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BARBITURIC ACID METABOLISM IN
NOCARDIA CORALLINA

A thesis presented in partial fulfilment of the
requirements for the degree of M.Sc. in Biochemistry
at Massey University.

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ABSTRACT

Barbituric acid utilisation in Nocardia corallina has been investigated. The enzyme barbiturase was induced using barbituric acid as the sole carbon and nitrogen source and a study of the optimum conditions for isolation of the enzyme was undertaken. Although it proved to be somewhat unstable, a partial purification was achieved.

Studies of barbituric acid utilisation were undertaken and it was shown that both cell-free extracts and the partially-purified enzyme were capable of the formation of an activated form of malonic acid from barbituric acid. Activation could not be demonstrated using malonic acid as substrate.

It is suggested that the barbiturase activity observed in vitro, i.e. malonic acid formation, is an artifact of isolation and that in vivo barbituric acid is utilised via malonyl-CoA.

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