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Astaxanthin reduces MMPs to suppress melanoma proliferation and trigger fiborblasts collagen production *in vitro* and *in vivo*

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The objective of this study was to assess astaxanthin as an anticancer agent to resist melanoma cells (A375 and A2058). Melanoma was reduced in cellular migration via wound healing and invasion assay to show a dose-dependent manner when treated with astaxanthin. Also could reduce melanoma cells migration by inhibition of MMP-1, -2 and -9 expressions. In addition, DCFDA assay showed that the cellular ROS production was reduced. The cellular proliferation assay also showed a dose-dependent manner to present a high inhibition. One-dimensional flow cytometric analysis demonstrated that astaxanthin stimulated a cell cycle arrest at the G1 phase. Measurements via a double fluorescence stained image of annexin V-fluorescein isothiocyanate (FITC)/propidium iodide (PI) to verify the apoptotic cell death mechanism. Antitumor efficacy of astaxanthin declined tumor size significantly in xenograft model. The results indicate that astaxanthin presented a promising inhibition of melanoma tumor growth *in vivo* and *in vitro*.

Biography

Hsin-Yu Chou, a fresh year PhD at Graduate Institute of Biomedical Engineering (National Chung Hsing University), graduated from the Department of Graduate Institute of Medicine, College of Medicine, Kaohsiung Medical University, Taiwan. His research area focused on phototoxic injury and skin cancer research.

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