

P-439**Investigating viability of human leukemia/lymphoma cells upon coadministration of umbelliprenin and radiotherapy****Keyhan Ebrahimi¹, Ramin Bagheri¹, Mohammad Reza Keramati¹, Fatemeh B. Rassouli^{3*}, Houshang Rafatpanah², Mehrdad Iranshahi⁴**

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Introduction: Umbelliprenin (C₂₄H₃₀O₃) is a natural sesquiterpene coumarin found in various *Ferula* species. It has important pharmacological effects such as antibacterial, anti-inflammatory, anti-oxidant and anti-tumor activities. Despite extensive studies on anticancer effects of umbelliprenin in vitro, it is not clear whether coadministration of umbelliprenin and routine therapeutic modalities could improve their clinical efficacy. Hence, objective of our research was to investigate effects of umbelliprenin and radiotherapy on human leukemia/lymphoma cells.

Methods: In this study, human leukemia/lymphoma cells (MT-2 cell line) were treated with 20 and 40 µg/ml umbelliprenin for 24 h, and then radiotherapy (4 Gy radiation) was applied. After 48 h recovery of cells, their viability was evaluated by resazurin. Meanwhile, cells treated with 0.2% DMSO + 4 Gy radiation were considered as control.

Results and conclusion: Evaluating viability of MT2 cells revealed that upon coadministration of 20 µg/ml umbelliprenin + radiotherapy, 89% of cells were alive. More interestingly, cell viability was calculated as 63% when 40 µg/ml + radiotherapy was applied. Therefore, findings of present study indicated that beside its known anticancer effects, umbelliprenin could improve efficacy of radiotherapy in leukemia/lymphoma cells.

Key word: Umbelliprenin, Radiotherapy, Human leukemia/lymphoma cells.

P-440**Anti-metastatic potential of crocin on triple negative breast cancer in mice model****Laleh Arzi¹, Gholamhossein Riazi¹, Majid Sadeghizadeh²**

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Background and Objective: Due to the highly aggressive nature and short relapse time of triple negative breast cancer (TNBC), it cannot be overcome with any standard-of-care therapy. However, a vast body of evidence has indicated the efficacy of herbal remedies as treatments for cancer. In particular, crocin, the main carotenoid of saffron, has shown anti-proliferative and proapoptotic effects on primary tumors. In this regard our previous research demonstrated the anti-metastatic properties of crocin on breast cancer cell model (4T1). Thus, this study unprecedentedly aimed to investigate the anti-metastatic potency of crocin on a murine model of metastatic TNBC and its effect on the Wnt/β-catenin pathway.

Material and Methods: Tumors were inoculated by injection of 4T1 cells to mice. During the treatment period, the weights and survival rates of the mice and tumor sizes were measured. Histological analysis of the excised tissues was conducted following euthanization. The expression levels of Wnt/β-catenin pathway genes were measured by Real-time PCR.

Results: Measurement of biochemical parameters showed the nontoxicity of crocin. The crocin treated mice possessed more weight, higher survival rates and smaller tumors sizes. Histopathological analysis showed no metastatic lesions in their livers and lungs. Also, downregulation of the expression of Wnt/β-catenin target genes in tumors and lungs was observed compared to the untreated group.

Conclusion: Our data proposes crocin as a propitious complementary anti-metastatic herbal medicine for treatment of TNBC.

Keywords: Crocin, Triple negative breast cancer (TNBC), Anti-metastatic, Mice model, Wnt/β-catenin
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