pharmacologic investigations, which are still in progress, revealed some differences between the effects of DA-lowering and DA-enhancing dithiocarbamates in pharmacological tests.

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Effect of tranquillizer drugs on liver tyrosine-α-ketoglutarate transaminase activity

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THE ACTION of reserpine and phenothiazine group of tranquillizers in animals is accompanied by adrenocortical hyperactivity.[1–6] It has been further demonstrated that some transaminases in the liver, *viz.* alanine-α-ketoglutarate transaminase,[7–10] tyrosine-α-ketoglutarate transaminase,[11–15] and tryptophan-α-ketoglutarate transaminase[16] are elevated by the release of ACTH or administration of corticosteroids. Therefore, it was thought of interest to study the effect of tranquillizer drugs on the liver transaminase system. This paper deals with the *in vivo* effect of reserpine and some well-known phenothiazine tranquillizers on the liver tyrosine-α-ketoglutarate transaminase (TKT) activity.

MATERIALS AND METHODS

Male albino rats weighing 120–140 g have been used. Drugs (10 mg/kg) or saline (control) were injected intraperitoneally. Rats were sacrificed at different time intervals. TKT activity was assayed in the liver homogenate by the method of Chan and Cohen.[17]

RESULTS AND DISCUSSION

In Fig. 1 is presented the effect of a single dose of reserpine and three phenothiazine tranquillizers on liver TKT. It is observed therein that amongst the phenothiazines used, prochlorperazine and trifluopromazine caused a maximum increase of the enzyme activity at 2 hr, while chlorpromazine at 6 hr following the injection, and the level of the enzyme returned to normal within 24 hr. But the maximum rise of TKT by reserpine was observed at 12 hr and the enzyme level was still high at 24 hr. Further results, not reported here, indicate that the enzyme activity is back to normal values after about 4 days.

In the present experiment the effect was studied at an equal dose level of the drugs and the results

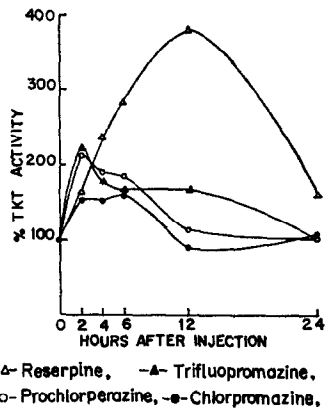

FIG. 1. The effect of a single dose of tranquillizer (10 mg/kg) on rat liver tyrosine-α-ketoglutarate transaminase as a function of time. Enzyme activity expressed as μmole of *p*-hydroxyphenyl pyruvate (mg protein) 1 hr at 38°. Control value (8·8) taken as 100 per cent.

suggest some difference in the mechanism of induction of TKT by phenothiazines and reserpine. It is also to be noted that chlorpromazine took longer time to induce maximum increase of the enzyme than prochlorperazine and trifluopromazine, which are known to be more potent.[18, 19]

The effect of reserpine on TKT observed in this study is essentially similar to that reported by Canal *et al*[20] who used the drug at 5 mg/kg dose.

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