difference in the rate of elimination of the metabolites. These findings will be discussed.

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The Conversion of *S-n*-Propyl-L-Cysteine into its Sulphoxide by Microsomal Preparations from Rat Liver

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The oxidation of thioethers to sulphoxides has been observed in biological systems (e.g. Salzman & Brodie, 1956; Burns *et al.* 1957). The sulphoxidation of 4,4'-diaminodiphenyl sulphide and chlorpromazine in the presence of guinea-pig liver microsomes was found to require NADPH and oxygen (Gillette & Kamm, 1960).

In the present work, microsomes were prepared from the livers of male Wistar albino rats (approx. 250g.) and were suspended in freshly oxygenated 0.25M-sucrose at a concentration of approx. 3mg. of N/ml. Incubations were performed in open flasks at 37° for 30min. with *S-n*-propyl-L-[³⁵S]-cysteine as substrate, EDTA (3mM) and either an NADPH-generating system (NADP⁺, glucose 6-phosphate and glucose 6-phosphate dehydrogenase) or NADH and CN⁻ (7.5mM). Samples of the reaction mixtures were pipetted directly on to Whatman no. 3 paper and were subjected to high-voltage electrophoresis at 100v/cm. in a formic acid-acetic acid mixture, pH 2.0. The electrophoretograms were scanned for radioactivity and the sulphoxide present was determined as a percentage of the total radioactivity measured on the scan.

The extent of conversion into sulphoxide was influenced by the concentrations of substrate and microsomal protein, but under comparable conditions, the following yields were obtained: with an NADPH-generating system, 160μmoles of sulphoxide/mg. of N/30min; with NADH-CN⁻, 340μmoles of sulphoxide/mg. of N/30min. The inclusion of CN⁻ (7.5mM) in the reaction mixture containing the NADPH-generating system gave a 50% increase in the yield of sulphoxide.

Sulphoxidation was not significantly inhibited by SKF 525A (0.4mM), sodium azide (3.0mM), 2,4-dichlorophenol (0.85mM) or *p*-chloromercuribenzoate (0.25mM), but 100% inhibition was observed with dimethyl-*p*-phenylenediamine (2.0mM) and 90% inhibition with CO.

Paper chromatography of the *S-n*-propyl-L-[³⁵S]-cysteine sulphoxide in butan-1-ol-water-acetic acid, (12:3:5, by vol.) showed that *S-n*-propyl-L-[³⁵S]cysteine (+)sulphoxide was the predominant diastereoisomer formed. This is consistent with the isolation of *S*-ethyl-L-cysteine (+)sulphoxide from the urine of rats dosed with bromoethane (Barnsley, Thomson & Young, 1964).

Evidence so far indicates that the present system that converts *S-n*-propyl-L-cysteine into its sulphoxide differs from the sulphoxidation system reported by Gillette & Kamm (1960). The possible roles of EDTA and the inhibitory effect of CO will be discussed.

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Genetic Variation of Cod and Coalfish Lactate Dehydrogenase

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Genetic variations (polymorphism) can be a useful tool in the study of the sub-unit composition of enzymes. This is particularly true when, as in the lactate dehydrogenase (LDH) of many fish species, a complex mixture of isoenzymes is present.

In cod (*Gadus morrhua*) a polymorphism of one LDH polypeptide can be demonstrated by starch-gel electrophoresis of tissue extracts from fish caught off the Atlantic coast of Canada (Odense, Leung & Allen, 1966) and also in fish caught within 40 miles of Aberdeen. The polymorphic polypeptide, which is abundant in the heart, is referred to as the H polypeptide and the corresponding genetic locus as *LDH_H*. The frequency of the more common allele in 184 of the Aberdeen cod was found to be 0.61. There was a slight but significant excess of homozygotes in this sample.

In coalfish (*Gadus virens*) obtained from fishing grounds off the west coast of Scotland, and also from Icelandic and Faroese waters, we have found a polymorphism of a different polypeptide, M, which occurs mainly in the skeletal muscle. The frequency