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Enhanced nutraceutical potential of gamma irradiated black soybean

extracts.

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Abstract

Radiation processing of soybean, varying in seed coat colour, was carried out at dose levels of 0.25, 0.5 and 1kGy to evaluate their potential anti-proliferative and cytoprotective effects in an *in vitro* cell culture system. Irradiated and control black (Kalitur) and yellow (DS9712) soybean extracts were characterized in terms of total phenolics, flavonoids and anthocyanins, especially cyanidin-3-glucoside (C3G). Using an epithelial cell line, BEAS-2B the potential cytoprotective effects of soybean extracts were evaluated in terms of intracellular ROS levels and cell viability. The most relevant scavenging effect was found in Kalitur, with 78% decrease in ROS, which well correlated with a 33% increase in C3G after a 1kGy dose. Results evidenced a correspondence between *in vitro* antioxidant activity and a potential health property of black soybean extracts, exemplifying the nutraceutical role of C3G. To our knowledge this study is the first report validating the cytoprotective effects of irradiated black soybean extracts.

Research Highlights

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