

Submerged Fermentative production of L-Asparaginase Enzyme by *Asparagillus niger*

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Abstract:

Microbial L-asparaginase (ASNase) is an important anticancer agent that is used extensively worldwide. L-Asparaginase catalyzes the degradation of Asparagine, an essential amino acid for leukemic cells into ammonia and aspartic acid. In this study we are focused on Collection, isolation, screening, microbial identification, enzyme assay, Submerged fermentative production, partial purification and molecular weight determination of partially purified extracellular L-Asparaginase enzyme producing *Asparagillus niger* collected from onion peel. The fungal culture was isolated by standard tissue isolation technique. The screening process done by using potato dextrose broth supplemented with 0.3ml of 2.5% phenol red indicator at p^H 6.5 and L-asparagine as sole nitrogen source for microbial growth. Microbial identification by Lacto phenol cotton blue staining technique. Optimize the media with different nitrogen sources like Sodium nitrate, urea and yeast extract. Urea showing highest enzyme activity, used for Submerged fermentative production. Partial purification carried out in two steps Ammonium sulphate precipitation and dialysis. The dialyzed compound used for molecular weight determination by SDS PAGE technique and found to be 79 KDA.

Key Words:

L-asparaginase, *Asparagillus niger*, onion peel, potato dextrose broth, Partial purification and urea.