

ABSTRACT

The β -1,4 endoxylanase gene *Xyn B* was isolated from *Thermotoga petrophila* RKU-1 and cloned and expressed in *E. coli* BL21 Codon plus. The *Xyn* was purified to homogeneity by heat treatment, ammonium sulfate precipitation followed by cation exchange chromatography. The purified enzyme showed a single band on SDS-PAGE corresponding to molecular mass of 40.7 kDa. The estimated K_m and V_{max} values were 2.6 mg ml⁻¹ and 2500 μ mol/ml/min respectively. At 80 °C the enzyme was stable for 12 hours. Purified enzyme showed 1777 U/mg against birch wood xylan and 1096 U/mg against beech wood xylan at pH 6 at 100 °C. The enzyme also showed minute activity against carboxy methyl cellulose 30 U/mg and 0.8% β - Glucan Barley 10 U/mg but showed no activity against avicel, laminarin, starch and Wattmann filter paper. Because of its thermostability and resistance to heavy metal ions this thermostable xylanase is a potential candidate for several industrial applications.