

ABSTRACT

The present work is concerned with the production of enzyme β -galactosidase by *Kluyveromyces fragilis* IIB-665 in shake flasks. The enzyme finds industrial applications for the manufacture of lactose free milk. That is lactose in milk is hydrolysed by the enzyme to glucose and galactose. The culture media were screened for the maximum production of enzyme β -galactosidase. The medium M3 consisting of (% w/v) lactose (2.0), yeast extract (0.3), malt extract (0.3) and peptone (0.5) was selected for enzyme synthesis. The enzyme was intracellular and it was extracted by sonication for analysis and characterization. The yeast cell mass was separated by centrifugation at 5000 rpm for further treatment and analysis. The parameters such as inoculum media, initial pH, volume of the fermentation medium, size and age of inoculum, carbon and nitrogen sources were optimized in shake flask. The maximum enzyme production was 32.2 μ M/ml after 48 hours of incubation. Attempts were also made to standardize the conditions for the extraction of enzyme by sonication. Qualitative test using thin layer chromatography (TLC) was also used for observing the hydrolysis of lactose to glucose and galactose.