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THE ANTITUMORAL EFFECT OF THE HYDROALCOOLIC EXTRACT OF THE FRUIT OF MYRCIARIA DUBIA (KUNTH) MCVAUGH (CAMU-CAMU)

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Introduction: The fruit of *Myrciaria dubia* is known to present the highest vitamin C content among the fruits of the Amazon region. Several studies have demonstrated the benefits of its use, such as anti-inflammatory, hepatoprotective, antimicrobial and antigenotoxic activities.

Objective: The present work investigated the cytotoxic action of the crude hydroalcoholic extract of the *Myrciaria dubia* fruit bark on neoplastic cells of the acute monocytic leukemia (THP-1) and chronic myeloid leukemia (K562) lines.

Methods: Cell viability was assessed by MTT (-3- (4,5-dimethyl-2-thiazole) 2,5-diphenyl-2-H-tetrazolium bromide). For the in vivo test, 16 Swiss female mice underwent the Erlich ascites tumor induction and were distributed in 2 groups of 08 animals. One group received treatment with the hydroalcoholic extract, by gavage, at the concentration of 1 g of extract per kg of animal weight. At the end of the experiment, the ascitic fluid was removed from the animals to perform a total cell count and morphometric analysis, and the blood was checked for inflammatory markers and hepatic and renal profiles, as well as lipid and blood glucose measurements.

Results: The results showed a significant reduction in weight and waist circumference in the animals treated with the extract, with the weight being 11% lower in this group, $p < 0.01$. In the biochemical analyzes, a significant decrease in glutamic oxalacetic transaminase (ALT) ($p < 0.01$) and glucose, cholesterol and urea parameters ($p < 0.05$) were observed. The in vitro test demonstrated a high cytotoxic potential of the extract for the neoplastic cells, especially those of the chronic myeloid leukemia (K562) strain, with a significant reduction in cell viability even in the lowest extract concentration and $IC_{50} = 0.28 \pm 3.13$ mg extract.

Conclusion: The anti-inflammatory and protective effects of tissue damage of the *M. dubia* fruit are confirmed and the cytotoxic potential of the hydroalcoholic extract of the fruit peel in leukemic cells demonstrated, which allows the fractionation of the extract to potentiate the demonstrated effects and identification of bioactive phytochemical compounds.

Key words: *Myrciaria dubia*, antitumoral, antineoplastic, erlich tumor, phenolic compounds

Biography

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