No. 73

S-Å Persson (Department of Pharmacology, University of Umeå, Sweden): INHIBITION OF THE FORMATION IN VIVO OF DOPA FROM m-TYROSINE BY PARACHLOROPHENYLALANINE.

Administration of m-tyrosine to rats pretreated with decarboxylase inhibitors results in a considerable accumulation of DOPA in brain and liver (G. Hollunger and S-Å Persson, Acta Pharmacol. et Toxicol. 1974, In press).

It is now found that administration of a known inhibitor of tyrosine hydroxylase, H 44/68 (DL-α-methyl-p-tyrosine methylester, 500 mg/kg i.p.) did not decrease this DOPA accumulation in the liver but lowered the brain level by 50%. After p-chlorophenylalanine (PCPA) administration (DL-p-chlorophenylalanine methylester 800 mg/kg i.p. 24 and 48 hours before death) the accumulation in the liver as well as in the brain was decreased by about 75%. PCPA is considered not to inhibit tyrosine hydroxylase, but to be an inhibitor of the phenylalanine hydroxylase. (E.M. Gal and S.A. Millard. Biochim. Biophys. Acta, 227, 1971, 32-41). Thus it can be concluded that the formation in vivo of DOPA from m-tyrosine probably is mediated via the phenylalanine hydroxylase. However, alternative pathways of the DOPA generation will be considered.

No. 74

S-Å Persson[x)] & G. Wahlström (Department of Pharmacology, University of Umeå, Sweden): THE RELATIONSHIP BETWEEN TUBE RUNNING ACTIVITY IN MICE AND 5-HYDROXYTRYPTAMINE.

In male mice pretreated with Nialamide (50 mg/kg i.p.) treatment with 5-Hydroxytryptophan (5-HTP) 50 mg/kg i.p. decreased the time it took for the mice to run 100 cm in a narrow plexi-glass tube (Persson, S-Å and Wahlström, G., Acta Physiol. Scand., Suppl. 396, p 84, 1973).

In the present study this decrease in run time has been observed to be dose-dependent. The minimal effective dose of 5-HTP was found to be 12.5 mg/kg i.p. 5 mg/kg of 5-HTP had no certain effect. The controls were treated with Nialamide (50 mg/kg i.p.) and saline. Compared with only saline treated animals this dose of Nialamide caused a small but detectable decrease in run time.

After LSD-25 (2.5-5 mg/kg i.p.) a dose dependent increase in the duration of the decrease of the run time was recorded compared with saline treated controls. However, no differences in run time was observed between mice treated with apomorphine-HCl (0.05-5 mg/kg) and saline treated controls.

Tube running activity in mice could thus be of value in studies of functional effects of 5-hydroxytryptamine.