

Concomitant Production, Partial Purification and Characterization of a Serine Protease and a Proteolysis-Resistant Metallolipase from *Bacillus pumilus* SG2

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Our objective was to investigate the concomitant production of protease and lipase by a bacterial strain. A promising bacterial strain was isolated from a food-processing industrial effluent, which can produce both protease and lipase. The isolate was characterized by sequencing the 16S rRNA gene. The PCR amplified gene was subjected to analysis by BLAST to ascertain the genetic relatedness of the isolate, *Bacillus pumilus* SG2. The enzymes were produced and subjected to purification by ammonium sulfate precipitation and dialysis followed by gel filtration chromatography; twelve-fold purity was obtained. The lipase produced was found to be proteolysis-resistant. The partially purified enzymes were characterized for their optimum pH value, temperature, response to inhibitors, surfactants and oxidants. The relative molecular weights of protease and lipase were determined as 28 kDa and 40 kDa, respectively, by zymogram studies.

Key words: *Bacillus pumilus*, Lipase, Protease