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

Section: 02

IDENTIFICATION OF MODIFIED FLAVONOIDS AND SUPPOSED BIOSYNTHETIC PRECURSORS IN WOOD RESIDUES OF *Peltogyne catingae* Ducke

Davi Santos Oliveira[1*], Priscila Brasil Augusto de Souza[1], Jennifer Araújo de Oliveira Lima[1], Gabriel Faria de Souza[2], Claudete Catanhede do Nascimento[2], Maria da Paz Lima[2]

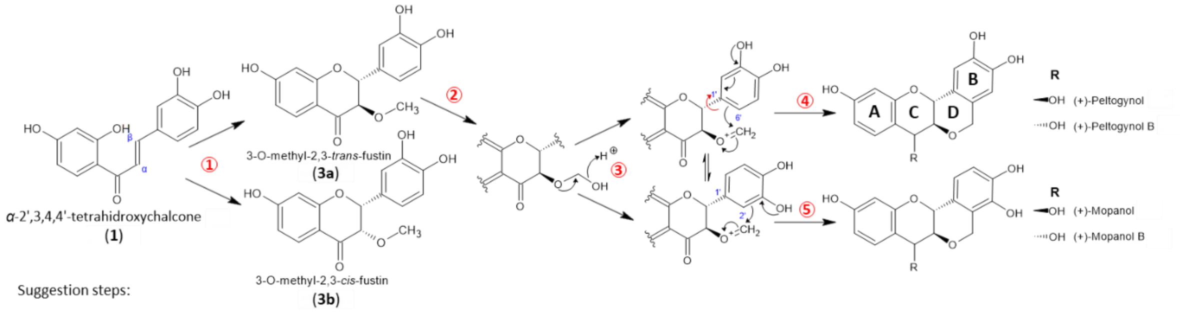
david.quimicas2@gmail.com

1-1Instituto de Ciências Exatas, Programa de Pós-Graduação em Química, UFAM, Av. Gen. Rodrigo Octávio, 6200, Manaus, AM, Brazil. 2-Coordenação de Tecnologia e Inovação, Instituto Nacional de Pesquisas da Amazônia – INPA, Av. André Araújo, 2936, Manaus, 69067-375, Brazil.

Peltogyne catingae Ducke (Detarioideae, Fabaceae), known as "roxinho" or "pau-roxo,"[1] is an Amazonian species whose heartwood has a characteristic purple color due to the presence of peltoginoids, flavonoids modified by the addition of a D ring.[2] In addition to peltoginoids, other phenolics, such as flavones, flavonones, chalcones, and phenolic acids, have been reported in the wood of *Peltogyne* spp. In this context, the present study describes the isolation and identification of constituents present in wood residues of *P. catingae*. The wood waste was supplied by the Wood Technology Laboratory (LTM - INPA), dried, identified, and processed, and subsequently subjected to extraction with methanol at room temperature. In a previous study of the methanolic extract, we identified the peltoginoids (+)-peltoginol, (+)-mopanol, and their epimers,[3] and continued fractionation by column chromatography using silica gel (70-230, 230-400 mesh) and Sephadex LH-20 resulted in the isolation and identification of chalcone α-2',3,4,4'-tetrahydroxychalcone (**1**), the peltoginoid 2,3-*trans*-pubschin (**2**) and the flavonoids 3-methoxy-2,3-*trans*-fustin (**3a**) and its epimer 2,3-*cis* (**3b**). We suggest that chalcone **1** and flavonoids **3a**, **b** are biosynthetic precursors of *P. catingae* peltoginoids, as shown in Scheme 1. The substances were identified by 1D and 2D NMR and Mass Spectrometry, with data confirmed by comparison with the literature. This study represents the first report of these substances in *P. catingae* and expands the phytochemical profile, highlighting the scientific value added to its wood residues.

Keywords: *flavonoids, chalcone, isomers, Fabaceae, NMR*

Scheme 1. Suggested biosynthesis of peltogynoids



1- Ciclization Anel C, oxidation and metilation in C-3; **2-** Oxidation and reduction 3-methoxyl; **3-** Free rotation of the 2-phenyl group; **4-** Oxidative cyclization to peltogynoids;
5- Oxidative cyclization to mopanols.

[1] Kochanovski, F.J., Nogueira, L.H., Rosa, M.P., Mansano, V.F. & Sartori, Ângela L. (2025) *Phytotaxa* 688: 1–68.;
[2] Taga, Y.; Yamauchi, K.; Mitsunaga, T. (2025) *Wood Sci. Technol.*, 59: 11-33; Malan, E. & Roux, D. (1974). *Prytochemistry*, 13: 1575-1579.
[3] Oliveira, D. S., de Souza, P. B., Queiroz-Junior, L. H. K., Scoaris, D. O., da Silva, L. P., do Nascimento, C. C., & Lima, M. D. P. (2025). *Quim. Nova*, *48*: 1-5.