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LACTONES ISOLATED BY HPCCC FROM CITOTOXIC EXTRACT OF *Sextonia rubra* WASTEWOOD

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Sextonia rubra (Lauraceae) is a significant Amazonian timber species and the sole representative of its genus in Brazil. Despite industrial value, its wood processing generates large amounts of underutilized residues. Phytochemical investigations revealed the presence of γ-lactones, rubrenolide, and rubrynolide, as biomarkers and are responsible for biological activities. In this work, the hexane extract of *S. rubra* bark was analyzed against tumor cells and fractionated by high-performance countercurrent chromatography (HPCCC). The hexane extract was subjected to cytotoxic assays, and 600 mg of sample was processed using HPCCC with a semi-preparative column 136mL in step-gradient normal-phase elution. The solvent systems used were hexane–ethyl acetate–methanol–water (HEMWat, v/v/v/v) 1/0/1/0, 9/1/9/1, 5/1/5/1, 3/1/3/1, 2/1/2/1, 6/5/6/5, 5/6/5/6, and 1/2/1/2[1]. The lower phase of 1/0/1/0 was employed as the stationary phase and the upper phases of the systems as mobile phases, with stationary phase retention (*Sf*) = 86%. Fraction F77 (36.0 mg) was further purified in the analytical 26mL column in a step-gradient, normal elution mode (HEMWat) 5/2/5/2, 2/1/2/1, 3/2/3/2, and 6/5/6/5[1], *Sf* = 75%. The compounds were determined by mass spectrometry (MS) and nuclear magnetic resonance (NMR). Hexane extract demonstrated inhibition of growth by 60–92%. The IC_{50} values (µg/mL) were: 8.11 for prostate carcinoma (PC3), 20.45 for astrocytoma (SNB-19), 20.47 for human colon carcinoma (HCT-116), and 9.12 for promyelocytic leukemia (HL-60). The procedure in one step generated 01-F35 (3.9 mg) (**1**) and 01-F69 (1.6 mg) (**2**), while the isolation in the analytical column yielded 01-F77-64 (4.2 mg) (**3**). The MS and NMR analyses suggested the presence of γ-lactones majoranolide (**1**), majorenolide (**2**) and majorynolide (**3**) [2]. The results show that *S. rubra* wastewoods are a valuable source of bioactive compounds with potential for the development of new anti-tumor agents. The HPCCC was efficient in isolating minority lactones without the use of any adsorption chromatography procedure.

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