

Thus the addition of sodium azide to the tetrazolium solution resulted in depression of the reduction of the dye. Typical results are indicated in Table 3, which presents

TABLE 3

EFFECT OF  $\text{NaN}_3$  ON REDUCTION OF TRIPHENYLTETRAZOLIUM CHLORIDE BY TISSUE SLICES

Tissue	$R_0^*$	% Change $10^{-3}\text{M}$	$\text{NaN}_3^\dagger$ $10^{-6}\text{M}$
Liver	44	-45	-11
Kidney	55	-36	-2

\*  $R_0$  = Colorimeter reading/mg tissue, dry wt, 30-min incubation.

† Sodium azide,  $0.5 \times 10^{-3}\text{M}$  and  $0.5 \times 10^{-6}\text{M}$  added to 3 ml of 1% tetraphenyltetrazolium solution.

the mean values for tissues from six animals, the experiments having been done in duplicate.

It appears from the data presented that triphenyltetrazolium chloride may be used in a simple and reproducible manner to study the metabolism of tissue slices and the effects of enzyme inhibitors.

#### References

1. KUN, E. and ABOOD, L. G. *Science*, 1949, **109**, 144.
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## Electrolytically Induced Reactions

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Recently two examples of a novel type of induced reaction have been observed in this laboratory. Both reactions are unique in being electrolytically induced. The first is the electrolytically induced air oxidation of trivalent arsenic,  $\text{As}^{\text{III}}$  in alkaline solution. It has been observed (1) that air oxidation of  $\text{As}^{\text{III}}$  in a solution 1N in sodium hydroxide is slight. But if electrolytic oxidation of the arsenic is carried on in the same solution, oxidation occurs up to 50% in excess of that corresponding to the current used. This excess oxidation is attributed to oxygen of the air, since it is entirely eliminated if the surrounding air is displaced with nitrogen. The electrolytic process, however, seems essential.

The second reaction is the electrolytically induced precipitation of iridium with rhodium. It was observed by MacNevin and Tuthill (2) that iridium could not be deposited from an ammonium chloride solution at cathode potentials as great as -1.0 volt. But if rhodium is also present, then not only does the rhodium precipitate quantitatively at a cathode potential of -0.3 volts, but the major part of the iridium does also.

These two reactions are considered to be examples of a new type of induced reaction and it is proposed to call them "electrolytically induced" reactions.

#### References

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2. MACNEVIN, W. M. and TUTHILL, S. M. *Anal. Chem.*, 1949, **21**, 1052.

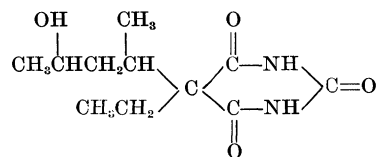
## The Isolation of a Metabolite of Pentobarbital<sup>1</sup>

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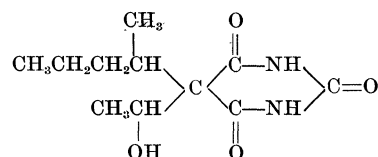
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There is general agreement that pentobarbital is excreted only in trace amounts in the urine (2, 6, 8, 9), but up to the present no metabolic products of the drug have been reported. It has now been found possible to isolate a metabolite of pentobarbital from the urine of dogs after anesthetic doses of the drug. The compound melts at 209–210° C and has an elementary composition corresponding to pentobarbital with one additional oxygen atom ( $\text{C}_{11}\text{H}_{18}\text{O}_4\text{N}_2$ ). In sodium hydroxide solution it has the characteristic ultraviolet absorption spectrum of the dialkylbarbituric acids (5). In the range of 225–290  $\mu$  the absorption curve has exactly the same shape as that of pentobarbital, but the extinction is about 7% lower. This would imply a molecular weight of about 242 for the new barbiturate. Further evidence for the barbituric acid ring was obtained by the preparation of a di-*p*-nitrobenzyl derivative (3).

The presence of a hydroxyl group was demonstrated by the reaction of the metabolite with acetic anhydride. A new compound was formed which crystallized from aqueous ethanol in the form of blunt needles; mp 147–148° C.



(I)



(II)

It had the elementary composition of the corresponding acetate ( $\text{C}_{18}\text{H}_{20}\text{O}_5\text{N}_2$ ). On treatment with sodium hypiodite in dioxane solution the metabolite yielded iodoform. It would thus appear that the compound could be either I or II. Structure II would not seem likely, however, because such a compound would probably react with sodium hypiodite to yield acetic acid, not iodoform.

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