

## ADDENDUM

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### CHOLESTEROL OXIDASES: PROPERTIES AND APPLICATIONS

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Current interest in cholesterol oxidases is reflected in the considerable number of publications which have come to the authors' attention since completion of a mini-review on the subject (*J. Steroid Biochem.* 7 (1976) 705-713). A brief survey of this later literature is given here: references are numbered consecutively with those of the mini-review.

The isolation and properties of  $3\beta$ -hydroxysteroid oxidases from *Streptomyces violascens* [86] and *S. griseocarneus* [87] have been described, and a further report of the substrate specificity of the enzyme from *Nocardia erythropolis* has been published [88]. Buckland *et al.*, have investigated the kinetics of cholesterol oxidase synthesis by *N. rhodocrous* [89].

Manual and automated determinations of serum cholesterol levels by means of cholesterol oxidase, in conjunction with colorimetric or fluorimetric methods are the subjects of numerous papers, and have, in many instances, been compared directly with established procedures [90-108]. Munster *et al.* [109] investigated the interference by other sterols in colorimetric cholesterol determinations. The enzyme has also been of use in the estimation of cholesterol in various serum lipoprotein fractions [110,111]. Further polarographic and enzyme thermistor methods of estimating serum cholesterol have been reported [112-116] and manual and automated enzymic procedures for determining both free and total sterol have been described [117-119].

As an extension of their earlier work Yamaguchi *et al.* have used the enzyme from *Brevibacterium sterolicum* in the quantitative analysis of  $3\alpha$ -hydroxy fractions and  $3\beta$ -hydroxy fractions of urinary 17-ketosteroids [120].

Non-clinical applications of cholesterol oxidases have included the estimation of egg cholesterol content [121], the convenient preparation of  $[4-^{14}\text{C}]-7\alpha$ -hydroxy-4-cholesten-3-one [122] and the analysis of the mixture of  $\Delta^5$ - and  $5\alpha$ -sterols from the sponge *Grantia compressa* [123]. A particularly interesting application has been reported in a study of the effects on ATPase activity of carrying out the enzymic oxidation of membrane cholesterol *in situ* [124].

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