10th Brazilian Conference on Natural Products
XXXVI RESEM
4-7 November 2025, Belo Horizonte, MG, Brazil
Section: 03

NEOLIGNANS FROM Piper rivinoides - KUNTH

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The *Piper rivinoides* Kunth plant belongs to the *Piperaceae* family, is widely distributed throughout Brazil and consists mainly of neolignans, which show promise in various biological activities (Moreira et al, 2016). The crude extracts of the branches and roots obtained using hexane, ethyl acetate and methanol were evaluated against six microorganisms: *Candida albicans*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Salmonella choleraesuis*, *Escherichia coli* and *Pseudomonas aeruginosa*. The slow evaporation of the hexane solvent from the root (PRRH) and branch (PRGH) extracts resulted in crystal formation that was analyzed by single crystal X-ray diffraction (XRD) and nuclear magnetic resonance (NMR - 1D and 2D, ^{1}H and ^{13}C). The crude ethyl acetate branch extract (PRGA) was purified by vacuum column chromatography and the fractions were grouped based on their similarity. The slow evaporation of the solvent from one fraction resulted in a crystal that was also evaluated by XRD and NMR. XRD analysis identified the neolignan from the PRRH and PRGH extracts as grandisine ($C_{24}H_{32}O_7$) with *trans-cis-trans* stereochemistry, isolated for the first time in this plant by our research group (Azevedo, 2022). The second compound isolated from the PRGA extract fraction is a neolignan ($C_{24}H_{32}O_8$) not previously reported in the literature. The best results obtained in the antimicrobial analysis were for *E. coli* and *S. epidermidis* treated with the PRRH and PRGA extracts (MIC 0.25 mg mL^{-1} and MBC >1.0 mg mL^{-1}), while the other extracts did not show significant activity. These results indicated the potential biological activity of *P. rivinoides* Kunth and may be associated with the presence of neolignans. Acknowledgments: PPGQ – UFPR, CNPq, and CAPES.

Keywords: *Grandisine, secondary metabolites, antimicrobial activity, two-dimensional NMR, single crystal XRD.*

Azevedo, C. M. Secondary metabolites of *Piper rivinoides* Kunth (Piperaceae) and evaluation of antimicrobial activity. UFPR, Curitiba, 2022.

Moreira, D. L. et al. Bioactive neolignans from the leaves of *Piper rivinoides* Kunth (Piperaceae). Records of Natural Products, v. 10, n. 4, p. 472-484, 2016.