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In vivo and *in vitro* anti-inflammatory activities of two chromones isolated from Dictyoloma vandellianum

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Dictyoloma vandellianum is a tree species that belongs to the Rutacea family, with widespread occurence in Brazil. It is known to contain alkaloids, limonoids, chromones, among other compounds. The dichloromethane extract of the root bark was fracionated and purified using HPLC. The following chromones were isolated: 6-(3-metylbut-2-enil) 5-(methoxy) allopteroxylin (CR3 – 98% purity) and 5-(methoxy) cneorumchomone (CR5–95% purity). They were identified and structurally determined by mass and UV spectroscopy, also by one and two dimensional NMR spectroscopy. The pharmacological activity was assessed using *in vitro* assays that evaluated the chromones' effect on the cell viability, nitric oxide and cytokines production in macrophages J774. The chromones exhibited potent suppressive activities, reducing the production of nitrite (20-5 µM) and IL-6 cytokine (20 µM) on macrophages stimulated with LPS+IFN-γ, showing no cytotoxicity for the used concentrations. *In vivo* assays were performed in order to identify the antinociceptive effect of CR3 and CR5. CR3 (100 mg/kg/IP) induced motor impairment, whereas treatment with CR5 (100 mg/kg/IP) preserved motor functions. Therefore, further *in vivo* assays were performed with CR5. Systemic pretreatment with CR5 (50–0,78 mg/kg/IP) produced antinociceptive effects on the formalin test on both early and late phases. Acute pretreatment of mice with CR5 (50–3,125 mg/kg/IP) produced a strong and long-lasting anti-edematogenic and antinociceptive effect against complete Freund's adjuvant (CFA)-induced hyperalgesia and edema, that persisted until 24 hours after the CFA injection. These results showed the activities and potential use of CR5 as an anti-inflammatory.

Biography

Luíza Carolina França Opretzka has completed her Bachelor in Pharmacy from the Federal University of Bahia (UFBA), Brazil, and is doing her Master's degree in Pharmaceutical Sciences in the same institution. She is currently conducting her research in the Laboratory of Pharmacology and Experimental Therapy (UFBA) in the field of discovery of novel analgesic and anti-inflammatory drugs from natural products. She has experience with drug discovery from natural products, pain and inflammation pharmacology and neuropathic pain models.

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