## B177 Antiinflammatory activity of *Siphoneugena reitzii* (Myrtaceae) and some isolated volatile compounds on chemotaxis of polymorphonuclear leucocytes

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*Siphoneugena reitzii* belongs to the Myrtaceae family and it is widely distributed in the Rio Grande do Sul State (Brazil). The volatile oil of this species and *S*-α-pinene, β-caryophyllene, α-bisabolol and its synthetic derivatives were used in the chemotaxis experiment to evaluate their influence in the locomotion of polymorphonuclears leukocytes (PMN). The oil of *S. reitzii* was obtained from the fresh leaves by hydrodistillation and analyzed by GC and GC/MS, using DB-5 fused silica capillary column and Supelco B-CDEX 120 column coated with beta-cyclodextrin for quiral separation. All the samples were tested in the chemotaxis assay in a concentration of 100 µg/ml. *S*-α-pinene is present in the *S. reitzii* oil with a percentage of 12.08% and it showed to be active on inhibition of PMN migration (91.93% of inhibition) (1). Another compound of this species is β-cariophyllene and it was also active (86.85% of inhibition). Other sesquiterpene, α-bisabolol was submitted to selective oxidation reactions, using chromium and MCPBA (2), as oxidants, and the five derivative oxygenated obtained were tested in the chemotaxis assay. Bisabolol diepoxide and 1-oxo-bisabolol were able to inhibit the locomotion of PMN presenting 92.20% and 91.25% of inhibition, respectively. *Epi*-hernandulcine did not present activity and bisabolol oxide B and bisabolol acetate demonstrated cytotoxic activity, occurring the breaking of the wall cell.

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**References: 1.** Sendo F. et al (1998) Inflamm. Research, 47, 133-136. **2.** Jones, A.B. (1991), Comprehensive Organic Chemistry, 7, 153-187.

## B178 Segregation of Southern Brazilian *Myrceugenia cucullata* and *Myrceugenia mesomischa* (Myrtaceae) essential oil composition and antimicrobial activity

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*Myrceugenia cucullata* D. Legrand and *Myrœugenia mesomischa* D. Legrand & Kausel, two southern Brazilian species until now merger under the first name, are evaluated for their chemical, morphological and ecological features and proposed here to be considered as distinct entities. The essential oil was obtained from fresh leaves by hydrodistillation and analyzed GC and GC/MS using both Durabond-DB5 (polidimethyldiphenylsiloxano) and Supelco B-CDEX120 (β-ciclodextrin). The oil composition of *M. cucullata* presented a great amount of *trans*-nerolidol (92 - 94 %), while that of *M. mesomischa* was rich in (–)-α- (20 – 28 %) and (–)-β-pinene (18 – 22 %). The two species may be distinguished morphologically by dimensions of leaves and pedicels, and ecologically they present distinct behaviors at the collections sites, where *M. cucullata* has a scattered distribution while *M. mesomischa* grows in dense groupings of individuals, suggesting a possible allelopathic action. The antimicrobial activity of the essential oils was assayed against *Staphylococcus aureus*, *S. epidermidis*, *Micrococcus luteus*, *Escherichia coli*, *Candida albicans* and *Saccharomyces cerevisiae*, by plate agar diffusion method. The results are showed in the Table 1.

**Table 1.** Antimicrobial activity of oils from *M. cucullata* and *M. mesomischa*.

| | *S. aureus* | *S. epidermidis* | *E. coli* | *M.luteus* | *C. albicans* | *S. cerevisiae* |
|---|---|---|---|---|---|---|
| *M. mesomischa* | 16.17 | 8.73 | R | 9.93 | 9.68 | IT |
| *M. cucullata* | 9.78 | 9.12 | 8.54 | 14.25 | R | NT |
| *Chloramphenicol* | 19.12 | 23.06 | 13.96 | 25.98 | - | - |
| *Nystatin* | - | - | - | - | 12.10 | 13.27 |

The values are the medium of three measurements (mm). NT: not tested; IT: total inhibition.

*M. mesomischa* showed high inhibition against *S. cerevisiae* and *S. aureus*, low activity against *S. epidermidis*, *M. luteus* and *C. albicans*. *M. cucullata* showed better activity against *M. luteus* and lower against *S. aureus*, *S. epidermidis* and *E. coli*.

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