



***From Chemophenetics to Cytotoxicity: mapping the chemical landscape of Conchocarpus J.C. Mikan and Dryades Groppo, Kallunki & Pirani species***

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Recently, the genus *Dryades* was segregated from *Conchocarpus* based on robust morphological and molecular evidence<sup>1</sup>; however, its chemical markers and biological potential remain largely unexplored. To address this gap, we are applying an integrative strategy that combines advanced metabolomic approaches, high-resolution mass spectrometry (HRMS), nonconventional extraction procedures, and cytotoxicity assays to elucidate the key chemical distinctions between these genera. Thus far, we have examined eight *Conchocarpus* species and three *Dryades* species. Alkaloid-enriched fractions were prepared via ethanol extraction followed by acid–base partitioning and subsequently tested against the colorectal carcinoma cell line HCT-116. Remarkably, seven species exhibited significant cytotoxic activity. In parallel, LC-MS/MS data were used to construct a Feature-Based Molecular Network (FBMN) on the GNPS<sup>2</sup> platform, enabling the annotation of major compound families, particularly amides and alkaloids. Altogether, this study provides unprecedented chemophenetic insights into the segregation of *Conchocarpus* and *Dryades*, while also underscoring their potential as reservoirs of cytotoxic metabolites. Ongoing investigations are expected to refine these findings and foster the discovery of novel chemical markers with both chemotaxonomic and pharmacological relevance. This research was supported by CAPES (88887.951003/2024-00) and FAPESP (2024/03978-6).

1- Groppo, M. et al. Molecular Phylogenetics And Evolution, 2021. DOI: 10.1016/j.ympev.2020.106971.

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