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Phytochemical and chemopreventive activities of seven genotypes of *EuterpeedulisMartius* – Juçara palm fruits

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EuterpeedulisMartius (Arecaceae) is a native Atlantic tropical forest palm popularly known as white palm heart, suit palm heart or Juçara, been largely distributed occurring along the Brazilian Atlantic Coast almost reaching Argentina¹. Juçara Palm heart is due its economic value as delicacy, the second non wood product most explored in the Atlantic forest. This exploration contributes to the environment degradation with intense extractivism^{2,3,4}. Therefore, this specie is threatened of extinction, since no regrowth occurs after cutting for palm heart extraction and frequently legal orientations for preservation are disregarded⁵.

Juçara fruit has received attention due its similarities to the *Euterpeoleracea* (Açaí) widely consumed as nutritional source. The aim of this study was to evaluate pulp fruit of seven populations of *E. edulis* (J1-J7) from different ecological regions concerning cytotoxicity, bioactive compounds, antioxidant and chemopreventive activities. The chemical composition of fruits of *E. edulis* was assed using ESI(-)-FT-ICR-MS. The ions detection was reliable (with mass error < 4.5 ppm), where 14 organic compounds were identified and classified into three phytochemical classes: flavonoids (50,0%) phenolic acids (35,7%), and anthocyanins (14,2%). The varieties J1 and J4 presented higher polyphenol content, while J2 and J5 higher anthocyanin tenor. ESI(-)-FT-ICR MS identified Cyanidin-3-rutinoside (J1, J2, J3, J4, J5, J7), protocatechuic acid, Methylhydroxybenzoatehexoside and rutin (J1 to J7) and Malvidin-glicoside (J2 to J5).

The values presented for ABTS antioxidant capacity varied of 5.88 ± 2.06 mg. g⁻¹ (J2) to 88.51 ± 13.56 mg. g⁻¹ (J6), these values agree with those determined by ABTS for *E. oleraceae*, found on other works. SNP anti-oxidant activities were detected for J3 (22.77 ± 0.15 mg. g⁻¹) and for J4 (13.52 ± 2.52 mg. g⁻¹). Among the seven genotypes of juçara analyzed, J6 presented higher antioxidant capacity and significant amounts of total polyphenols. All juçara genotypes evaluated did not present cytotoxicity against Murine hepatoma (Hepa 1c1c7) until the highest concentration evaluated ($1-1000 \mu\text{g mL}^{-1}$). The J2, J3, J4, J5 and J6 Juçara genotypes presented significant iNOS inhibition with percentage of $64.67 \pm 5.43\%$, $53.90 \pm 7.91\%$, $50.55 \pm 2.72\%$ and $61.46 \pm 6.32\%$ respectively (Table 2). The NF-κB inhibition were slightly detected for the varieties of J3 ($28.95 \pm 6.22\%$) and for J6 ($10.11 \pm 3.99\%$). The chemoprevention biomarker, quinone reductase was significantly induced by J6. Pulp fruit from plants J3, J4, J6 and J7 significantly reduced the inflammatory cytokine TNF-α. The plant J6 was selected with potential for cultivation and consumption.

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