



Tucumã, an Amazonian fruit capable of protecting fibroblast DNA from damage

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ABSTRACT (upto 300 words)

The Biodiversity of the Amazon Forest is unique in the world and recognized for its enormity of food and therapeutic plants, used by traditional peoples, such as indigenous and riverine people. Among these plants is tucumã (*Astrocaryum aculeatum*), a palm tree, whose fruits previously studied by our research group (Funati-UFSM) showed that tucumã presents in its composition flavonoids, rutin, catechin and quercetin, molecules with excellent antioxidant potential. However, it has not yet been evaluated whether the fruit could protect fibroblasts, which are the main cells of the skin, from damage caused by exposure to hydrogen peroxide, a damage-inducing agent. To evaluate in vitro the potential protective effect of tucumã on skin cells exposed to a damage inducer. Cells of the HFF-1 lineage (fibroblasts) were commercially acquired and cultivated under standardized conditions. Hydrogen peroxide (H₂O₂) at a concentration of 10 µM was used as a stressor agent, simulating skin aging. After 2 hours of exposure, tucumã was added at a concentration of 100µg/mL, and after 72 hours, the levels of DNA damage were analyzed using the 8-hydroxy-deoxyguanosine (8-OH-dG) test, according to the instructions of the manufacturer ABCAM. The untreated cells showed similar levels to those treated with tucumã, thus showing that tucumã is

not capable of causing DNA damage. When comparing cells treated with H₂O₂ to those not treated or treated only with tucumã, there is a 60% increase in DNA damage levels. Finally, when we analyzed the cells treated with H₂O₂ and tucumã, the results showed a reversal of the damage caused by H₂O₂ by about 30%. Our results, although initial, demonstrate a protective effect of tucumã against oxidative DNA damage, indicating a possible beneficial effect of tucumã and the potential use in dermal or ingestible formulations for aesthetic and/or clinical purposes for the skin.

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BIOGRAPHY (upto 200 words)

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