



Obtaining spathulenol from *Baccharis dracunculifolia* (Asteraceae) essential oil

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The search for new therapies based on medicinal plants for the treatment of schistosomiasis, a tropical neglected disease with high mortality rate, has been focused on our research group, especially essential oils. *Baccharis dracunculifolia*, Asteraceae, is a shrub plant that occurs in Brazil, from Minas Gerais to Rio Grande do Sul states. It has antimicrobial cytotoxic, hypoglycaemic and anti-inflammatory activities, and its essential oil is rich in sesquiterpenes, mainly nerolidol and spathulenol. This study aimed to obtain an enriched fraction in spathulenol to evaluate schistosomicidal activity. OE's of 105 natural *B. dracunculifolia* specimens were obtained from fresh leaves collected at the winter season in 2012, on different locations like, Campos do Jordão/SP, Campinas/SP and Ubatuba/SP, were subjected to hydrodistillation separately in a Clevenger-type apparatus for 1 h and 30 min each and analyzed by gas chromatography coupled with mass spectrometry detection (GC-MS). The richest samples on spathulenol were clustered (nine EO's samples, 1.08g) and fractionated on dry chromatography column (DCC) with silica gel 60 (0.063 to 0.200mm) and dichloromethane, resulting 10 fractions (F1 to F10) which were analyzed by GC-MS. All plants showed OE yield greater than 0.5%, especially Campinas and Ubatuba (1.11 and 1.09%, respectively). Regarding spathulenol content, plants collected in Ubatuba had on average 22.6% of this compound, those from Campos do Jordão 19.6% and those from Campinas 10.8%. The fractionation of the mixture containing nine OE's provided three fractions enriched in spathulenol: F6 (29.4%), F7 (59.6%) and F8 (30.6%), with yields of 17.4, 19.4 and 12.5% (w/w), respectively. The fractionation of *Baccharis dracunculifolia* essential oil by this method proved to be a fast and feasible alternative to getting rich fractions of spathulenol.

1. WHO, World Health Organization. <http://www.who.int/topics/schistosomiasis/en/>. Accessed in July 2015.

2. Oliveira, R. N. et al. Experimental Parasitology, 2012, **132**, 135-143.

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