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BOOK OF ABSTRACTS

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Interesting biological properties of *Anchusa azurea* Mill. (Boraginaceae) methanol extract

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Several plants are considered a big reservoir of natural chemicals, many of them have been used as food for several years, without the knowledge of their benefits on human health. Recently, their extracts showed interesting *in vitro* anti-cancer properties, but only few have been used for treatment of these diseases.

Given the importance of this research field, the present study aimed to determine the chemical composition of the methanol extract of *Anchusa azurea* Mill. (Boraginaceae) aerial parts and its biological activity as antioxidant and antitumor agent against four tumor cell lines (MCF-7, MDA-MB-231, RKO, R₂C). The obtained data showed that the more powerful antitumor activity was against the human colorectal RKO cells, highly aggressive and metastatic, with very low toxicity on non tumoral cells. The results have highlighted that the antitumor properties are due to the ability to induce the programmed cancer cell death through interference with the cytoskeleton dynamics. The phytochemical profile have evidenced the presence of different compounds with a good antioxidant activity, assessed by using different assays (β -carotene bleaching, ABTS, DPPH and FRAP). Furthermore, *A. azurea* extract protects also 3T3-L1 mouse cells from oxidative stress induced by menadione. These results demonstrate that *A. Azurea* could exert benefits on human health and could be used to develop new anticancer agents.



Figure 1: *Anchusa Azurea*.

- [1] Poma P.; Labbozzetta M.; Notarbartolo M.; Bruno M.; Maggio A.; Rosselli S.; Sajeva, M.; Zito P., *PLoS one* **2018**, 13.
[2] Aissaoui H.; Mencherini T.; Esposito T.; De Tommasi N.; Gazzero P.; Benayache S.; Benayache F.; Mekkiou R., *Natural product research* **2018**, 1-6.