

Antioxidant Juice Prevents UV- Induced Skin Damage in Rats

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Abstract : Skin is susceptible to photo damage induced by exposure to sunlight, or ultraviolet (UV) radiation, which induces breakdown of extracellular matrix, DNA degradation, skin cell lesion and apoptosis, and development of cancer. Phytonutrients demonstrate protective effects against UV damage. The purpose of this study was evaluating the effect of an antioxidant juice (AJ) containing Brazilian natural products upon skin damage. The juice was produced by Metabolics®. Male Wistar rats were divided in 4 groups: Animals receiving the antioxidant juice (AJ): orange, carrot, honey, tomato extract, avocado, ginger and camu-camu (Brazilian fruit, a major source of vitamin C) ad libitum for 21 days; or water (C), subdivided in groups exposed or not to UV radiation for 2 non consecutive days, during five hours each day, after 15 days of juice supplementation. On the 22nd day, rats were killed by decapitation and epithelium samples from the dorsal skin removed, fixed in bouin and embedded in paraffin. The sections were stained with hematoxylin and eosin or mallory and picosirius red. Isolated DNA was submitted to electrophoresis (1.8% agarose gel, 0.5% ethidium bromide). UV radiation significantly induced sunburn of superficial epithelial cells of C, AJ treatment reduced this effect. Collagen changes were observed in UV groups, yet AJ treatment prevented collagen degradation. UV radiation induced significant DNA degradation, in C, which was prevented by AJ treatment. The antioxidant juice consumed chronically protected against acute skin damage.

Keywords : nutraceuticals, antioxidants, photoprotection, uv radiation

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