

ARGININE DECARBOXYLASE FROM THE PATHOGENIC FUNGI, *Colletotrichum gleosporoides* : PURIFICATION AND PROPERTIES

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ABSTRACT

Arginine decarboxylase, a polyamine biosynthetic enzyme, was isolated from a phytopathogenic fungi, *Colletotrichum gleosporoides*, which causes Anthracnose in wide range of plants in many parts of the world.

The enzyme was purified 25 fold with 16.7 % recovery by elution through Sepharose 4B gel column and DEAE Cellulose ion exchange column. As determined by Sepharose 4B gel chromatography, the native molecular mass of the purified enzyme was ~ 265 kDa. SDS-PAGE of the purified enzyme showed two bands around 65 kDa and ~25 kDa, suggesting that possibly this enzyme could be a hexamer of above two sub units. Optimum pH and temperature for the enzyme was 5.2 and 40 °C respectively. Beyond 50 °C enzyme activity slowly declined and was almost deactivated by 80 °C. Approximate K_m of the enzyme for the substrate arginine was 67mM.

Key words : Anthracnose, *Colletotrichum gleosporoides*, Arginine decarboxylase , Polyamine metabolism

INTRODUCTION

The disease Anthracnose which is caused by the species of the genus *Colletotrichum* is widespread in many parts of the world and has significantly affected the economy of many agricultural countries (Bailey & Jeger 1986).

These fungi attack a wide range of plants all over the world, particularly in the tropical areas and also in subtropical and temperate areas in significant levels. The damage caused by the disease is more severe on perennial crops and other cash crops including mango, banana, citrus, avocado, tomato, bean, chilies, onions, coffee, tea, rubber, tobacco, cashew, sugar cane, soy bean and cotton. The pathogen attacks several parts of the same plant at several stages, e.g., leaf, blossom and pre- and postharvest