

***Orbea variegata* (L.) Haw. (Apocynaceae) attenuates the progression of UV/Sulfuric acid-induced skin carcinogenesis in Swiss albino mice.**

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Abstract:

Skin cancer is the most common type of malignant tumor worldwide, and poses a substantial risk to human health, according to the World Health Organization, skin cancer ranks among the top five most common cancers globally. Our study aims to evaluate the curative effect of *Orbea variegata* which is an ornamental plant widespread in the Mediterranean region, notably in Morocco. Recent studies have revealed that several plants have anticancer properties on human cell lines associated with acute promyelocytic leukemia, chronic myeloid leukemia, and hepatocellular carcinoma. However, *in vivo* evidence of its anticancer activity is currently lacking. Our study characterized the hydroethanol extract of *Orbea variegata* evaluated its antioxidant activity, and tested its curative effect on UV/Sulfuric acid-induced skin carcinogenesis in immunocompetent mice. Based on the analysis, our extract was found to be abundant in phenolic compounds (29,435 mg GAE/g), flavonoids (6,711 mg GAE/g), and tannins (274.037 mg EC/g). Additionally, the extract demonstrated significant antioxidant activity, as confirmed by IC₅₀ values of 8.803 mg/ml and 3.160 mg/ml for FRP and TAC respectively. The oral administration of this plant extract at doses of 1 g/kg and 2 g/kg showed a considerable reduction in induced skin hyperplasia, fibrosis, and inflammation. This positive effect was closely linked to a notable decrease in oxidative stress, as evidenced by lower levels of lipid peroxidation and the restoration of endogenous antioxidant enzyme activity. This research provides a promising avenue for exploring the mechanisms of action and signaling pathways targeted by *Orbea variegata* extract, which has potential implications for the field of dermatology.

Keywords: *Orbea variegata*; carcinogenesis; phytochemical study; Antioxidant activity; and Oxidative stress.