infected with herpes simplex virus requires prior transcription and translation and (iii), since the enzyme preparation from infected cells differs from that of the host cell, it could be a host isoenzyme, an enzyme programmed by the virus or a host enzyme modified by virus-specific protein that binds to the enzyme.

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Comparison of Uridine Diphosphate Glucuronyltransferase Activities Synthesizing S- and O- β -D-Glucuronides

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The extent of heterogeneity in UDP-glucuronyltransferase activities synthesizing various O- β -D-glucuronides is still uncertain (Dutton, 1971; Mulder, 1971; Howland *et al.*, 1971). This mechanism also forms S- β -D-glucuronides of diethyldithiocarbamic acid (Dutton & Illing, 1969), thiophenol (Illing & Dutton, 1970) and o-aminothiophenol and p-nitrothiophenol with concomitant production of UDP (G. J. Dutton & H. P. A. Illing, unpublished work). We now report some properties of this latter UDP-glucuronyltransferase activity ('S'-enzyme), principally towards aromatic thiol substrates, with some comparisons of activity ('O'-enzyme) towards phenolic analogues.

Both 'S'- and 'O'-enzymes occurred almost exclusively in microsomal fractions of the mammalian or avian liver, kidney cortex and stomach examined; pH optima were similar, although in liver that for p-nitrothiophenol was sharper than that for p-nitrophenol. With these two substrates, 'S'-enzyme was notably less activated than 'O'-enzyme on storage, or on treatment with detergents or UDP-N-acetylglucosamine.

Development of activities towards p-nitrophenol and p-nitrothiophenol in perinatal mice was almost identical, contrasting with differences observed between various phenolic substrates (Dutton, 1966). Both activities were induced precociously on culturing chick-embryo liver with or without phenobarbital (Dutton *et al.*, 1970), or on injecting eggs with phenobarbital; activity towards p-nitrothiophenol seemed to respond the more rapidly.

In liver microsomal preparations from both Wistar and Gunn rats activities towards p-nitrothiophenol and p-nitrophenol were similar; activities were not

increased by added diethylnitrosamine. Marked differences occurred between activities towards o-aminothiophenol and o-aminophenol. In liver microsomal preparation from Wistar rats activities towards o-aminophenol were lower than towards o-aminothiophenol; diethylnitrosamine raised the former, but not the latter, activity until both were approximately equal. In the preparation from Gunn rats activity towards o-aminophenol was virtually absent, whereas that towards o-aminothiophenol was near 'activated' values obtained with the preparation from Wistar rats; diethylnitrosamine again did not increase activity towards the thiol but raised the 'O'-enzyme activity (Stevenson *et al.*, 1968) to this high value. Gunn rats do not seem defective in UDP-glucuronyltransferase activity towards o-aminothiophenol, and in both rat strains this activity remains uninfluenced by diethylnitrosamine.

Differences therefore exist between 'S'- and 'O'-enzyme activities towards a given substrate in its aromatic thiol or phenolic forms; but these differences seem no greater, and are often less, than the differences existing between activities of the 'O'-enzyme towards various phenolic substrates.

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Desaturation of Stearate by Sheep Tissue Microsomal Preparations

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Cook & Reiser (1968) showed that, in mitochondria-free preparations of sheep adipose tissue the triglycerides of which contained 34% stearate, desaturase activity towards stearate was considerably less than that in the adipose tissue of the pig and the rat, the triglycerides of which contain considerably less stearate. However, the proportion of stearate in the triglycerides of individual adult sheep varies greatly between different bodily sites, ranging from less than 5% in the pinnae of the ears, through 10-20% in subcutaneous adipose tissue, to more than