THE ROLE OF OPIOID SYSTEM IN THE ANTIDEPRESSANT-LIKE ACTION OF (m–CF3–PhSe)₂ IN MICE

Tagliapietra, C.F.; Rosa, S.G.; Pesarico, A.P.; Nogueira, C.W.

Introduction and objectives: Depression is a serious mental disease characterized by psychological and behavioral changes. Evidence has been found to suggest that the activation of the opioid system is implicated in the mechanisms underlying the effect of antidepressants. The aimed of this study was to investigate if the opioid system is involved in the antidepressant-like action of (m–CF3–PhSe)₂, an organoselenium compound. Materials and methods: Animals were used according to the guidelines of the Committee on Care and Use of Experimental Animal Resources, of the Federal University of Santa Maria (#7770060215). Male Swiss mice were treated with (m–CF3–PhSe)₂ at a dose of 50 mg/kg (i.g.) or vehicle (canola oil) and after 30 minutes the forced swimming test (FST) was performed. With the aim of investigating the role played by opioid system in the antidepressant-like effect of (m–CF3–PhSe)₂ mice were pre-treated with antagonists of κ, δ and μ- opioid receptors, and the FST was performed. Results and conclusions: (m–CF3–PhSe)₂ increased the latency to immobility and decreased the immobility time in the FST. Pre-treatment with naltrindole, a κ-opioid receptor antagonist, and naloxonazine, a μ- opioid receptor antagonist, abolished the antidepressant-like effect of (m–CF3–PhSe)₂. By contrast, norbinaltorfimina, a δ-opioid receptor antagonist, did not abolish the (m–CF3–PhSe)₂ antidepressant-like effect. There was no changes in locomotor activity of animals. These results are experimental evidence for the involvement of the opioid system in the antidepressant-like action of (m–CF3–PhSe)₂, mainly by interacting with μ and δ-opioid receptors.

Key-words: opioid, depression, selenium