

INFLUENCE OF A CANNABINOID CB₁ RECEPTOR ANTAGONIST, SR141716, ON SEXUAL BEHAVIOR OF MALE RATS

Zanoli Paola, Zavatti Manuela, Montanari Caterina, Rivasi Marianna, Poggioli Rosanna and Benelli Augusta

Department of Biomedical Sciences, Section of Pharmacology, University of Modena and Reggio Emilia, Modena, Italy

The acute administration of anandamide and Δ^9 -tetrahydrocannabinol (THC) was demonstrated to negatively affect male rat copulatory behavior decreasing the percentage of copulating animals, increasing ejaculation latency and decreasing ejaculation frequency.

On the other hand, it has been recently shown that SR141716, a cannabinoid CB₁ receptor antagonist, when injected into the paraventricular nucleus of hypothalamus in male rat, was able to induce penile erections by increasing dopaminergic and oxytocinergic activity (1). Moreover SR141716, when intraperitoneally administered, was found to facilitate penile erection induced by apomorphine (2).

To further evaluate the role of cannabinoid receptors in sexual function, we investigated the influence exerted by SR141716 either acutely (0.1, 0.5, 1 and 2.5 mg/kg) or subchronically (0.1, 0.5 and 1 mg/kg/day for 10 days) administered to sexually potent rats by intraperitoneal injection. Adult male Sprague Dawley rats, submitted to 7 pre-experimental training tests with sexually receptive females, were defined sexually potent when achieved ejaculation in the last three tests. We evaluated both sexual motivation (partner preference test) and sexual performance (copulatory behaviour and multiple ejaculation tests). SR 141716, acutely administered, failed to influence sexual motivation, but, when injected at the highest dose, it reduced the percentage of mounting (50%) and ejaculating animals (0%) in comparison with control rats (100%) and significantly ($p < 0.01$) increased mount and intromission latencies. In the multiple ejaculation test, the cannabinoid antagonist, even at the lowest dosage, significantly ($p < 0.05$) reduced the percentage of rats achieving the fourth ejaculation (12.5%) in comparison with control rats (42.8%). At the highest dose (2.5 mg/kg) SR141716 completely inhibited ejaculatory activity. The subchronic administration of SR141716 did not exert any influence on the sexual motivation and on the different parameters measured during the copulatory behaviour test. On the other hand a modest reduction in the percentage of mounting and ejaculating rats was observed in SR141716-treated groups. The present results provide evidence that SR141716 exerts an inhibitory influence on copulatory behaviour, only when acutely injected in male rats.

- 1) Melis M.R., Succu S., Mascia M.S., Argiolas A. (2004) *Neurosci Lett.* 359; 17-20
- 2) Da Silva G.E., Fernandes M.S., Takahashi R.N. (2003) *Neurosci Lett.* 349; 49-52