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A Novel Extracellular Amylase from Bacillus sp. 111

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Bacillus sp. 111, which was isolated from Korean salt-fermented anchovy (anchovy-jeot), produced an extracellular amylase with a molecular mass of approximately 59,000. We purified the amylase easily by using starch adsorption technique. The analyses of the digestion products of substrates by thin layer chromatography and the N-terminal amino acid sequence from the purified protein revealed that the enzyme was a novel beta-amylase. That is, the enzyme could not hydrolyze maltose and alpha-cyclodextrine, and its N-terminal amino acid sequence up to residue 15 was A-V-N-G-Q-S-F-N-S-N-Y-K-T-Y-K-. The amylolytic activity of the purified enzyme on soluble starch was optimal at pH 7.5 and 50oC.

Keywords: Anchovy-jeot, Bacillus sp. 111, extracellular beta-amylase