

ABSTRACT

The thermophilic xylanase gene was isolated from *Anaerocellum thermophilum*. PCR was used for the amplification of gene using primers that were specific to gene. The size of the gene was 2 kb. The sample was run on SDS PAGE to check the expression of a gene. The band obtained on a gel was 72.3 kDa. The activity of enzyme was measured with 2% beechwood, birchwood xylan, 4% CMC, pNP- β -D-galactopyranoside, pNP- β -D-glucopyranoside. But the enzyme's specific activity against pNP- β -D-galactopyranoside was highest, 6792.4 U/mg. The gene was optimized at pH 6.0 and at 70 °C. Hence, it was confirmed by experimental methods that the enzyme was β galactosidase instead of reported thermophilic xylanase.