

### ISE3-P29 Chemical constituents and antibacterial activity of *Rosmarinus officinalis* L. (Labiatae)

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**Background:** *Rosmarinus officinalis* L. (Labiatae) is an aromatic plant abundant in dry places, rocks and hills of the Mediterranean scrub. Several studies in the last several years show that the oil from the leaves can help prevent the development of cancerous tumours in laboratory animals. The oil is used externally as a rubefacient and an antiseptic and rosemary is also used as a condiment in cooking, but this plant present grand variability in the composition and percentage of the volatile constituents.

**Objectives:** In the present paper the chemical composition and antimicrobial activity of essential oil obtained from *Rosmarinus officinalis* L. were investigated in relation to their vegetative cycle.

**Methods:** The oil was processed by hidrodistillation in a Clevenger device. The constituents of the essential oils were identified on the basis of their GC retention index (RI) and by matching their 70 eV mass spectra with our data and reference libraries.

The antibacterial assay was determined by agar dilution method using Mueller-Hinton agar.

**Results and conclusions:** Four samples (spring, summer, autumn and winter) of the volatile fraction of *R. officinalis* were analyzed. In the samples of spring and winter was camphor the major constituent (22.83% and 27.45% respectively), however the samples of summer and autumn showed a lower content of 1,8 cineole (15,71% and 19,59% respectively).

The winter sample presented a more pronounced antibacterial activity

**Keywords:** *R. officinalis*, essential oil, camphor, 1,8 cineole, antibacterial activity, seasonal variations.

### ISE3-P30 *In vitro* antimicrobial activity and toxicological evaluation of a leaf ethanolic extract of *Diospyros villosa*

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**Background:** *Diospyros villosa* (L.) De Winter (Ebenaceae) is an African scandent shrub or small straggling tree naturally occurring in Mozambique and commonly known as hairy star-apple. Traditional medicine practitioners use bruised leaves of *D. villosa* laid over painful spots for up to an hour as a counter irritant to any kind of fixed internal pain and vesicant effects were previously reported.<sup>(1)</sup>

**Objectives:** This study aims simultaneously at the *in vitro* antimicrobial activity and the *in vivo* toxicological evaluation of a *D. villosa* leaf ethanolic extract.

**Methods:** Minimum Inhibitory Concentrations (MICs) of this extract were determined against *Candida albicans* ATCC 10231, *Enterococcus faecalis* ATCC 43062, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853, *Micrococcus luteus* ATCC 10240 and *Staphylococcus aureus* ATCC 25923. Acute and repeated dose toxicities of these extracts were also determined in CD-6 adult male rats. Serum levels of biomarkers, such as ALT, AST, LDH, CK-MB and creatinine were measured.

**Results and conclusions:** In the range of tested concentrations (19.5 to 312.5 µg/mL) the extract has shown antimicrobial activity against *C. albicans*, *E. coli*, *E. faecalis* and *M. luteus*. The most susceptible microorganism was *M. luteus* (MIC=19.5 µg/mL). The toxicological evaluation revealed some renal and hepatic toxicity.

**Keywords:** *Diospyros villosa*; Antimicrobial activity; Toxicological evaluation; Ethnopharmacology.

**References:** 1. Bryant AT. Zulu Medicine and Medicine-Men. Cape Town: C. Struik, 1966.