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Anti-cancer Activities of β -mangostin Against Oral Squamous Cell Carcinoma (2022) Journal of International Dental and Medical Research, 15 (1), pp. 81-87.

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Abstract

Oral squamous cell carcinoma (OSCC) is one of malignant tumors with poor prognosis resulting in major morbidity and mortality. The actual curative treatment is usually chemotherapy with concurrent radiation, sometimes combined with surgery. Unfortunately, the strength of the drugs used in chemotherapy causes side effects that can bring discomfort and inconvenience. Herbal remedies have been used for thousands of years with very minimal side effects and clearly merit extended research for their ability to selectively kill cancer cells. The genus of Garcinia is well known as a medicinal plant in Southeast Asia. β -mangostin, a xanthone from the pericarps of various species of Garcinia has been shown to exhibit anticancer activities in various human cancer cells. However, no attempt has been made to explore the potential benefits of this xantone for treatment and/or prevention of OSCC. Here, we report that β mangostin exhibits anti-proliferative effect and induces apoptosis in human oral squamous cell carcinoma cell lines HSC-3 and Ca-922. MTT assay showed that β -mangostin markedly inhibited proliferation of HSC-3 and Ca-922 cells in a dose and time-dependent manner. The apoptosis induced by β -mangostin was clearly detected by flow cytometry in both cell lines and confirmed by caspase activity assays. Moreover, quantitative RT-PCR revealed that apoptotic activity by β -mangostin in HSC-3 and Ca-922 cells is associated with an up-regulation of caspase - 8 and pro-apoptotic PUMA genes. These results identify β -mangostin as a potential therapeutic agent for human oral squamous cell carcinoma © 2022. Journal of International Dental and Medical Research. All Rights Reserved.

Author Keywords

Anti-cancer; Apoptosis; Oral squamous cell carcinoma; B-mangostin

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