

**CYTOTOXICITY AND PHYTOCHEMICAL PROFILING OF *Dillenia indica*  
AQUEOUS LEAF EXTRACT: IDENTIFICATION OF RUTIN AND  
DETERMINATION OF CC<sub>50</sub>.**

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**INTRODUCTION:** *Dillenia indica* is a tree native to tropical Asia and is popularly known as "Coco-de-Adão" in Southern Brazil. Its leaves and fruits are used in traditional medicine to treat fever, dysentery, constipation, and stomach ailments. In addition to its ornamental use, the fruit is commonly employed in folk medicine, and to a lesser extent, the leaves. The fresh fruits are macerated with ethanol or sugarcane liquor (aguardente) for external use in the topical treatment of joint pain, muscle pain, wounds, and psoriasis. In vitro, cytotoxicity assessment is a valuable parameter for predicting the safe range of the extract and for determining non-toxic concentrations before evaluating its potential bioactivity against specific agents or organisms. **OBJECTIVE:** To assess the cytotoxicity of the aqueous leaf extract of *D. indica*, determine its CC<sub>50</sub> value, and characterize its phytochemical profile. **MATERIALS AND METHODS:** The cytotoxicity of the leaf aqueous extract was investigated in Vero E6 cells using MTT and Neutral Red (NR) assays. Briefly, cell monolayers, previously seeded in 96-well plates, were exposed to different concentrations (6–1000 µg/mL) for 24 h. Phytochemical characterization was performed by ultra-performance liquid chromatography with a diode array detector (UPLC-DAD) following a previously established method, employing acidified acetonitrile as mobile phase A and 0.1% formic acid as mobile phase B in a gradient system, using a 2.1 × 100 mm CORTECS UPLC T3 1.6 µm column. **RESULTS AND CONCLUSIONS:** MTT and NR assays exhibited a similar cytotoxicity profile with concentration-dependent effects. Both mitochondrial function and cell viability decreased by more than 15% from 100 µg/mL. The CC<sub>50</sub> values were 117.1 µg/mL for the NR assay and 194.1 µg/mL for the MTT assay, indicating a slightly more pronounced loss in cell viability. Chromatographic analysis revealed the presence of rutin, a flavonoid with antioxidant and anti-inflammatory properties. The present study defined non-toxic concentrations for future bioactivity testing and identified the presence of an important flavonoid.

**Keywords:** Vero E6 cells; Flavonoid; UPLC-DAD.

**Financial support:** FAPERGS, CAPES, Universidade Feevale.