



OPTIMIZATION OF THE OBTAINMENT PROCESS OF HYDROALCOHOLIC EXTRACT FROM *Lippia organoides* H.B.K., FLAVONOIDS IDENTIFICATION AND HYPOTENSIVE ACTIVITY

José de Sousa Lima Neto¹; Mariana Feitosa Custódio¹; Angélica Gomes Coelho¹; Ilmara Cecília Pinheiro Da Silva Moraes¹; Arkellau Kenned Silva Moura¹; Daniel Dias Rufino Arcanjo¹; Aldeídia Pereira De Oliveira¹; Antonia Maria Das Graças Lopes Citó¹.

Universidade Federal do Piauí, Teresina, Brazil, limaneto5@gmail.com

"Alecrim do Campo" or *Lippia organoides* H. B. K. is used in traditional medicine to treat flu and lung infections. Hydroalcoholic extract of *Lippia organoides* H.B.K. (Lo-EHA), show phenolics and terpenic compounds, substances associated with the prevention and treatment of cardiovascular diseases¹. This study has sought optimize the process to obtain Lo-EHA, investigate the presence of flavonoids and evaluate its hypotensive activity in normotensive rats. Was performed factorial design 2³ (triplicate), for three factors on two levels: Solvent (ethanol or ethanol/water (1:1)); sonication (+ or -); solvent exchange (daily for three days or each three days, resulting in twelve days). After initial optimization, the ratio plant material/ solvent (1: 5, 1: 8, 1:10) was determined from 5g of dried and ground plant material. The results of optimization were compared by ANOVA Tukey and Student paired test. Lo-EHA was analyzed by HPLC-ESI-IT-MS and FIA-ESI-IT-MSⁿ (negative mode) and the compounds were identified by precursor ions obtained and their fragmentation. The measurement of hypotensive activity was conducted by tail cuff method in rats *Wistar* (230 ± 30 g) at 30 minutes intervals up to 390 minutes after oral administration of Lo-EHA in 100 e 200 mg/kg doses. The ANOVA-Tukey and t test Student's paired of masses obtained showed that 9 days extraction and the ratio 1:8 (w/v) was more efficient, while the presence sonication procedure doesn't have significant effects, obtaining a yield of 25%. Were identified in Lo-EHA six major compounds: eriodictyol, narigenin and hesperetin, luteolin-6,8-di-C-glycoside, orientin and vitexin^{1,2}. After administration of Lo-EHA, was observed a hypotensive response in both doses in 60 to 90 minutes (-19,12 mmHg ± 4,82; -19,09 mmHg ± 2,54) relative to control group (1,41 mmHg ± 2,45; 6,21 mmHg ± 1,43), with effect duration of 270 and 300 minutes, respectively. The results showed that the optimization of process preparation of Lo-EHA, favored obtain a yield of 25%, flavones and flavanones as major compounds and their activity hypotensive was pronounced and prolonged doses studied, which indicates a chronic use to control arterial hypertension.

References:

- [1] Funari, C. S., Eugster, P. J., Martel, S., Carrupt, P.A., Wolfender, J.L., Silva, D. H. S. 2010. High resolution ultra high pressure liquid chromatography-time-of-flight mass spectrometry derepication strategy for metabolite profiling of Brazilian *Lippia* species. J. Chromatogr. A. 1259: 167-178.
- [2] Harbone, J. B. 1994. The flavonoids: advances in research since 1986. Chapman and Hall. London.



5th BCNP
Brazilian Conference
on Natural Products
XXXI RESEM



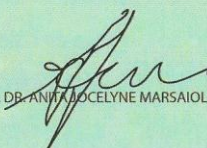
Taua Hotel & Convention Atibaia
Atibaia - SP/Brazil
October 26/29, 2015

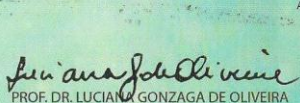
CERTIFICATE

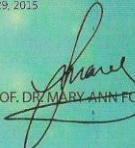
We confirm that the ePoster "Optimization of the obtainment process of hydroalcoholic extract from *Lippia Origanoides* H.B.K., flavonoids identification and hypotensive activity" was presented at "5th Brazilian Conference on Natural Products - BCNP" and "XXXI Annual Meeting on Micromolecular Evolution, Systematics and Ecology - RESEM", held at Taua Hotel & Convention, in Atibaia-SP,Brazil, on october 26/29, 2015.

Authors: José de Sousa Lima Neto; Mariana Feitosa Custódio; Angélica Gomes Coelho; Ilmara Cecilia Pinheiro Da Silva Moraes; Arkellau Kenned Silva Moura; Daniel Dias Rufino Arcanjo; Aldeidia Pereira De Oliveira; Antonia Maria Das Graças Lopes Cito
Protocol: 209

Atibaia, october 29, 2015


PROF. DR. ANÍBAL JOCELYNE MARSAIOLI (Chair)


PROF. DR. LUCIANA GONZAGA DE OLIVEIRA


PROF. DR. MARY ANN FOLLIO

Organization:



Sponsors:

