

# BOOK OF ABSTRACTS

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



9-12 JUNE 2018  
BELGRADE

**Serbian Plant Physiology Society**

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

**Faculty of Biology, University of Belgrade**

**3<sup>rd</sup> International Conference  
on Plant Biology  
(22<sup>nd</sup> SPPS Meeting)**



9-12 June 2018, Belgrade

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CIP - Каталогизacija у публикацији - Народна библиотека Србије, Београд  
581(048)(0.034.2)

INTERNATIONAL Conference on Plant Biology (3 ; 2018 ; Belgrade)

[Book of Abstracts] [Електронски извор] / 3rd International Conference on Plant Biology [and] 22nd SPPS Meeting, 9-12 June 2018, Belgrade ; [organized by] Serbian Plant Physiology Society [and] Institute for Biological Research "Siniša Stanković", University of Belgrade [and] Faculty of Biology, University of Belgrade ; [editor Branka Uzelac]. - Belgrade : Serbian Plant Physiology Society : University, Institute for Biological Research "Siniša Stanković" : University, Faculty of Biology, 2018 (Beograd : Друштво за физиологију биљака Србије). - 1 USB fleš memorija ; 1 x 3 x 8 cm

Тираж 230. - Регистар.

ISBN 978-86-912591-4-3 (SPPS)

1. Друштво за физиологију биљака Србије. Састанак (22 ; 2018 ; Београд)

2. Институт за биолошка истраживања "Синиша Станковић" (Београд)

а) Ботаника - Апстрактни

COBISS.SR-ID 264421900

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<b><u>Publishers</u></b>	Serbian Plant Physiology Society Institute for Biological Research "Siniša Stanković", University of Belgrade Faculty of Biology, University of Belgrade
<b><u>Editor</u></b>	Branka Uzelac
<b><u>Graphic design</u></b>	Dejan Matekalo
<b><u>Prepress</u></b>	Marija G. Gray
<b><u>Electronic edition</u></b>	230 pcs

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## SELECTED TALKS

**Are receptor tyrosine kinases chimeric AGP's?**

ST1-1

Danijela Paunović, Milica Bogdanović, Milana Trifunović Momčilov, Slađana Todorović, Ana Simonović, Angelina Subotić, Milan Dragičević  
(danijela.paunovic@ibiss.bg.ac.rs)

<sup>1</sup> Institute for Biological Research "Siniša Stanković", University of Belgrade, Bulevar despota Stefana 142, 11060 Belgrade, Serbia

Arabinogalactan proteins (AGPs) are cell wall proteoglycans with important roles during plant growth and development. They comprise one of the most complex families of macromolecules found in plants, which is in part due to the incredible diversity of the glycans decorating the protein backbone, as well as the heterogeneity of the protein backbones. While this diversity is certainly responsible for the wide array of physiological functions associated with AGPs, it hampers efforts for homology-based identification. We have developed a new method for filtering AGP sequences that exploits one of their key features, the presence of hydroxyprolines, which represent glycosylation sites. This method was used to filter potential AGPs from *Centaurea erythraea* RNA-seq data. Most of the filtered sequences had no identifiable domains, while the most frequent identified domains were the Protein kinase and Protein tyrosine kinase domains identified in the same sequences, followed by well-known AGP associates, Leucine rich repeats, Probable lipid transfer, Plastocyanin-like and Fasciclin. It is noteworthy that the Protein (tyrosine) kinase domain has thus far eluded experimental evidence for linkage with AGPs in any plant species, probably due to its transmembrane nature. The implicated sequences were examined in depth and compared to homologs from *Arabidopsis*.

**Keywords:** arabinogalactan proteins, bioinformatics, hydroxyproline prediction, finding-AGP

*This research was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia (TR31019, OI173024)*

**Silicon increases iron use efficiency in cucumber – a strategy  
1 model plant**

ST1-2

Jelena Pavlović, Miroslav Nikolić  
(jelena.pavlovic@imsi.bg.ac.rs)

Department of Plant Nutrition, Institute for Multidisciplinary Research, University of Belgrade, Kneza Visislava 1, 11030 Belgrade, Serbia

Silicon (Si) and iron (Fe) are respectively the second and the fourth most abundant minerals in the earth's crust. While the essentiality of Fe has been discovered in the middle of the 19th century, Si is still not fully accepted as an essential element for higher plants. Due to poor Fe availability for higher plants, especially in alkaline and calcareous soils, Fe deficiency represents a major limiting factor for crop production worldwide, affecting both crop yield and quality, with a strong negative impact on human health.