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IN VITRO CYTOTOXIC E ANTI-INFLAMMATORY ACTIVITY OF *Ayapana triplinervis* ESSENTIAL OIL

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A *Ayapana triplinervis* (Asteraceae) is an aromatic species from the Amazon region found under the morphotypes "white japana" and "purple japana". The aim of this study was to evaluate the *in vitro* citotoxic and anti-inflammatory activity of *Ayapana triplinervis* essential oil (AtEO). The specimen was collected in Mirasselvas, Pará, extracted by hydrodistillation in a modified Clevenger (3 hours). A voucher (MG-241933) was incorporated into the Herbarium of Universidade do Estado do Pará, and registered in SISGEN (A090EB2). The chemical composition was analyzed by gas chromatography coupled to mass spectrometry (GC-MS). The oils were evaluated (MTT assay) against gastric ascites (AGP01), glioblastoma (AHOL), lung cancer (A549), and non-malignant murine macrophages (RAW 264.7). The MTT assay was performed to evaluate cell viability, and the nitrite method was used to evaluate the anti-inflammatory activity. A total of 23 chemical constituents were identified; the main compounds were the oxygenated monoterpene 2,5-dimethoxy-*p*-cymene (45.0%) and the hydrocarbon sesquiterpenes β-selinene (19.2%) and (*E*)-caryophyllene (18.4%). AtEO showed cytotoxicity in all cell lines, AHOL1 (IC_{50} 5.75 µg/mL), AGP-01 (IC_{50} 12.53 µg/mL), A549 (IC_{50} 6.56 µg/mL), RAW 264.7 (IC_{50} 13.41 µg/mL), with twice as much selectivity in AHOL1 and A549 strains (Seletive index of 2.75 and 2.04, respectively), compared to macrophage strains, demonstrating its antiproliferative action. AtEO showed regulation in nitrite levels (116.7±12.66, 89.44±1.77, 128.4±5.33 nM), highlighting the anti-inflammatory effect of the oil. The results show significant *in vitro* cytotoxic and anti-inflammatory activities. These findings endorse the therapeutic potential of AtEO in therapeutic strategies against cancer and inflammation.

Keywords: japana; antiproliferation; inflamation; monoterpenes.

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