

Isolation of Thermophilic *Anoxybacillus kestanbolensis* SO-18 and its α -Amylase Production by Submerged Fermentation (SmF) and Characterization

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Aim of the study: A novel thermophilic bacteria was isolated from Omer thermal spring mud in Afyokarahisar, Turkey.

Material and Methods: The morphological, biochemical and its 16S rRNA gene sequencing were tested to characterization of isolate. The 16S rRNA gene sequence exhibited maximum identity 97% similarity with *Anoxybacillus kestanbolensis*SO-18 (Accession number: KJ434793).

Results: The impacts of various parameters such as incubation time, fermentation temperature and pH on α -amylase production were evaluated. The highest enzyme production (4218 U/mg) was found at 60 °C, pH 6.0 and 24th hour. In addition to these, different parameters such as temperature and temperature stability, pH and pH stability, detergents and metal ions on enzyme characterization were studied. The optimum temperature and pH on enzyme activity were found to be 80 °C and 6.0, respectively.

Keywords: *Anoxybacillus kestanbolensis*, 16S rRNA, α -amylase production, thermostable