Abstract

The present study was carried out to produce esterase from *Aspergillus oryzae*. The growth conditions such as substrate, concentration of substrate, pH and incubation time were optimized for the optimal production of the esterase. Further temperature and concentration of substrate (ethyl acetate) of assay were optimized for the optimal production of the esterase. Varying fermentation parameters specifically carbon and nitrogen source, size of the inoculum, effects of different mineral salt solutions, level of MSS, inoculum type and size of inoculum were also studied. Produced esterase was then partially purified by ammonium sulphate precipitation, maximum activity was achieved at 80%, followed by dialysis. The purification fold was 1.305, with specific activity of 82.05 U/mg and the recovery was 288%. Molecular weight of the partially purified esterase, 53KDa, was determined by sodium dodecyl sulphate-polyacrlamide gel electrophoresis (SDS-PAGE). The enzyme was stable at 40°C at pH 5 for 1 hr. The enzyme activity increased up to 4 fold with Mg^{2+}. EDTA, 10% tween-80, SDS and DMSO are good inhibitors of esterase enzyme. As EDTA inhibits the activity up to 86%, it showed that esterase is a metalloenzyme.