Facilitation by 8-OH-DPAT of passive avoidance performance in rats after inactivation of 5-HT$_{1A}$ receptors

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1. Pretraining administration of 8-hydroxy-2-di-n-propylamino-tetralin (8-OH-DPAT 0.1 mg kg-1), a 5-HT1A receptor agonist, or buspirone (1 mg kg-1), a 5-HT1A receptor partial agonist, markedly impaired passive avoidance retention in rats 24 h later. The effect of 8-OH-DPAT was prevented by the 5-HT1A receptor antagonists, NAN-190 and WAY-100635, at doses without any intrinsic effect.

2. N-ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline (EEDQ 10 mg kg-1), an alkylating agent that inactivates different G-protein coupled receptors, impaired retention performance when given 48 h pretraining. The disruptive effect of EEDQ was reversed by 8-OH-DPAT or buspirone, given 30 min before training.

3. Non-specific actions did not account for 8-OH-DPAT-induced reversal of the EEDQ effect since no significant difference in locomotor activity or in pain threshold was found between rats receiving EEDQ or EEDQ + 8-OH-DPAT.

4. When NAN-190 (1 mg kg-1) or WAY-100635 (0.5 mg kg-1) were given before 8-OH-DPAT to EEDQ-pretreated animals, the reversal by 8-OH-DPAT of EEDQ-induced retention impairment was still more pronounced. However, no EEDQ reversal by 8-OH-DPAT was found when 5-HT1A receptors were protected by WAY-100635 (10 mg kg-1) 30 min before EEDQ.

5. In the hippocampus of EEDQ-treated rats, 5-HT7 receptors were less inactivated than 5-HT1A receptors and significant increases were found in 5-HT1A but not in 5-HT7 receptor mRNA levels. Ritanserin and methiothepin (10 mg kg-1 each), antagonists with higher affinity at 5-HT7 than at 5-HT1A receptors, prevented the retention impairment induced by EEDQ but did not significantly protect against 5-HT7 receptor inactivation.

6. The results indicate that the facilitatory effect of 8-OH-DPAT is not mediated through 5-HT1A receptors and suggest that other 8-OH-DPAT-sensitive receptors could be involved in the dual effect of 8-OH-DPAT on passive avoidance performance in rats.

Keywords: Passive avoidance; 5-HT1A receptors; 5-HT7 receptors; 8-OH-DPAT; EEDQ; hippocampus

Abbreviations: 5-CT, 5-carboxamidotryptamine; 5,7-DHT, 5,7-dihydroxytryptamine; 8-OH-DPAT, 8-hydroxy-2-(di-n-propylamino)tetralin; DNMTP, delayed non-matching to position; EEDQ, N-ethoxycarbonyl-2-ethoxy-1,2-dihydroqui-noline; LTP, long-term potentiation

The fatigue descriptive scale (FDS): a useful tool to evaluate fatigue in multiple sclerosis

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Although fatigue is common among multiple sclerosis (MS) patients, evaluation of this symptom is difficult due to the subjectivity and variability of the complaint We proposed the Fatigue Descriptive Scale (FDS) as a tool to evaluate the severity and quality of fatigue in a group of patients suffering from MS. As a way to demonstrate the usefulness of this scale we applied the FDS in a group of 155 patients