

# BOOK OF ABSTRACTS

## 3rd International Conference on Plant Biology (22nd SPSS Meeting)



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**Faculty of Biology, University of Belgrade**

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dition of aggregated proteins. Here we examined the variation in the abundance of Hsp70s in different floral organs of the three distinctive color morphs in *Iris pumila*. Flowers of twenty seven genotypes raised in a common-garden and belonging to three colour classes: yellow, dark blue and dark violet, were collected (9 per each class) for an immunoblot analysis. The content of Hsp70 was quantified in four floral organs: falls, standards, stamens and style arms. The immunoblot analysis revealed that the expression of Hsp70s was floral organ-specific. While only one Hsp70 isoform was expressed in the standards and falls, the stamens and style arms expressed two isoforms. The relative abundance of Hsp70 varied among differed flower organs as well. The lowest value was recorded in the standards and the highest in the stamens, whereas its abundance in the falls and style arms appeared to be intermediate. Such variation pattern was detected exclusively in the dark violet colour morphs. In the yellow flowers, however, the amount of Hsp70 tended to be lower compared to the dark blue or dark violet colour morphs. This study provides original evidence for organ-specific Hsp70 expression in flowers of *I. pumila* plants, likely due to the differential metabolic activities occurring in the cells of these functionally distinctive floral structures.

**Keywords:** Hsp70, floral organs, *Iris pumila*, flower colour

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## Genetic diversity of *Nepeta rtanjensis* based on RAPD data

PP3-9

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*Nepeta rtanjensis* Diklić et Milojević (*Lamiaceae*) is an endemic, herbaceous plant, found only in a very small area of Mount Rtanj in Southeast Serbia. The whole species is represented by several hundred specimens distributed within three known populations: Greda, Mirčin del and Javor. Like many species of the genus *Nepeta*, *N. rtanjensis* is also famous for its secondary metabolite production (mainly nepetalactones and phenolics) and it is well known that these compounds show antibacterial, antifungal, cytotoxic, phytotoxic and antioxidant activities. Because of its limited distribution and the status of critically endangered species, it is important to find as much as possible information about the population genetic structure of this species. Therefore, we performed randomly amplified polymorphic DNA (RAPD) analysis to get an insight into the genetic diversity and variation of this species within and between the populations. DNA material used in this process was isolated from leaves collected from plants in their natural habitats. To our knowledge, this is the first employment of RAPD markers in the assessment of the *N. rtanjensis* genetic structure. Genetic variability between populations was not detected, but only small variations between individual plants from the same populations were recorded. These preliminary data give us a good base for further studies towards elucidating the genetic structure of this rare species using more reliable *EST-SSR* markers, designed based on *N. rtanjensis* transcriptome.

**Keywords:** *Nepeta rtanjensis*, DNA, RAPD, population genetics

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