

## DOES THE ANTICONVULSANT AGENT SODIUM VALPROATE DISPLAY BEHAVIOURALLY SELECTIVE ANTI-OFFENSIVE ACTIVITY?

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Sodium Valproate is an effective anticonvulsant both in man and animals (Chapman et al. 1982). Since its anticonvulsant properties were first shown by Meunier et al. in 1963 it has been used primarily in the therapy of generalized seizures (Pinder et al. 1977). Subsequently, its clinical indication has been extended to cover affective disorders (Emrich et al. 1980) and the drug has been found to be effective in isolation-induced offensive behaviour in animals (Puglisi-Allegra & Mandel 1980).

The purpose of this study was to further investigate any dose relationship to the anti-offensive properties of sodium valproate in comparison with possible effects on social, sexual, non-social and locomotor behaviour in isolated mice.

Anti-offensive behavioural properties were assessed in male ICI-CBI mice starting weight (20-25g, n=10) using a modified isolation procedure described by Darmani et al. 1988. Briefly, a behavioural interaction profile between 21-day 'isolated opponents' and grouped-housed 'standard opponents' over a test period of 10 min was determined in normonosmic mice.

Sodium valproate exhibited a dose-related anti-offensive action over the dose range 50-300 mg/kg (i.p.), such that there was a significant reduction in offensive encounters/animal ( $p < 0.005$ ), a delay in onset to first offensive interaction from  $3.4 \pm 0.37$  min (controls) to  $7.5 \pm 0.5$  min at the highest dose ( $p < 0.01$ ) and a 60% reduction in animals displaying offensive behaviour. There were no significant changes observed in the locomotor activity counts, social, non social and sexual behavioural profiles. The only remaining behaviours which were significantly modified by sodium valproate (300 mg/kg) included the mean incidence of biting which was reduced from  $3.4 \pm 0.45$  to  $0.4 \pm 0.22$  and the number of facing upright postures ( $0.8 \pm 0.32$  to  $0.2 \pm 0.13$ ), and these behaviours were related to social offence.

Since sodium valproate markedly increases central levels of GABA (Simler et al. 1973) it is quite possible that this is an important mechanism involved not only in its anticonvulsant activity but also in its anti-offensive properties. In any event, these data confirm that anti-offensive properties are graded and selective when compared with other behavioural parameters since only those associated with offensive behaviour were modified.

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