

Serbian Plant Physiology Society

Institute for Biological Research "Siniša Stanković", University of Belgrade

**2nd International Conference
on Plant Biology**

**21st Symposium of the Serbian
Plant Physiology Society**

**COST ACTION FA1106
QUALITYFRUIT Workshop**

Book of Abstracts



Petnica, 17-20 June 2015

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PLC/DAD/+HESI-MS/MS method was developed and evaluated. Hydrolysis was performed enzymatically using commercial β -glucosidase isolated from almond. Results of FRAP, ABTS and DPPH assays showed higher antioxidative activity of hydrolyzed *C. erythraea* methanol extract and pure compounds than non-hydrolyzed ones. Conversely, hydrolysis of *C. erythraea* methanol extracts led to lower antifungal activity and had weak or no influence on antibacterial activity. Based on this study it can be presumed that biosynthesis of secoiridoid glycosides, and their degradation mediated by β -glucosidases are regulated by various biotic factors, and are involved in defense system against herbivores and pathogens.

Keywords: secoiridoid glycosides, β -glucosidase, *Centaurium erythraea*

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Antibacterial activity of Lady's Mantle

PP3-3

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Lady's Mantle (*Alchemilla vulgaris* L.) belongs to the Rosaceae family. In traditional medicine, it was used as herbal treatment for menstrual disorders. Due to the high content of phenolic compounds, *Alchemilla* species were also shown to possess anti-inflammatory, antioxidant, anti-influenza and anticarcinogenic activity. The purpose of this work was to evaluate the antibacterial properties of *A. vulgaris*. The methanolic extract of aerial parts of *A. vulgaris* prepared by maceration has been used to estimate the antibacterial activity against nine bacterial strains. The *in vitro* antibacterial activity was performed by microdilution method. Minimal inhibitory concentrations (MIC) were evaluated based on the color change of resazurin. The most sensitive bacterial strain was *Micrococcus lysodeikticus* (MIC 0.156 mg mL⁻¹). The methanolic extract of *A. vulgaris* also showed remarkable antibacterial potential against both ATCC and clinically isolated strains of *Enterococcus faecalis* (0.312 mg mL⁻¹ and 0.156 mg mL⁻¹, respectively). *Pseudomonas aeruginosa* was the most resistant species with MIC values 20 mg mL⁻¹. MIC values for chloramphenicol, used as standard, were in the range of 2.5-10 mg mL⁻¹. The results of the present investigation suggest that *A. vulgaris* possesses strong antibacterial activity against tested bacterial species, with MIC values ranging from 0.156 mg mL⁻¹ to 20 mg mL⁻¹. Based on these results, further chemical and pharmacological investigation, as well as isolation of bioactive compounds may be recommended.

Keywords: *Alchemilla vulgaris*, antibacterial activity, phenolic compounds

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