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**BIOSYNTHESIS OF BIOTIN AND SELENBIOTIN  
IN BIOTIN- INDEPENDENT *S. cerevisiae* STRAIN CULTIVATED  
IN MOLASSES MEDIUM**

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**Abstract**

Most of *Saccharomyces cerevisiae* strains are biotin auxotrophs, however prototrophic for biotin strains isolated from sake mashes are known. We are conducting research on enriching of yeast biomass with selenium.

The aim of this study was to investigate the influence of selenium on biotin and selenobiotin biosynthesis in biotin-independent *S. cerevisiae* yeast.

Molasses medium was supplemented with 0–1.8 mmol of Se/L. Shaken cultures of *S.cerevisiae* “Y” strain isolated from sake mash were kept for 48h. After biomass hydrolysis biotin and its derivatives were isolated with use of affinity chromatography and immobilized on avidin-coated matrix. Selenium was assayed with use of fluorometric method with 2,3-diaminonaphtalene.

Total biotin activity ranged from 25µg/g d.m. (for 1.8 mmol Se/L) to 30µg/g d.m. (for unsupplemented biomass). Selenium dosage resulted in formation of selenobiotin up to 6.8µg/g d.m. for supplementation with 0.9mmol Se/L. The results proved selenobiotin biosynthesis in biotin-independent *S.cerevisiae* strain.

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