

### A11

doi: 10.14232/ syrpharmacognosy.2021.a11

### Phytochemical and pharmacological study of furocoumarins in *Citrus trifoliata* L.

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Furocoumarins are heterocyclic aromatic compounds, in which a furan ring is fused with a coumarin skeleton. Basically there are two types of furocoumarins – angular and linear furocoumarins – depending on the position of the furan ring [1,2].

Furocoumarins have already been reported to exert several beneficial pharmacological effects, like antifungal, antibacterial activities [3]. Some of them were shown to have analgesic and anti-inflammatory effects [4], some others have been shown some interesting enzyme inhibitory effects [5]. In spite of these effects, furocoumarins can be dangerous/unsafe. In the literature many of their harmful effects have already been demonstrated such as photosensitizing effect [6].

Coumarins and furocoumarins are found in large quantities in citrus species. The peel contains higher concentrations of the furocoumarins than the pulp.

In my research work different coumarins and furocoumarins were isolated from *Citrus trifoliata* L. by various separation techniques such as flash chromatography, high performance liquid chromatography and rotation planar chromatography. Six coumarins and furocoumarins – auraptene, triphasiol, imperatorin, myrsellin, phellopterin, 7-methoxyscopoletin – were identified by NMR spectroscopy.

The antiproliferative and cytotoxic activity of the isolated compounds were tested *in vitro*. The bioactivities of certain compounds were examined for the first time. The presented results contribute to a better understanding of risks and beneficial effects of *C. trifoliata* secondary metabolites.

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