

Carotenoid Production by Lactoso-Negative Yeasts Co-Cultivated with Lactic Acid Bacteria in Whey Ultrafiltrate

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Two strains were selected – the lactoso-negative yeast *Rhodotorula rubra* GED2 and the homofermentative *Lactobacillus casei* subsp. *casei* Ha1 for co-cultivation in cheese whey ultrafiltrate (WU) and active synthesis of carotenoids. Under conditions of intensive aeration (1.0 l/l min, 220 rpm), a temperature of 30 °C, WU with 55.0 g lactose/l, initial pH = 5.5, the carotenoid content in the cells reached a maximum, when the growth of the cultures had come to an end, *i.e.* in the stationary phase of the yeast. The maxima for dry cell accumulation (27.0 g/l) and carotenoid formation (12.1 mg/l culture medium) did not coincide on the 5th and 6th day, respectively. A peculiarity of the carotenoid-synthesizing *Rh. rubra* GED2 strain, co-cultivated with *L. casei* Ha1, was the production of carotenoids with high β -carotene content (46.6% of total carotenoids) and 10.7% and 36.9% for torulene and torularhodin, respectively.

Key words: Carotenogenesis, Co-Cultivation, Whey