



ABSTRACT

This study aims at the production of β galactosidase enzyme from *Lactobacillus delbruekii subsp. bulgaricus* isolated from yogurt and soil samples. Biochemical characterization and 16s rRNA sequencing was used for the confirmation of the bacterial strains. The optimization of the production medium and characterization of enzyme were also carried out for the maximum production of the enzyme. The effect of the temperature, pH and incubation time was optimized. Maximum enzyme production was obtained after 48 hours of incubation at temperature 40-45°C at pH 6.0-7.0. The effect of various carbon (corn flour, wheat flour, rice flour) and nitrogen sources (Tryptone, Peptone, Yeast extract) for the production of β galactosidase enzyme by this microorganism was evaluated. The enzyme showed highest production in the presence of rice flour and yeast extract. The enzyme activity of all the strains were maximum at 40°C and pH at 7.0. The enzyme showed maximum activity of 87.88 U/mg. These strains can further be used for enzyme production at commercial level. As this enzyme has capability of converting lactose into simple sugar, so its industrial production should be focused.