mental iron deficiency anaemia in animals. Alterations in sensitivity to drug effect are consequently unlikely in anaemic patients. Presumably in anaemia the amount of liver cytochrome P_{450} is unchanged or at least not altered sufficiently to affect the overall rate of drug metabolism.

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Iminostilbene—a metabolite of carbamazepine isolated from rat urine

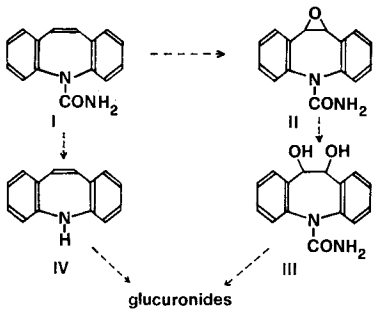
The metabolites of the anti-epileptic drug carbamazepine (I) that have been found so far in the urine of man and rat are carbamazepine-10, 11-epoxide (II) (Frigerio, Fanelli & others, 1972; Frigerio, Biandrate, & others, 1972) and 10,11-dihydro-10, 11-dihydroxy-5*H*-dibenz-[b,f]azepine-5-carboxamide (III) (Goenechea & Hecke-Seibicke, 1972; Baker, Csetenyi & others, 1972), the latter appearing also as its glucuronide. We now report the isolation of another metabolite, iminostilbene (IV) from the urine of rats.

Two male Sprague Dawley rats (200g) were injected intraperitoneally with a propylene glycol solution (0·5 ml) of 10,11-[$^{14}C_2$]carbamazepine diluted with cold carrier. The dose given was 10 mg kg^{-1} with a specific activity of 0·56 μCi mg^{-1}. 24 and 48 h later, the urine was collected, pooled, adjusted to pH 4, and extracted successively with 1,2-dichloroethane, ethyl acetate, and after incubation with Ketodase at pH 4·5, again extracted with ethyl acetate. Each of the extracts was evaporated under nitrogen at 60° and investigated by thin-layer chromatography (Woelm precoated plates, F256/366) in the solvent system benzene–ethanol–diethylamine (8:1:1). A non-polar radioactive peak was found at R_F 0·70 in both ethyl acetate extracts, but not the 1,2-dichloroethane extract, corresponding to the R_F of authentic iminostilbene (IV). The peak corresponded to about 2% of the excreted activity. The material was scraped from the plate, eluted with ethyl acetate, and investigated by direct injection mass spectrometry at a probe temperature of 70°. A mass spectrum with an intense molecular ion at *m/e* 193 and little further fragmentation was obtained, identical to the spectrum of authentic iminostilbene.

The iminostilbene was obtained in greatest quantity after incubation with Ketodase and hence is present in urine as the glucuronide. Glucuronides of amines are much more susceptible to acid hydrolysis than hydroxyl glucuronides, and the finding of iminostilbene in the ethyl acetate extract before Ketodase incubation could be accounted for by hydrolysis due to acidification of the urine before extraction. As a proof that iminostilbene did not arise through acid hydrolysis of carbamazepine, labelled 10,11-[$^{14}C_2$]carbamazepine was added to urine, incubated with Ketodase overnight at 37°, and subjected to the same extraction procedure as used before.

No hydrolysis of carbamazepine was found as a result of this treatment, therefore iminostilbene (IV) is a true metabolite of carbamazepine.

The presently known biodegradation pathway is thus:



Metabolic pathway of carbamazepine (I)

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Interaction between DDT and lecithin in spread monolayers

Some time ago, evidence of an interaction occurring between pp'DDT and dipalmitoyl lecithin, in organic solvents (chloroform and carbon tetrachloride), was obtained by proton magnetic resonance measurements (Tinsley, Haque & Schmedding, 1971). This finding was an interesting contribution to the study of the mode of action of DDT at the molecular level. Its significance, however, was restricted by the fact that, in biological systems, phospholipids are dispersed in aqueous media where they are oriented with respect to water in well-defined structures (Dervichian, 1964; Phillips, 1972). In view of those considerations, it was thought desirable to reconsider the DDT-lecithin interaction but, this time, in spread monolayers. Indeed, monomolecular films of lecithins closely parallel the physical state of those phospholipids in biological systems (Phillips, 1972) and they have been extensively used to study