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Título	Essential Oils Obtained from Aerial Eugenia punicifolia Parts: Chemical Composition and Antiproliferative Potential Evidenced through Cell Cycle Arrest
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Resumo	Essential oils (EOs) of the leaves of three Eugenia punicifolia specimens from two different Reservation Parks, namely Parque Nacional das Nascentes do Rio Parnaíba (EpNRP-I and EpNRP-II) and Parque Nacional da Chapada das Mesas (EpCM), in the state of Maranhão, Brazil, were extracted by hydrodistillation and investigated by gas chromatography coupled to mass spectrometry. Principal component and hierarchical cluster analyses indicated differences between the samples. Antiproliferative EOs activity was determined for U-251 (glioblastoma), MCF-7 (breast adenocarcinoma), NCI/ADR-RES (multidrug-resistant ovarian adenocarcinoma), OVCAR-3 (ovarian adenocarcinoma), HT-29 (colorectal adenocarcinoma), and HaCaT (non-tumor keratinocyte) cell lines applying the colorimetric method using 3-(4,5-dimethyl2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide (MTT) to determine the GI50 (50% growth inhibition) concentration. The extraction yields of the analyzed EOs were 0.58, 1.42 and 0.84%. The main constituents identified in two samples were α-pinene (49.75%), 1,8-cineole (13.77%) and α-terpineol (7.32%), and in the third sample, germacrene B (16.25%), (E)-caryophyllene (13.21%) and β-pinene (12.81%). The main GI50 results for sample EpNRP-I were noted for the U-251 (2.13 µg mL−1) and MCF-7 (6.72 µg mL−1) tumor lines. For the non-tumoral line HaCaT, the calculated GI50 was higher than the positive control comprising doxorubicin hydrochloride (13.35 µg mL−1). In addition, a flow cytometry analysis revealed that this same sample arrests the cell cycle of the MCF-7 line in the second interphase stage.
Fomento	Fapesp