

Antioxidant and photoprotective effects of blanch water, a byproduct of the almond processing industry.

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Abstract:

The aim of the present work was to evaluate the antioxidant and photoprotective effect of blanch water (BW), a byproduct of the almond processing industry. The polyphenolic content of a BW extract, the level of proanthocyanidins and the vanillin index determination were determined. The antioxidant activity and the radical scavenging activity of the BW were evaluated by a range of in vitro tests. The in vivo photoprotective effect was investigated using a formulation containing 2% of the BW extract on skin erythema induced by acute UV-B exposure in twelve volunteers. Results confirmed the presence of added-value antioxidant compounds in the industrial BW extract, and the most representative compounds were naringenin-7-O-glucoside and kaempferol-7-O-rutinoside. The proanthocyanidin content was 71.84 ± 5.21 cyanidin equivalents/g of BW extract. The good antiradical activity of the BW extract was demonstrated in both the DPPH• test and in the Reducing Power test. The percentage inhibition of erythema obtained using a formulation of BW was 50.48, value clearly demonstrating an effect against photooxidative damage in vivo.