ABSTRACT

The genomic DNA of *Geobacillus Sp.SBS-4S* was isolated and amplified by PCR using specific primers. Gene was ligated into the vector pTZ57R/T and transformed into of E. coli strain DH5α. Then gene was ligated in the expression vector pET21a (+). Recombinant xylanase enzyme was expressed and purified in *E.coli* BL21 codon plus. Sequence homology xylanase was closer to that of *Geobacillus stearothermophilus.* A prominent band of recombinant enzyme was observed on SDS-PAGE with a molecular weight of 32.0 KDa. The enzyme was partially purified by ammonium sulfate fractionation. The docking results showed that the xylotriose fitted well in the catalytic cleft of the enzyme model Beech wood xylan was used as a substrate to determine the enzyme activity. The optimal activity of recombinant xylanase was at 60 °C at pH 6.0. The specific activity of purified enzyme after ammonium sulfate precipitation was 10300 U/mg.