



PRODUCTION OF CAROTENOIDS BY *Rhodotorula glutinis* P4M422: INFLUENCE OF CARBON AND NITROGEN SOURCES

Victor Navarro¹, Ayerim Hernández¹, Lorenzo Pastrana² Julio Montanez¹ y Cristóbal Aguilar^{1*}

¹Food Research Dept, School of Chemistry, Universidad Autónoma de Coahuila. Saltillo Coahuila, C. P. 25280.

²Department of Analytical Chemistry and Food Science, University of Vigo, Ourense, Spain.

Email: cristobal.aguilar@uadec.edu.mx

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Carotenoids represent a group of valuable molecules for the pharmaceuticals, medicine, cosmetics, food and feed industries (1). Despite availability of a variety of natural and synthetic carotenoids, only a few have been commercially exploited, including β -carotene and lycopene (2). The growing scientific evidence about these carotenoid pigments may have potential benefits in human health has led to an increased commercial interest in the search for alternative natural sources (3). The objective of this research work was to find the carbon and nitrogen sources ideal for increased production of carotenoids by submerged fermentation. Glucose, sucrose, fructose, glycerol and maltose were analyzed as carbon source while urea, ammonium chloride, sodium nitrate, ammonium sulfate and malt extract were used as nitrogen sources. Fermentation was carried out in small reactors with 10 mL of culture medium with different carbon and nitrogen sources. The bioreactors were maintained in a rotating incubator at 30°C and 180 rpm for 72 h. Carotenoids extraction from yeast biomass was performed using dimethyl sulfoxide (DMSO) from cell wall disruption. Total carotenoids were quantified spectroscopically at 480 nm. Bioreactors with glucose as carbon source and different nitrogen source promoted a higher carotenoid production while the source of nitrogen did not influence the production of these compounds.

References

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