



Antitumor activity in extracts from industrial solid residue of *Cyperus articulatus* var. *nodosus* from Amazon rainforest

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One hectare of an agro-industrial plantation of *Cyperus articulatus* var. *nodosus* Lin.; Cyperaceae, so called “Priprioca” is in development at UFOPA farm in the west of Amazon. *Cyperus articulatus* is a perennial specie found in Americas, Africa, Asia and Austria, in Brasil it is found mainly in Amazon region. Both essential oil and extract of “Priprioca” are used by Brazilian cosmetics industries¹. Our experiment produced 1,000 kg of rhizomes on harvest from which steam distillation extraction led to a fragrant essential oil (0.45%) an hydrosol (180kg) and a solid residue (ca. 990 kg) which currently do not possess any specific destination. Aiming to find alternative uses for these residues, phytochemical, biological and cosmetic formulation studies has been made in our P&DBIO lab. The residue extracted in laboratorial scale, first in ethanol then partitioned with water and hexane, methylene chloride and ethyl acetate produced extracts which has been submitted to chromatography producing fractions which has been analyzed by GC-MS method. The following conditions were performed: GC-MS Agilent Model HP-6890 coupling to a selective mass detector, column HP-5MS (30m x 0.25mm x 0.25 µm); Injector Temperature = 220°C; detector = 250°C; column = 60°C; 3°C.min⁻¹, 240°C (20 min), carrier gas = He 1,0mL.min⁻¹. The chemical identification of compounds was done by calculating the analyte retention indexes, using co-injection of a mixture of hydrocarbons patterns (C8 to C22), compared to the electronic equipment library (NIST-11) and with literature data. *C. articulatus* is extensively used in ethnomedicine showing antimalarial, sedative, hepatoprotector, contraceptive, NSC and even insecticide activity². Our studies on the specie was to establish biological properties such cytotoxic potential based on microcrustacean *Artemia salina* and anticancer assays. In this work, antitumor activity has been shown for chromatographic fractions of the ethanolic extract of “Priprioca” solid residue in concentrations higher than 10² µg/mL inhibiting cell growth of tumor cells of glioma U251, breast MCF-7 and lung NCI-H460. Moreover, value of Total Growth Inhibition (TGI) in antiproliferative activity for the extract was lower than 100 µg/mL for glioma U251 cells, while to other tumor cells TGI value of extract was higher than value for glioma cells. GC-MS analysis of ethanolic extract showed substances with molecular mass higher than m/e 200 and as major compound a diterpene of m/e 234 (ca. 20%). The results show the possibility of uses of the industrial residues from Amazon Rainforest for a sustainable economy.

1. BARATA, L. E. S. Economia verde – Amazônia. Cienc. Cult. SP, v. 64, no. 3, 31-35, 2012.

2. POTYGUARA, C; ZOGHBI, M. Priprioca: um recurso aromático do Pará. MPEG, UEPA, Belém-PA, 2008. 203p.

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