

Production, Partial Purification and Characterization of a Thermo Stable Protease from *Bacillus megaterium* – Tk1 & application of Protease in blood cloth destaining

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ABSTRACT

Screening and isolation of protease producing 3 strains of bacteria were carried out from soil samples collected from salt pond kelambakkam, Chennai. The isolates were positive on skim milk agar and thus are selected as protease producing strain. The organisms were tested for various biochemical tests, which lead to their identification as *Bacillus megaterium*, producing protease enzyme. These *Bacillus megaterium* could grow upto 48 degree C and pH range 8 .It was also optimized for carbon test and nitrogen test with optimal growth in sucrose and gelatin respectively. Enzyme production was carried in 1 litre of optimized media in the fermenter at 37 degree C for 48 hours at pH 8.0. Harvested protease product was then partially purified by dialysis, ammonium sulphate fractionation method. The protein was characterized using SDS-PAGE. This result showed that *Bacillus megaterium* TK1 thermostable protease. The enzyme had a capability to effectively hydrolysis protein, casein. This enzyme can be beneficial for industries, such as blood cloth destaining.