

Serbian Plant Physiology Society

Institute for Biological Research „Siniša Stanković”, University of Belgrade

2nd International Conference on Plant Biology

21th Symposium of the Serbian Plant Physiology Society

COST ACTION FA1106 QUALITYFRUIT Workshop



Petnica Science Center, June 17-20, 2015

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troscopy (EPR), respectively. This essential oil showed a significant anti-hydroxyl radical activity under *in vitro* conditions, both in the procedures based on FS (81%) and EPR (77%), respectively. Indeed, for the very first time the findings presented herein indicate the potential of the moss *R. ontariense* volatiles (a mixture of natural antioxidants with diterpene alcohol phytol as the main component) in the treatment of a broad range of cardiovascular diseases (including hypertension) whose pathophysiologicals are mainly well described and directly linked to the screened free radical species.

Keywords: *Rhodobryum ontariense*, phytol

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Cytotoxic and antimicrobial activities of different plant part extracts of *Inula oculus-christi*

PP3-24

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Inula oculus-christi L. is a perennial species distributed in Asia, Central Europe and the Balkan Peninsula. In this study a potential cytotoxic and antimicrobial activity of ethanol extracts obtained from different parts of *I. oculus-christi* plants was investigated. Cytotoxic activity of extracts was determined on three tumor cell lines (HeLa, FemX and LS-174) by MTT assay. The extracts of leaves and flowers showed significant cytotoxic activity against all investigated cell lines, while rhizome, root and trunk extracts had no cytotoxic activity. The IC₅₀ values for flower extract were 68.70 ± 2.79 µg mL⁻¹ for HeLa cells, 88.91 ± 1.66 µg mL⁻¹ for FemX cells and 81.46 ± 8.45 µg mL⁻¹ for LS-174 cells, whereas the IC₅₀ values for leaf extract were 73.69 ± 5.35 µg mL⁻¹ for HeLa cells, 71.58 ± 4.25 µg mL⁻¹ for FemX cells and 96.37 ± 4.92 µg mL⁻¹ for LS-174 cells. The observed cytotoxic activity could be attributed to several bioactive sesquiterpenoids and flavonoids which were more abundant in leaf and flower extracts according to LC-DAD/MS non-targeted screening. In the antimicrobial bioassays against eight bacteria and microfungi, all tested extracts exhibited higher antimicrobial activity in comparison with commercial antimicrobial agents used as control. These results indicate the possibility of application of *I. oculus-christi* extracts as valuable natural products in medicine, agronomy and food industry.

Keywords: *Inula oculus-christi*, LC-DAD/MS, cytotoxic and antimicrobial activity

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