

## Anti-Cancer Activity of the Phytochemical Indicaxanthin: *In Vitro* and *In Vivo* Studies against Melanoma

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Epidemiologic studies show promising results supporting the role of natural compounds in the chemoprevention of melanoma. Indicaxanthin is a betalain pigment from cactus pear fruit, capable of modulating specific redox-driven pathways involved in the inflammatory reaction *in vitro* (1). Interestingly, indicaxanthin is bioavailable and exerts strong anti-inflammatory effects when orally administered at nutritionally-relevant doses in rats (2). A causative link between inflammation and melanoma has recently been explored. In line with this, we investigated the antitumor potential of indicaxanthin *vs* melanoma both *in vitro* and in *in vivo* mouse model.

Indicaxanthin inhibited proliferation of human A375 melanoma cells. The inhibition measured at 24h was concentration-dependent in the range between 50 and 200  $\mu$ M, with a maximum of 52% at the highest concentration. Indicaxanthin induced cell apoptosis as cytofluorimetrically revealed by double AnnexinV/PI staining. Moreover indicaxanthin time-dependently inhibited the activation of NF- $\kappa$ B, a transcriptional factor conferring tumor survival capacity and escape from apoptosis. In addition, the expression of Bcl-2 and c-FLIP, two inhibitors of apoptosis the expression of which is modulated by NF- $\kappa$ B, was decreased.

More importantly, indicaxanthin (3.2 mg/kg) orally-administered for 15 days to mice when the injected tumor had reached an average 3-4 mm diameter, induced a reduction of tumor volume (86%) and weight (83%).

### Biography:

Dr. A Attanzio is a Researcher in- BIO/10 Biochemistry and completed his PhD in Pharmaceutical Sciences and got a Graduate degree in Biomedicine with a vote of 110/110 and praise. He is a Patent Inventor and Guest Editor for Journal of Food Quality. and is the Author of 25 publications on international biochemical and nutraceutical journals.