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Cytotoxicity effect of *Citrullus colocynthis* on oral squamous cell carcinoma

Jahangir Gavanji^{1,2}, Shahin Gavanji^{1,2,3}, Azizollah Bakhtari⁴ and Behrouz Larki^{1,2}

¹National herbal medicine center of Iran, Isfahan, Iran

²Islamic Azad University, Iran

³University of Isfahan, Iran

⁴Isfahan University of Technology, Iran

Statement of the Problem: Oral squamous cell carcinoma is the sixth common cancer in the world. Up to now, many endeavors have been done to cure oral squamous such as surgery, radiotherapy, and chemotherapy. The clinical effectiveness of chemotherapy is limited, which is due to its side effects, toxicity and drug resistance. Traditional medicine is being used for treatment of some diseases like cancers. Hence, the aim of this study is to examine the cytotoxicity effect of *Citrullus colocynthis* on oral squamous cell carcinoma.

Methodology & Theoretical Orientation: In this *in vitro* study, oral squamous cell carcinoma cells (KB) and normal rat fibroblast cells (L929) as control group were cultured in enriched RPMI 1640 medium. Then extract of *C. colocynthis* was procured from the Iranian Research Center for herbal and traditional medicine and the cells were treated with 0.1-50 µg/mL concentration of the extract for 24, 48 and 72 hours. Thereafter, the viability of the cells was assessed by Methyl toluidine blue (MTT) method. Statistical analysis was performed with SPSS 20, using one way ANOVA.

Findings: The half-maximal inhibitory concentration (IC₅₀) of *C. colocynthis* extract for KB cells and L929 cells were 12.18 and 43.53 µg/ml respectively, demonstrating that higher concentration of *C. colocynthis* extract is necessary to reach IC₅₀ concentration for L929 cells (about 3.57 times).

Conclusion & Significance: This study showed that the alcoholic extract of *C. colocynthis* exerted cytotoxic effects on tumoral cells of oral squamous cell carcinoma. Moreover, it exerted more cytotoxic effects on tumoral cells compared to normal cells.

jahangir.gavanji@gmail.com

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