Production of Thermostable α-Amylase Obtained from a Novel Bacillus vallismortis

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Aim of the study: In this study, a bacterium, which was isolated from hot-spring mud sample of Meyremderesi, Sirnak in Turkey, was used.

Material and Methods: The morphological, biochemical and 16s rDNA analysis of the isolated bacteria were experimented. Based on morphological, physiological and 16S ribosomal RNA sequencing, the isolate was closely related to Bacillus vallismortis. Influences of various parameters such as incubation time, temperature and pH, carbon and nitrogen sources, various metal ions, agriculture wates, NaCl concentration, different surfactants on α-amylase production were examined.

Results: The optimum incubation time, temperature and pH for production of α-amylase was found 36th, 35 °C and 7.0, respectively. When compared with control, the amylase production increased approximately 10% in presence of Mn(II) and Ca(II). On the other hand, amylase production rised up 8.2%and 12.4% with Triton-X100 and Tween 20, respectively.

Keywords: α-Amylase production, Bacillus vallismortis, surfactant, heavy metal