



Chemical composition and topical anti-inflammatory activity of *Lantana radula* SW. (Verbenaceae) essential oil

Rafael M. Ximenes¹, José Wellinton da Silva¹, Raudiney F. V. Mendes¹, Igor C. Ferraz², Iasmine A. B. S. Alves¹, Simone Maria dos Santos¹, Dewson R. Pereira¹, Claudia S. A. Lima¹, Julianna F. C. de Albuquerque¹

¹Departamento de Antibióticos, Universidade Federal de Pernambuco - Recife, Brazil

²Centro Acadêmico de Vitória, Universidade Federal de Pernambuco - Vitória de Santo Antão, Brazil

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Many species of the genus *Lantana* have been used in traditional medicine for the treatment of inflammatory diseases (1). The aim of this study was to analyze the chemical composition of *L. radula* essential oil and investigate its topical anti-inflammatory activity. *L. radula* aerial parts were collected at 7:00 am in the APA Aldeia Beberibe, Camaragibe, PE. A voucher specimen was deposited in the IPA Herbarium under the number 94,459. Fresh flowering aerial parts (200 g) were extracted by hydrodistillation in a Clevenger apparatus for 2 h. Chemical analyses by GC/MS were performed using a gas chromatograph Agilent Technologies (Palo Alto, CA, USA), model 7890A, equipped with a flame ion detector and a selective mass detector, model 5975C, with a capillary column Agilent J&W HP-5MS (30 m X 0.25 mm X 0.25 μ m). The oven temperature was programmed at 70 °C with an increase of 4 °C min⁻¹ until 280 °C was reached and then maintained for 15 min. The carrier gas was helium, with a constant flow rate of 1.4 mL min⁻¹. The temperature of the ionization source was maintained at 280 °C, ionization energy at 70 eV, and ionization current at 0.7 kV. Mass spectra were recorded from 30 to 450 *m/z*. Individual components were identified by matching their 70 eV mass spectra with those of the spectrometer database by using the Wiley L-Built library and by comparing their retention indices and fragmentation patterns with those of the NIST. Topical anti-inflammatory activity was evaluated by croton oil-induced ear edema in mice. Briefly, mice were anesthetized with halothane and received 20 μ L of croton oil 2% in acetone at the right ear. After drying, animals received 3 μ L of essential oil diluted in acetone. Left ear received acetone and was used as control. The animals were euthanized after 6 h and samples of 6 mm of diameter were taken and weighted for edema measurement. The results were expressed as mean \pm SEM and analyzed by ANOVA with posttest of Bonferroni, *p*<0.05. Essential oil extraction yielded 0.03 %. Chemical analyses identified 87.1 % of the compounds, all of them sesquiterpenes. Among them, 26.6 % were oxygenated sesquiterpenes. The major compounds found were β -caryophyllene (24.4 %), β -cubenene (23.3 %), elemol (14.7 %), β -elemene (6.8 %), and eudesm-7(11)-en-4-ol (5.3 %). Caryophyllenes are reported as chemical markers of *Lantana* genus (2). Topical administration of *L. radula* essential oil decreased the croton oil-induced ear edema by 44.4 %, while dexamethasone (0.1 mg/ear) inhibited the ear edema by 81.3%. This data points to a possible topical anti-inflammatory effect of the essential oil of the flowering aerial parts of *L. radula*.

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2. Sena-Filho, J.G. et al. Nat. Prod. Commun., 2010, **5**, 635-640.

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