ABSTRACT

A highly thermostable Tnap_1565 gene encoding 2010bp was cloned and expressed in *E.coli* BL21(DE3), pET-21a (+) expression vector. Tnap-1565 gene expressed recombinant mannan endo 1, 4-beta-manosidase protein constituted molecular weight of 77 kDa, which was determined by SDS-PAGE analysis. The endo 1, 4-beta-manosidase enzyme specifically belongs to glycoside hydrolase family. Maximum enzyme activity was achieved at 60°C with a pH 6.5. At 0.5mM IPTG induction maximum enzyme activity was estimated by quantifying elevated amount of released reducing sugars from locust been gum, and showed higher enzymatic activity of 10 U/ml/min. Partial purification of recombinant endo 1,4-beta-manosidase enzyme was achieved by heat treatment method. Recombinant endo 1,4-beta-manosidase enzyme has tremendous applications in pulp paper industry along with xylanase for softening of papers, wood pulps bio bleaching , biofuels and bioethanol production.