ANTINOCICEPTIVE ACTIVITY OF PHENYLPROPAANOID 2-ALLYLPHENOL

Aragão Neto, H. C.; Fonsêca, D. V.; Salgado, P. R. R.; Melo, C. G. F.; Caldas Filho, M. R. D.; Braga, R. M.; Almeida, R. N.

1Departamento de Ciências Farmacêuticas, Instituto de Pesquisa em Fármacos e Medicamentos, Universidade Federal da Paraíba, Paraíba, Brazil

2-allylphenol is a popular fungicide in China, known as Yinguo. This compound presents fungicidal activity once it affects breathing and decreases the ATP levels. Based on the constant search for new drugs with therapeutic efficacy and fewer side effects, we were interested in studying the antinociceptive properties of 2-allylphenol. Swiss male mice were used, being divided into five groups of eight, with a default and a control group. In the acetic acid-induced writhing test, the substance’s capacity to cause an analgesic effect by decreasing the number of contortions was evaluated. In the formalin test, the time of paw licking was evaluated, during the first phase, neurogenic, and the second phase, inflammatory. In the glutamate test, time of paw licking was evaluated as indication of nociception. The results of the acetic acid-induced writhing test, showed that the administration of 2-allylphenol reduced the number of abdominal contortions (25: 14.6 ± 2.9; 50: 5.2 ± 1.5; 75: 3.3 ± 1.9; 100: 2.8 ± 2.2 vs. 28.1 ± 2.3), suggesting that the tested substance might have reduced the production of inflammatory mediators by inhibiting the synthesis of prostaglandins or by releasing the arachidonic acid through cyclooxygenase pathway. In the formalin test, licking time was reduced both on first (75: 50.3 ± 7.3; 100: 51.6 ± 11.0 vs. 80.4 ± 2.7) and second phases (75: 68.7 ± 32.2; 100: 15.4 ± 10.0). The second one, however, was more effective, indicating a more powerful anti-inflammatory mechanism of the tested substance. In the glutamate test, 2-allylphenol test dose of 100 (25.5 ± 9.1) reduced the licking time when compared to the control group (145.9 ± 14.5), suggesting that it develops an antinociceptive activity due to the interaction with the glutamatergic system. Based on these results, the 2-allylphenol demonstrated characteristics of an antinociceptive drug.

Keywords: 2-allylphenol, Antinociceptive, Phenylpropanoid.