

P13.7.2**A CORRELATIVE STUDY OF VERTICAL ACTIVITY AND HORIZONTAL MOVEMENT IN RATS.**

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Locomotor activity measurements are used extensively to evaluate drug-induced changes in central nervous system (CNS) function. However, the relationship between CNS activities and horizontal movement or vertical rearing, which are commonly used parameters for locomotion, is still unclear. An animal activity monitor, utilizing video cameras, infrared rays and a computer, was used to record vertical (rearing) and horizontal movements as well as the jumping activities of rats. Female Sprague-Dawley rats (150-170g) were placed individually in motor activity-monitoring chambers, allowed 30 min to become familiar with their surroundings and then observed from 9.00 to 11.00 am daily. Phenobarbitone sodium (10, 20 or 40 mg/kg, s.c.), diazepam (10, 20 or 40 mg/kg, s.c.), hexamethonium bromide (5, 10 or 20 mg/kg, s.c.), PD135158 (0.1, 1 or 10 mg/kg, s.c.) or amphetamine (1.25, 2.5 or 5 mg/kg, i.p.) was freshly prepared in a solution of NaCl 0.9% w/v (saline) and injected 20 min before starting experiments. A similar volume of saline (2ml/kg) was given by the same route to the controls. The animals were used only once for each drug tested. Amphetamine significantly increased both vertical and horizontal movements. The higher doses of phenobarbitone or diazepam decreased vertical rearing; it is unlikely that the latter drug caused this effect by skeletal muscle paralysis. Hexamethonium was found to increase only horizontal movements. PD135158, a selective cholecystokinin_B receptor blocker, did not affect all locomotor activity parameters. The present findings suggest that vertical rearing may more closely reflect CNS activity, whereas horizontal movement is influenced by the peripheral nervous system.

P13.7.4**CNS EFFECT OF (-)DEPRENYL UNRELATED TO MAO-B INHIBITION.**

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As a measure of the basic activity of the catecholaminergic and serotonergic systems the biogenic amines released from freshly excised brain tissue were measured by the aid of HPLC with electrochemical detection. Rats of both sexes were injected subcutaneously, daily for 21 days, either with saline or with a dose of the following compounds: (-)deprenyl, (-)1-phenyl-2-propylaminopentane (PPAP), (-)methamphetamine. The release of the biogenic amines from brain tissue was measured 24 hours after the last injection. (-)Deprenyl-treatment (0,01-0,25 mg/kg daily) enhanced significantly the release of dopamine from striatum, substantia nigra and tuberculum olfactorium and the release of noradrenaline from the locus coeruleus.