

Optimization of Culture medium and Conditions for Lactosucrose Production by *Sterigmatomyces elviae* CBS 8119 Using Statistical Analysis

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Lactosucroses (4G- β -Galactosylsucrose) have attracted attention in response to an increasing demand for so-called health foods with functional properties such as calorie free, non-cariogenic, decreasing the total cholesterol and lipid in serum, the promotion of animal growth and improving the intestinal bifidobacterium. They are produced from sucrose and lactose by the action of β -fructofuranosidase (EC 3.2.1.26) producing from various microorganisms such as *Arthrobacter* sp, *Sporobolomyces* sp etc.

The objective of this study is to optimize the culture medium and conditions for the production of lactosucrose by *Sterigmatomyces elviae* mutants. And continuous production using whole cell enzyme immobilization was carried out with aim of obtaining a high productivity of lactosucrose.

Optimized media for the lactosucrose production using statistical experimental design and were determined to be 1.21 % sucrose, 0.98% yeast extract, 2.92% bactopectone and 0.536% ammonium sulfate. Then, the carbon source and ammonium sulfate have an important effect on the production of lactosucrose. The optimized culture conditions were determined to be 10% inoculum size, pH 6.5 and 50°C.