

## Isolation and Screening of Fungal Strains for $\beta$ -Galactosidase Production

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**Abstract :** Enzymes are the biocatalysts which catalyze the biochemical processes and thus have a wide variety of applications in the industrial sector.  $\beta$ -Galactosidase (E.C. 3.2.1.23) also known as lactase, is one of the prime enzymes, which has significant potential in the dairy and food processing industries. It has the capability to catalyze both the hydrolytic reaction for the production of lactose hydrolyzed milk and transgalactosylation reaction for the synthesis of prebiotics such as lactulose and galactooligosaccharides. These prebiotics have various nutritional and technological benefits. Although, the enzyme is naturally present in almonds, peaches, apricots and other variety of fruits and animals, the extraction of enzyme from these sources increases the cost of enzyme. Therefore, focus has been shifted towards the production of low cost enzyme from the microorganisms such as bacteria, yeast and fungi. As compared to yeast and bacteria, fungal  $\beta$ -galactosidase is generally preferred as being extracellular and thermostable in nature. Keeping the above in view, the present study was carried out for the isolation of the  $\beta$ -galactosidase producing fungal strain from the food as well as the agricultural wastes. A total of more than 100 fungal cultures were examined for their potential in enzyme production. All the fungal strains were screened using X-gal and IPTG as inducers in the modified Czapek Dox Agar medium. Among the various isolated fungal strains, the strain exhibiting the highest enzyme activity was chosen for further phenotypic and genotypic characterization. The strain was identified as *Rhizomucor pusillus* on the basis of 5.8s RNA gene sequencing data.

**Keywords :** beta-galactosidase, enzyme, fungal, isolation

**Conference Title :** ICNNS 2016 : International Conference on Nutritional and Nutraceutical Sciences

**Conference Location :** Singapore, Singapore

**Conference Dates :** July 04-05, 2016