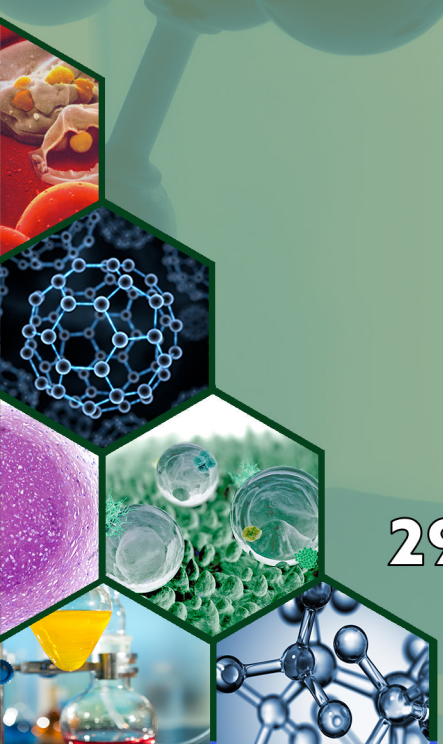
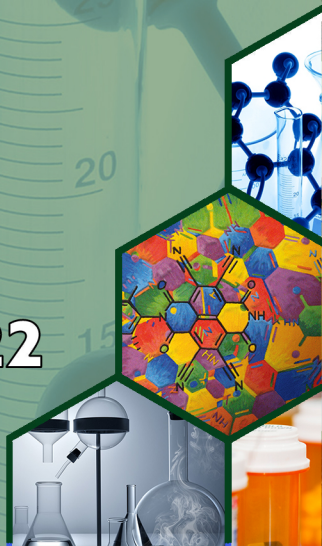
Serbian Chemical Society
Serbian Young Chemists' Club

# Eight Conference
## of the Young Chemists of Serbia

# *Book of Abstracts*





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# 8th Conference of Young Chemists of Serbia

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**OC PP 04**

# Detection of biomarkes of adulterated *Allium ursinum* with *Convallaria majalis* and *Arum maculatum*

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*A. ursinum* and poisonous adulterants *C. majalis* and *A. maculatum* were used as a model for detection of adulterants in edible plant. *A. Ursinum* samples were spiked with *C. Majalis* and *A. Maculatum* to mimic adulteration. Metabolomic fingerprinting of all samples was performed using $^{1}$H NMR spectroscopy (1D zgpr pulse sequence), and the resulting data sets were subjected to multivariate data analysis. As a result of this analysis, signals of adulterants were extracted from the data, and the structures of biomarkers of adulteration from partially purified samples were elucidated using 2D NMR. Thus, isovitexin and vicenin II, azetidine-2-carboxylic acid, and trigonelline indicated adulteration of *A. Ursinum* samples with *C. majalis*. Isovitexin was also recognized to be an indicator of adulteration of *A. Ursinum* with *A. maculatum*. In conclusion, the case study of *A. Ursinum* suggested that plant metabolomics approach could be utilized for identification of low molecular weight biomarkers of adulteration in edible plants.

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