulating the content of proteins and essential amino acids in the biomass of yeast *Rhodotorula gracilis* with high application potential in the food, pharmaceutical, cosmetic and animal husbandry industries. The process according to the invention includes culturing on YPD medium for 72 hours the yeast strain *Rhodotorula gracilis* CNMN-Y-30 with the addition of ZnO (<50 nm) nanoparticles in a concentration of 20-70 mg/L. The technical result of the invention is to increase the content of proteins by 23.1-34% and essential amino acids by 32-89% and reduction of cultivation time. The elaborate processes of cultivation of yeast *Rhodotorula gracilis* with the application of ZnO nanoparticles correspond to the world level of development of bionanotechnologies of strategic importance in creating efficient economies with practical applications in the country's industries.

State of development: The implementation of the process is carried out within the Institute of Microbiology and Biotechnology in laboratory of Soil Microbiology, Institute of Electronic Engineering and Nanotechnologies „D. Ghițu”, Republic of Moldova and PhD thesis