



## Chemical Composition and Molluscicidal Activity of Essential Oil from the leaves of *Eugenia patrisii* Vahl.

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Schistosomiasis, also known as bilharziasis, is the second most endemic parasitosis in all over the world which affects over than 200 million people in America, Africa and Asia. Brazil is the largest endemic area in America where this disease is faced as an important health problem. However, five species of trematode can cause schistosomiasis; *S. mansoni* is the main agent in our continent. The transmission occurs by freshwater snails of genus *Biomphalaria*, considerate as intermediate hosts. According to World Health Organization (WHO), one of the best ways to control the overspread of this parasitosis is the use of molluscicidal agents to the snail control, breaking the life cycle of trematode and avoiding its transmission by human skin. For many researchers, the plants represent an important source of low cost and safe compounds with molluscicidal activity that can be a great alternative to decrease the morbidity and mortality of this disease. *Eugenia patrisii* Vahl. (Myrtaceae) is a common species in Cerrado biome of Brazil and stands out for being an aromatic plant. This study aims to analyze the chemical composition of the essential oil from *E. patrisii* leaves, and evaluate its molluscicidal activity against *B. glabrata*. The species were harvested in Carolina-MA, Brazil in January 2013. The voucher specimen was deposited at the João Murça Pires Herbarium from Museu Paraense Emílio Goeldi (MPEG) in Belém-PA-Brazil. The essential oil was obtained by hydrodistillation from dry leaves and then was characterized by gas chromatography (GC) and GC-mass spectrometry (GC/MS). The molluscicidal activity was evaluated according to standards recommended by the WHO, using several concentrations under 100 mg L<sup>-1</sup>. Lethal concentrations (LC) of the essential oil were calculated by prohibit analysis. With this methodology, twenty-five compounds were identified corresponding to 96.8 % of the oil. The major constituents were  $\delta$ -cadinene (14.9 %), bicyclogermacrene (13.8 %) and  $\beta$ -selinene (11.1 %). The oil comprised sesquiterpenes hydrocarbons (86.0 %), oxygenated sesquiterpenes (10.6 %) and oxygenated monoterpenes (0.1 %). The oil showed significant molluscicidal activity against *B. glabrata*, with LC<sub>10</sub>, LC<sub>50</sub> and LC<sub>90</sub> values of 35.9; 62.1 and 83.8 mg L<sup>-1</sup>, respectively after 24 h of the beginning of the test. These values are below the threshold of 100 mg L<sup>-1</sup>, set down as potential molluscicidal activity by the WHO. Hence, the results presented here suggest that the essential oil of *E. patrisii* leaves possesses important toxicity against snail *B. glabrata* and is therefore a potential source of compounds for the control of schistosomiasis in endemic areas.

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