



Abstract

Clostridium clariflavum is the thermophilic bacteria that secretes the enzyme exoglucanase or cellobiohydrolases. This is an extra cellular enzyme made of beta 1,4 glucanase units. The mode of action is like crawling on the cellulose molecule and producing the reducing ends. Cloning was done in DH5 alpha cells then its expression was obtained by cloning in the pET21a(+). Cells were then cloned in the BL21(DE3). The size of exoglucanase came out to be 2.2kb when visualized under gel electrophoresis and SDS PAGE showed the size of protein of 78kDa. The substrate used for evaluating the enzymatic activity was CMC. The optimum temperature found was 70° C and with pH value of 6.0. The effect of metal ions showed a positive effect on the activity of the exoglucanase that came out that the Ca⁺ ion increased the activity of exoglucanase. The specific activity was checked by the DNS method. The surfactant SDS and tween80 showed most effective activity on the exoglucanase. Purification was done by affinity chromatography and then its sequencing was done.