contraction of 3 cm. The muscle responded within 10 to 15 sec of adding the 5-HT to the bath and reached maximum contraction in 45 sec; relaxation to the baseline occurred 1 min after 5-HT was washed out; another dose of 5-HT could be added after 2 min. The preparation attained maximum sensitivity after 10 to 12 additions of 5-HT and its response remained consistent for at least 3 hr. Methysergide (Sandoz) in a concentration of 10^{-7} g/ml completely abolished the response to 10^{-9} g/ml of 5-HT.

Doses and concentrations are in terms of base.

A tracing showing graded response by the rat stomach strip preparation with the above modifications to various doses of 5-HT is shown in Fig. 1. We have not been able to determine precisely the cause for this improvement. However, we would like to share this experience with others who may wish to make use of this preparation for the rapid assay of 5-HT.

Department of Pharmacology,
University of Singapore,
Singapore 3, Malaysia.
May 28, 1965

R. C. Y. LIN
T. S. YEOH

Reference

Vane, J. R. (1957). *Brit. J. Pharmacol.*, **12**, 344–349.

Autoxidation of linoleic acid

SIR,—Mehta (1962) has earlier reported on a possible mechanism for the "autoxidation of linoleic rich oils in emulsion". In that report the emulsions studied contained poppy seed oil, safflower oil, and methyl linoleate ester, and were prepared using acacia and tragacanth as emulsifying agents. The mechanism indicated that in the early stages of autoxidation oxygen appeared to add to the double bond to form cyclic peroxides, which were then converted to conjugated dienoic hydroperoxides. The amount of conjugated trienes was insignificant in the oils and ester from which the emulsions were prepared and in all the systems after preparation. The trienes did not develop to any significant extent even after 42 days of autoxidation. The samples were stored at 25° ± 2 in ground glass stoppered bottles. Conjugated dienes and trienes were estimated before and after isomerisation by the method of Hilditch (1951).

We have now examined pure linoleic acid*. The surfactant, Brij 35†, 5 g, was used to obtain a solubilised and an emulsion system, containing linoleic acid 1·07 g and 1·33 g respectively, with distilled water to 25 ml. Samples were stored as before.

In both systems, the amount of conjugated dienes reached a maximum value after about 10 days and then the dienes were further oxidised. E (1%, 1 cm) at 268 mμ for the unisomerised sample (corresponding to the conjugated trienes) was 6·16 for the linoleic acid. The occurrence of trienes corresponded to the disappearance of the dienes. After 20 days of autoxidation, E (1%, 1 cm) at 268 mμ was 17·15 and 14·92 for the emulsion and the solubilised system respectively. The formation of significant amounts of trienes was thus indicated. The 30 day values indicated that the trienes were further autoxidised.

Department of Pharmacy,
University of Illinois,
Chicago 12, Illinois, U.S.A.
May 24, 1965

SHASHI PAL MEHTA
BERNARD ECANOW

References

Hilditch, T. P., Patel, C. B. & Riley, J. P. (1951). *Analyst*, **76**, 81–87.
Mehta, S. (1962). Master of Pharmacy thesis, Banaras Hindu University, India.

* Linoleic acid, 99·5% pure, Nutritional Biochemicals Corporation, Cleveland.
† Brij 35, Atlas Chemical Industries, Inc., Wilmington, Delaware, U.S.A.

Inhibition of dopamine-β-oxidase by diethyldithiocarbamate

SIR,—Hydroxylation of dopamine to noradrenaline by dopamine-β-oxidase has been postulated by Goldstein & Contrera (1961) as the rate-limiting step in the biosynthesis of noradrenaline. If this hypothesis is correct, then the tissue levels of noradrenaline should decrease when this enzyme is inhibited. However, Nikodijevic, Creveling & Udenfriend (1963) using benzyloxyamine and benzylhydrazine analogues were unable to obtain significant decreases in the noradrenaline contents of guinea-pig tissues. More recently, Goldstein, Anagoste, Lauber & McKereghan (1964) found that diethyldithiocarbamate, a metabolite of disulphiram, was a potent inhibitor of dopamine-β-oxidase. In the present work we have shown that diethyldithiocarbamate markedly reduced the noradrenaline levels and simultaneously increased those of dopamine in the small intestine of both the rat and rabbit.

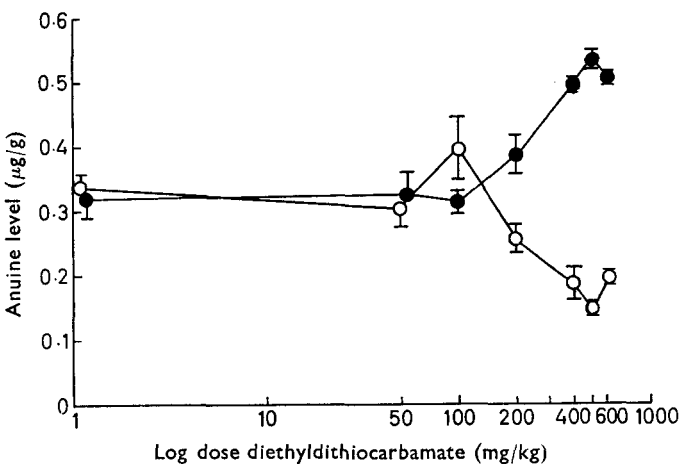

FIG. 1. The effect of different doses of the sodium salt of diethyldithiocarbamate (mg/kg), subcutaneously) on the noradrenaline (○——○) and dopamine (●——●) contents (μg/g ± s.e.) of rat ileum. Each point is the mean of 5 determinations.

The *in vivo* experiments were made by injecting groups of five rats subcutaneously with varying doses of the sodium salt of diethyldithiocarbamate and killing them at hourly intervals over 6 hr. Pieces of ileum were removed, washed, dried, weighed and stored at −4° until assayed for catecholamines. In other experiments, segments of cleaned ileum from untreated rats and rabbits were incubated at 33·5° in McEwen's Ringer solution containing the sodium salt of diethyldithiocarbamate (2×10^{-5}) and aerated with 95% oxygen and 5% carbon dioxide. Segments were removed at different times and treated as described above. The catecholamines (noradrenaline, adrenaline and dopamine) were extracted from tissues by the method used by Shore & Olin (1958). The