

## Studies on $\beta$ -Galactosidase production

**Pavani A**

CM College of Pharmacy, India

Lactose intolerance is a major problem in infants and elderly people in different countries of the world. On an average, about 70% of the world's population suffers from this problem, which signifies the importance of the enzyme  $\beta$ -galactosidase. Feeding lactose containing milk to lactose-intolerant children and adults suffering from protein-calorie malnutrition leads to severe tissue dehydration, diarrhoea and even death may result. Besides, lactose has a low solubility resulting in crystal formation at concentrations above 11 % (w/v), which prevents the use of concentrated whey syrups in many food processes.  $\beta$ -galactosidase ( $\beta$ -D-galactoside galactohydrolase, E.C. 3.2.1.23), most commonly known as lactase, is one of the most important enzymes used in food processing, which catalyses the hydrolysis of lactose to its constituents monosaccharides, glucose and galactose. The enzyme has been isolated and purified from a wide range of microorganisms. The most commonly used  $\beta$ -galactosidases are derived from bacteria, yeasts and fungal from terrestrial sources. The marine environment is an under explored, but potentially rich in microorganisms adapted to survival under extreme conditions of salinity, temperature and pressure. Consequently their metabolism is altered resulting in the production of a variety of novel bio-active compounds. So emphasis has been given to  $\beta$ -galactosidase production from marine fungi.  $\beta$ -galactosidase, not only hydrolyses lactose, but also catalyses the transgalactosylation reaction at high lactose concentration leading to formation of Galacto-oligosaccharides, which is a prebiotic. Prebiotics have been described as non-digestible food ingredients that beneficially affect the host by selectively stimulating the growth and/or activity of one or limited number of bacteria in colon, thereby improving the host health.  $\beta$ -galactosidase, can be produced at acceptable rates by growing fungi, harvesting the resulting mycelium and extracting the enzyme or an enzyme rich fraction from the harvested mycelium.  $\beta$ -galactosidase activity at different stages of the growth of micro-organism was studied. It was observed that  $\beta$ -galactosidase activity did not show the same pattern as growth. Therefore, it is important to find out the fermentation profile of the organism.

### Biography

Pavani Anumukonda has completed her PhD from Andhra University and presently working as a Principal at CM College of Pharmacy. She has total 18 years of experience from Pharmacist to Principal. She stated her career as a Pharmacist, then move on to teaching and then research, finally back to teaching. She has five years of industrial experience with Alkem Labs and eLquest pvt ltd. She worked as a Professor in NCRD Sterling Institute of Pharmacy, Mumbai. She had published nine research papers in national and international journals and serving as peer reviewer for world journal of biotechnology. She presented several papers in various national and international conferences and visited countries like U.K and Singapore. She attended several Faculty development programmes and Short term training programmes and Quality improvement programmes etc. She got Dr Sethi best research paper publication award.

pavani71@gmail.com