

ANTIMICROBIAL ACTIVITY OF PHENYLPROPANOIDS ISOLATED FROM ESSENTIAL OIL OF *PIMENTA DIOICA* (MYRATACEAE)

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Abstract: *Pimenta dioica* (L.) Merr, known as Pimenta da Jamaica is specie belonging to the Myrtaceae family native to the Caribbean region especially Jamaica and Cuba. From this specie have been described flavonoids and tannins [1]. Also phenylpropanoids and monoterpenes have been described from essential oil with several activities including antifungal, antimicrobial, nematicidal [2]. The present work deals with the chemical composition of essential oil including the isolation of main compounds as well as the antimicrobial evaluation of the oil and compounds against several microorganisms (bacteria and yeast). Thus the crude essential oil from leaves was obtained using a Clevenger type apparatus and analyzed by GC/MS. After these analyzes, the oil was subjected to fractionation using column chromatography and the fractions were analyzed by NMR (¹H and ¹³C) afforded the identification of two phenylpropanoids: eugenol and chavicol (Figure 1). Additionally the antimicrobial effect of crude oil and the major compounds was determined against different microorganisms (*Escherichia coli*, *Staphylococcus epidermidis*, *Candida albicans*, *Cryptococcus neoformans* (serotype A) and *Saccharomyces cerevisiae*). The evaluation of the sensitivity of microorganisms previously mentioned was performed by disk diffusion method [3]. We used 2 µl/disk for each sample and 10 µl/disk chloramphenicol (70 mg/ml) as positive control for bacteria and 10 µl/disk fluconazole (2.0 mg/ml) as positive control for yeast. The results showing that the eugenol showed antimicrobial activity against all the microorganisms, whereas the chavicol showed activity only for *C. neoformans* serotype A. The finding suggests that the activity may be due to the methoxyl group that differentiates the chavicol and eugenol. (Acknowledgment: CAPES, CNPq, FAPESP)

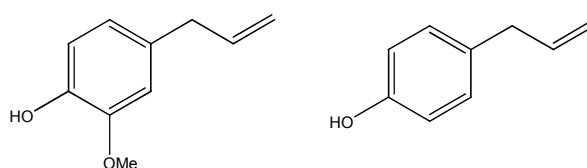


Figure 1: Structures of eugenol and chavicol

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