ABSTRACT

The cloned gene of β-glucuronidase from *Thermotoga petrophila* was expressed under pET system in *E.coli* BL21 codon plus. The recombinant enzyme had a molecular mass of 65.6 KDa and p*I* 4.8. The enzyme was stable towards heat denaturation at 80°C. The recombinant β-glucuronidase was purified to homogeneity by a procedure involving lyophilization, heat treatment, ammonium sulfate fractionation, Res-phe hydrophobic interaction chromatography and Res-Q anion exchange chromatography. The optimal activity of recombinant β-glucuronidase was at 90 °C at pH 6.0. The enzymatic activity was performed by para-nitrophenyl β-D-glucuronide as substrate after each purification step. A purified band of recombinant protein was observed after SDS-PAGE analysis. The specific activity of purified enzyme, after purification steps, was 255000 U/mg with 53% yield and purification fold of 8.5.