



SCAVENGER POTENTIAL OF DIFFERENT GENOTYPES OF AÇAÍ (Euterpe Oleracea) IN CELL-FREE SYSTEM AND NEURON-LIKE CELLS (SH-SY5Y)

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Track

Alimentação e saúde (AS)

Keywords

anthocyanins, GSH oxidation assay, Dichlorofluorescein-diacetate assay Açai (Euterpe oleracea) is a native fruit from northern Brazil, whose consumption is increasing owing to its high protein, lipid, fiber, and mineral content

and the presence of anthocyanins, mainly cyanidin 3-glucoside and cyanidin 3-rutinoside, and the carotenoids lutein, α -carotene and β -carotene. The anthocyanins of açai pulp are the main contributors to its antioxidant properties and, this way, fruit breeding programs could result in increase of bioactive compounds and antioxidant activity. Besides, for the antioxidant activity evaluation of fruits and vegetables, a combination of several chemical and cell culture assays are available. Thus, this study aimed to evaluate the scavenger potential of hydroethanolic extracts (0.5, 5.0 and 50 $\mu\text{g.mL}^{-1}$) obtained from six açai genotypes (L09P09, L22P13, BRS-pamista, L11P09, L06P13, and L04P16) in different reaction system types. In order to evaluate the antioxidant potential against hydrogen peroxide and hydroxyl radicals in a cell-free system, assays of glutathione oxidation (GSH) and deoxyribose were carried out, respectively. To evaluate the effects of açai genotypes in a cell medium, SH-SY5Y cells were insulted with H_2O_2 and free radicals generation was quantified by DCFH-DA assay. L22P13 genotype showed the highest total content of anthocyanins (64,83m mg.g^{-1}), while L06P13 showed a high content of total carotenoids (41,81 mg.g^{-1}). The hydroethanolic extracts from different genotypes of açai showed a protective effect (13–62%) on SH-SY5Y cells insulted by H_2O_2 at a concentration of 50 $\mu\text{g.mL}^{-1}$. The studied genotypes were not able to prevent the oxidation of GSH or deoxyribose. These results suggest an absence of scavenger activity against hydrogen peroxide and hydroxyl radicals in a cell-free system. However, in a cell-system using SH-SY5Y cells, genotypes of açai were able to remove oxygen reactive species. Thus, further in vitro and in vivo research should be carried out in order confirm the benefic potential of açai genotypes.