

## ISOLATION AND OPTIMIZATION OF CONSTITUTIVELY SYNTHESIZED INVERTASE, FROM *SACCHAROMYCES CEREVISIAE* MUTANT TYPE- 2 STRAIN

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### ABSTRACT

In fermentation technology, strain improvement of baker's yeast has traditionally relied on random mutagenesis, followed by screening for mutant exhibiting enhanced properties of interest. Such mutant organisms are useful in several industries. *Saccharomyces cerevisiae* can use sucrose as the sole source of both carbon and energy; hydrolysis of this sugar is catalyzed by the enzyme invertase is code by six *SUC1* to *SUC5* and *SUC7* un linked genes. The main objective of this work is to overcome the glucose repression of invertase by invertase constitutive mutants, and to optimize various parameters such as temperature, incubation time, and pH. This mutation may occur in any glucose repressible genes as a single or double mutation in repressor gene (s) which might cause constitutive synthesis of invertase. The maximum constitutive synthesis of invertase was obtained with aerobic conditions for growth, 2-5% of glucose concentration, pH 4-5 of medium, and incubation period at 30°C for 30 h using UV mutated type-2 strain. Using this mutant strain, natural substrates containing sucrose + glucose mixture can be used as raw materials, for the excess production of fermentation products.

**KEYWORDS:** Constitutive Synthesis, Invertase, Mutation, Optimization, *Saccharomyces cerevisiae*

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### Article History

**Received: 22 Jul 2017 | Revised: 06 Dec 2017 | Accepted: 14 Dec 2017**

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