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***In vivo* anti-inflammatory activity of the species: *Ammoides atlantica* of Apiaceae family**

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ABSTRACT

The present work concerns the biological evaluation of the species *Ammoides atlantica* of the Apiaceae family, after the extraction of the aerial parts of this plant; we did anti-inflammatory biological test of its Extracts: n-butanol extract and ethyl Acetate extract using various in vivo models in mice. Our results showed that the butanolic Extract of *Ammoides atlantica* gives a strongest anti-inflammatory activity (65.44 %).

Key words: *Ammoides atlantica*, Apiaceae, n-butanol extract, Ethyl Acetates extract, anti-inflammatory activity.

INTRODUCTION

The genus *Ammoides* (apiaceae) include two species in Algeria, one of which is endemic: *Ammoides atlantica* (coss. et Dur.) Wolf; the other one, *Ammoides pusilla* (Brot.) Breistr), is widespread in the Mediterranean region [1].

In Algerian traditional medicine, the aerial parts of *Ammoides atlantica* (coss. Et Dur.) wolf. (Apiaceae) are reported to have a wide range of biological activities such as antibacterial, antidiarrheic and diabetic activities. In this study, we did anti-inflammatory activity using different extracts (*n*-Butanol extract and ethyl acetate extract) of there aerial parts.

MATERIALS AND METHODS

2.1. Plant material

The aerial parts of *Ammoides atlantica* were collected from Megress Mountain (Eastern Algeria) at 1 500 m above sea level during June 2010, and identified by Dr. H. Laouer. A voucher specimen (B6308) has been deposited in the Museum Natural history of Nice (France).

2.2. Preparation of extracts

The air-dried powdered parts (700 g) of *Ammoides atlantica* were macerated three times in boiling methanolic solution (70%). The MeOH extract was concentrated to dryness, the residue was dissolved in boiling water (600 ml) after filtration, and the residue was extracted successively three times with AcOEt and n-butanol (3×200 ml) to give 2.5 and 22.7g of the respective residues. Solvents were evaporated and the residues of n-butanol and ethyl acetates extracts were dissolved in small volumes of methanol.

2.3. Animals

Animal studies were conducted in accordance with the internationally accepted principles for laboratory animal use; Animals were obtained from medical sciences Faculty, University of Mentouri-Constantine, Algeria. Adult albino mice of both sexes weighing (18-22 g) were used for carrageenan an-induced edema. The animals were kept under normal laboratory conditions of humidity, temperature (25± 1 °C) and light (12 h day: 12 h night), and allowed free access to food and water.

2.4. Evaluation of anti-inflammatory activity

The inhibitory activity of the studied extract on carrageenan-induced rat's paw edema was investigated according to the method of Levy [2].

Adult albino mice of both sex (18-22 g), with free access to water but had been fasted overnight (18 h), received a sub plantar injection of 0.025 ml of 1 % suspension of carrageenan in saline into the plantar tissue in the right hind paw. An equal volume of saline was injected into the other hind paw and served as control. Data are expressed as a percentage increase in paw thickness and the differences between treated animals and the control group were expressed at the same time point after carrageenan injection.

In this part of the study, mice were allocated randomly to one of six groups each were orally dosed with the tests extracts (n-Butanol extract and Ethyl acetates extract), one hour before carrageenan challenge: (a) controls (saline water: 0,9%); (b) n-butanolic extract (210mg/kg); (c) ethyl acetates extract (210mg/kg), (d) Aspirin (210mg/kg). Orally, injection of Aspirin was performed 60min before carrageenan-injection. Four hours after products administration, the animals were decapitated and the paw was rapidly excised. The average weight of edema was estimated for the treated as well as the control group. The percentage inhibition of weight of edema was also evaluated. Aspirin was employed as standard against which the test extract were compared [3].

RESULTS AND DISCUSSION

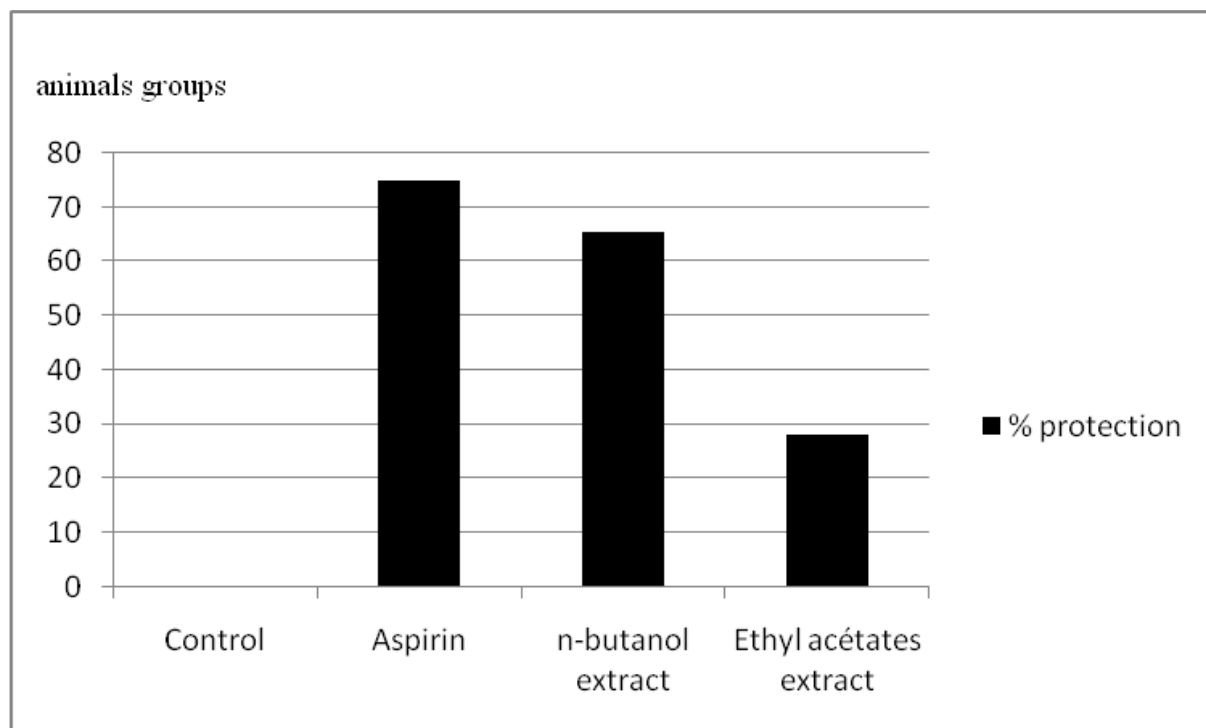
The results presented in Table 1 and the histogram 1;

The percentage of inhibition is calculated with the formula:

$$\% \text{ inhibition} = (\text{weight of control edema} - \text{weight of test edema}) / \text{weight of control edema}$$

Table 1: percentages of protection of different products injected in the animals

Animals groups	Dose (mg/Kg)	Increase in weight of paw edema (g)	% protection
Control	-	28.53	-
Aspirin	210	6.95	75
n-butanol extract	210	9.86	65.44
Ethyl acetate extract	210	16.31	27.96

**Histogram 1: percentages of protection of different products injected in the animals**

The table 1 and the histogram 1 showed that the butanolic Extract of *Ammoides atlantica* exhibited a significant anti-inflammatory activity, where it significantly decreased the weight of edema: 65.44 % induced by carrageenan in the rat's paw (Table 1 and histogram 1) using Aspirin as a reference drug.

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