

Biodegradation 1991 vol.2 N2, pages 107-113

Cytochrome P-450-dependent catabolism of triethanolamine in *Rhodotorula mucilaginosa*

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Abstract

The yeast *Rhodotorula mucilaginosa* was able to grow in media containing triethanolamine or diethanolamine as the sole nitrogen source. During growth in the presence of triethanolamine, extracts of yeast cells contained increased levels of cytochrome P-450 dependent monooxygenase which catalyzed the oxidative N-dealkylation of aminoalcohols. Formation of diethanolamine, ethanolamine and glyoxylate from triethanolamine was demonstrated, and the identity of the products was verified by thin layer chromatography. These observations suggested the following scheme of triethanolamine catabolism: triethanolamine → diethanolamine + glycolaldehyde, diethanolamine → ethanolamine + glycolaldehyde, ethanolamine → NH₃ + glycolaldehyde → glycolate → glyoxylate → glycerate pathway. © 1991 Kluwer Academic Publishers.

<http://dx.doi.org/10.1007/BF00114600>

Keywords

cytochrome P-450, triethanolamine