



Área: ORG

Labdane or Abietane Diterpenes in Mandaçaia Geopropolis (*Melipona quadrifasciata*): Which Type Predominates?

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Highlights

Previous metabolomic study suggested the presence of abietane diterpenes in Mandaçaia geopropolis. Purification of the hexane and dichloromethane fractions afforded labdane diterpenoid types. These results revealed a different chemical story of the Mandaçaia geopropolis (*Melipona quadrifasciata*).

Abstract

Geopropolis, a resinous material produced by stingless bees from plant exudates, wax, and soil, possesses a chemical composition influenced by the local botanical and environmental diversity. We herein present the chemical study, of Mandaçaia geopropolis (*Melipona quadrifasciata*) collected in Florianópolis (SC) during summer and winter. The propolis samples were extracted with ethanol:water (7:3) and fractionated by non-miscible liquid-liquid partitioning in water using n-hexane, dichloromethane, ethyl acetate, and n-butanol. The hexane fraction of the winter extract showed high chemical complexity and was subjected to silica gel column chromatography using n-hexane/ethyl acetate gradients, resulting in the isolation of a mixture of labdane diterpenes, manool and copalol. The dichloromethane fraction of the summer allowed the isolation of two pure labdane diterpenes, identified as cupressic acid and isoagatholal. Structural characterization was performed by NMR, IR, and HRMS. The results demonstrate only labdane diterpenes were present in Mandaçaia geopropolis, not the abietanes as found in previous studies [1,2]. Moreover, the results reinforce the potential of propolis as a natural source of bioactive compounds with pharmacological relevance.

Acknowledgments



1. Vieira, A.L.S. *et al. Plants*, 2023.
2. Pereira, F. A. N. *et al. Pharmaceuticals*, 2021.