

# 17<sup>th</sup> WORLD DERMATOLOGY CONGRESS

September 25-26, 2017 Dubai, UAE

## Cupressus sempervirens extract inhibited human basal cell carcinoma tumorigenesis, local invasion and angiogenic property

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**Background:** Basal cell carcinoma, a noninvasive and rarely metastatic tumor with clinical and histological involvement of basal epithelial cells occurred due to dysregulation of Hedgehog-patched1 signaling pathway.

**Objective:** The current study was conducted to evaluate the in vitro cytotoxic effects of Cupressus sempervirens methanolic extract against primary basal cell carcinoma cells, over a period of 48 hours.

**Methods:** We measured the increased levels of Annexin-V as well as lactate dehydrogenase leakage in cells being-exposed to 420 µM extract, in addition to transcript levels of PTCH1 of hedgehog-patched1 signaling pathway, angiogenic activity of vascular endothelial growth factor and angiopoietin-2, and metastatic levels of matrix metalloproteinase 2 and 9.

**Results:** The cytotoxicity test results showed that BCC cells survival decreased dose-dependently through 48 hours. The expression of Annexin-V was induced ( $p < 0.05$ ) in treated cells which coincided with raised levels of lactate dehydrogenase leakage in supernatant media ( $p < 0.05$ ). Noticeably, the expression of PTCH1, vascular endothelial growth factor, angiopoietin-2 and matrix metalloproteinase 2 and 9 were robustly decreased. Interestingly, 6-month clinical trial follow-up of Cupressus sempervirens extract 5% ointment showed antitumor activity against cutaneous basal cell carcinoma by the reduction of tumor and inflammatory cells replaced with development of fibrotic stroma.

**Conclusions:** The data of present experiment may suggest that the methanolic extracts of Cupressus sempervirens possess oncostatic and cytotoxic properties and therefore, can be prescribed as natural protective and therapeutic ingredients for basal cell associate cutaneous tumor.

### Biography

Fateme Mokhtari has graduated as MD from Shahid Beheshti University of Medical Sciences and then completed Dermatology Residency at Tabriz University. She has done some researches on skin cancers at Tabriz Stem Cell Research Center. Presently, she is serving as a Member of Editorial Board team of International Journal of Clinical Pathology and Diagnosis.

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