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P 'psychostimulant' 'dibenzazepine' i.p. clomipramine cf. 'LSD' influence on 'electrophysiol.' firing 'N-metab.' 'serotonin' turnover efflux in 'brain' raphe-nucleus lab.animal congress /XXVI/ /XXXII/ 32389P

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Chlorimipramine and LSD: Differential Effects on the In Vivo Release of ^{3}H-5HT.

Certain biochemical and electrophysiological parameters do not distinguish between the effects of chlorimipramine (CIM) and LSD on the brain serotonergic (5HT) system: both drugs induce 5HT turnover and inhibit the firing of raphe (5HT) neurons. However, based on their proposed mechanisms of action, CIM (by blocking neuronal reuptake of 5HT) should increase 5HT efflux and LSD (by directly inhibiting neuronal release of 5HT) should decrease 5HT efflux. To examine these possibilities, the effects of these drugs on the in vivo release of endogenous ^{3}H-5HT (formed under ^{3}H-L-tryptophan) were investigated via a ventricular push-pull cannula. Although CIM (5 mg/kg, i.p.) or LSD (100 µg/kg. i.p.) both inhibited raphe cell firing for about 1 hr, the efflux of ^{3}H-5HT was affected differentially by the 2 drugs. Chlorimipramine produced either an increase (20 mg/kg) or no change (5 mg/kg) in the efflux of ^{3}H-5HT. However, LSD at both 100 and 200 µg/kg produces a decrease in ^{3}H-5HT efflux. These results demonstrated that although the effects of CIM and LSD on 5HT turnover and raphe neuronal firing were similar, distinct differences in their actions were revealed by measuring the efflux of ^{3}H-5HT.

RA/IMS

LSD

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