

عنوان مقاله:

Dual antineoplastic and photodynamic effects of methanolic extract of Tecoma stans yellow flowers for cancer treatment

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خلاصه مقاله:

Introduction: Tecoma stans is a fast-growing plant from the family Bignoniaceae. Various parts of T. stans have been used in different biological applications, especially in cancer treatment. Photodynamic therapy (PDT) is a promising modality for cancer treatment that depends on the interaction between a photosensitizer, light, and oxygen. Searching for photosensitizers from plant origin is crucial to provide nontoxic photosensitizers with high economic value. This study aims to evaluate the anticancer and photodynamic activities of T. stans methanolic flower extract (TSFE).
Methods: The phytoconstituents of TSFE were analyzed by the UPLC/MS/MS technique. The cytotoxicity of TSFE was examined on the breast carcinoma (MCF-7) and lung carcinoma (A549) cell lines, in dark and after irradiation by blue light (400-450 nm).
Results: TSFE contained various phytochemical components with antineoplastic activity. Moreover, TSFE contained coumarins and anthocyanins that may act as photosensitizers. TSFE showed negligible cytotoxicity against MCF-7 cell lines at all tested concentrations in dark. A non-significant cell viability change was observed upon radiation ($P > 0.05$). TSFE showed significant dark cytotoxicity on A549 cells, which improved significantly after light radiation ($P < 0.05$).
Conclusion: TSFE is a promising anticancer and natural photosensitizer for PDT and this study may inspire further ethnobotanical investigations into promising new natural anti-cancers and photosensitizers.

کلمات کلیدی:

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