

BOOK OF ABSTRACTS

3rd International Conference on Plant Biology

(22nd SPPS Meeting)



9-12 JUNE 2018
BELGRADE

Serbian Plant Physiology Society

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

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Faculty of Biology, University of Belgrade

**3rd International Conference
on Plant Biology
(22nd SPPS Meeting)**



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***Agrobacterium*-mediated genetic transformation of *Viola cornuta* L. “Lutea Splendens” with capsanthin-capsorubin synthase gene**

PP5-20

**Milena Trajković¹, Zoran Jeknić², Dragana Antonić¹, Angelina Subotić¹,
Slađana Jevremović¹, Aleksandar Cingel¹**
(milena.lojic@ibiss.bg.ac.rs)

¹ Institute for Biological Research “Siniša Stanković”, University of Belgrade, Belgrade, Serbia

² Department of Horticulture, Oregon State University, Corvallis, Oregon, USA

Viola cornuta L. ‘Lutea Splendens’ is a perennial ornamental plant with small yellow flowers that naturally grows in the Pyrenees in Spain and France. To develop novel cultivars with orange and red flower colors, we performed *Agrobacterium tumefaciens* (LBA4404)-mediated transformation with the binary vector pWBVec10a/P35S::Llccs::TNos that harbored capsanthin-capsorubin synthase (*Llccs*) gene from *Lilium lancifolium* under the control of CaMV35S constitutive promoter and the nopaline synthase (Nos) terminator. Capsanthin-capsorubin synthase catalyzes the conversion of anteraxanthin and violaxanthin, two yellow ubiquitous 5-6-epoxy-xanthophylls, into capsanthin and capsorubin, two red xanthophylls, respectively. Starting with hypocotyl explants, we developed a transformation protocol with 0.3% shoot regeneration efficiency. Histochemical assay for β -glucuronidase (GUS) activity showed *uidA* reporter gene expression in all putative *Llccs*-transgenic shoots. The presence of *Llccs* transgene, hygromycin phosphotransferase (*hpt*) selectable marker gene and *uidA* (GUS) reporter gene in all putative *Llccs*-transgenic lines were confirmed by PCR analysis. This is the first report on *Agrobacterium*-mediated genetic transformation of *V. cornuta* L. with the aim to introduce desirable traits into this species.

Keywords: horned pansy, flower color, capsanthin, capsorubin, carotenoid biosynthesis

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A wild plant as rich source of biologically active components and potential supplements to food products

PP5-21

**Milena Vujanović¹, Marija Radojković¹, Gökhan Zengin²,
Tatjana Majkić³, Ivana Beara³, Saša Đurović⁴**
(milnavujanovic@uns.ac.rs)

¹ Faculty of Technology, University of Novi Sad, Novi Sad, Serbia

² Selçuk Üniversitesi, Fen Fakültesi Biyoloji Bölümü, Kampüs/Konya, Turkey

³ Faculty of Science, University of Novi Sad, Novi Sad, Serbia

⁴ Institute of General and Physical Chemistry, Belgrade, Serbia

Sambucus nigra L., commonly known as elderberry, is wild growing plant from *Caprifoliaceae* botanical family. This plant is widely recognized for its extraordinary biologically active components and beneficial effect on human health. Therefore, elderberry is one of the medicinal plants of particular interest, suitable for pharmaceutical and food purposes [1]. The investigation includ-