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Ornithine decarboxylase from *Colletotrichum gloeosporioides*: its purification, properties and inhibitors

M K B.Weerasooriya* and T A N S Thambugala

Department of Chemistry, University of Kelaniya, Kelaniya.

Fungal polyamines play an indispensable role in controlling the growth and development of fungal cells. High levels of polyamines enhance cell growth where as low levels retard growth. Therefore, depleting polyamine levels by selective inhibition of polyamine biosynthesis by specific inhibitors will provide a key to controlling a variety of fungal diseases in plants. With this aim, Ornithine decarboxylase, a rate limiting enzyme of fungal polyamine biosynthesis, was isolated from the fungus *Colletotrichum gloeosporioides*, and purified by ammonium sulphate fractionation followed by DEAE cellulose and sepharose 4B gel filtration chromatography. The enzyme was purified 11.56 fold with 58 % recovery. The purity of the enzyme fraction was screened by SDS-PAGE. Two bands were seen at ~65kDa and ~ 25 kDa. The native molecular mass of the enzyme as determined by sepharose 4B gel filtration chromatography was ~ 130KDa. Kinetic studies of the enzyme reaction showed that enzyme exhibited higher activity in the range of 35-45 ℃ with a maximum at 40 ℃. Effect of pH on enzyme activity showed that the enzyme possesses high activity in the range of 4.8-5.4 with an optimum at pH 5.2. Inhibition studies with the enzyme showed that eugenol, linalool, α-pinene, geraniol , citral were not inhibitors. Cyclohexylamine, methyl isoleucine, methyl isothiourea and methyl hydrazine carboxylate act as inhibitors for the enzyme.

bandu@kln.ac.lk Tel: 0112914483