ABSTRACT

The present study is concerned with the optimization of cultural conditions for the production, purification and stability of thermophilic alpha-amylase by mutant strain of *Bacillus licheniformis* GCUM-30 The fermentation was carried out in 250ml Erlenmeyer flask and 7.5L glass fermentor. The production of enzyme was obtained maximum (72 U/ml/min and 92 U/ml/min) when the fermentation medium was incubated for 48h and 36h in shake flask and stirred fermentor, respectively. Among different temperature and pH evaluated, pH 7.5 and 40 °C was found to be best for the production of alpha amylase both in shake flask as well as in stirred fermentor. The optimum level of $CaCl_2$ was found to be 0.2M (81U/ml/min). The alpha amylase was found to be highly stable at wide range of temperature (73 U/ml/min /) and pH (75 U/ml/min). The crude alpha amylase was partially purified by $(NH_4)_2SO_4$, acetone and ethyl alcohol (C_2H_5OH) precipitates. Among them ammonium sulphate was found to be best for maximum precipitation of alpha amylase.