

P7 SOCIAL ISOLATION ALTERS THE BEHAVIORAL EFFECT OF CARBAMAZEPINE ON THE RAT FORCED SWIMMING TEST

Noppamars Wongwitdecha¹, Ekawit Threenet²

¹*Department of Pharmacology, ²Toxicology Program, Faculty of Science, Mahidol University, Rama VI Road, Bangkok 10400, Thailand*

ABSTRACT

The present experiments were undertaken to determine whether rearing rats in social isolation from weaning alters the behavioral response produced by carbamazepine when these rats are exposed to the forced swimming test. Isolation and socially reared rats were compared for their response in the two aversive situations, either without drug pretreatment or following sub-chronic administration of carbamazepine or vehicle (2% Tween 80). Male Wistar rats were raised from weaning either alone (isolation rearing) or in groups of six rats/cage (social rearing). Six weeks later, these rats were tested for their sensitivity to carbamazepine using the forced swimming test (Porsolt et al., 1978, Eur J Pharmacol 47, 379-391). The results demonstrated that untreated isolation reared rats showed significantly less immobility and more struggling in the forced swimming test than socially reared rats. Sub-chronic administration with carbamazepine (10, 20 and 40 mg/kg i.p.) 24, 5 and 1 h to both isolation and socially reared rats caused a dose-related decrease in immobility time but increase struggling compared to the vehicle treated rats. However, these effects did not occur in isolation reared rats. The present data indicate that social isolation rearing from weaning alters the response to aversive stimuli and that sub-chronic treatment with carbamazepine reduces these effects in the adult rats.