



## ABSTRACT

Present study was aimed to enhance the production of thermostable endoglucanase, employing various cultivation and induction strategies at lab scale. Genetically modified *E.coli* contained gene for endoglucanase from *Thermotoga petrophila* was used in this study. Endo-1, 4- $\beta$ -glucanase production was enhanced by 7.03 folds from an initial value of 2.17 U/ml/min ( $p < 0.05$ ) to 15.26 U/ml/min ( $p < 0.05$ ) after optimization of process parameters. Maximum enzyme production was achieved extracellularly, after 72 hours of incubation at 37°C and 150 rpm, when 1.5% inoculum was added to 3xZYBM9 media of pH 6.5, induced with lactose at a concentration of 150mM, when heat shock treatment was given before induction. Fermentation kinetics also validated the results, with maximum value of product yield coefficient and specific yield product coefficient i.e. 3.49U/ml/mg and 2.92/U/ml/h respectively, at these optimum conditions.