

# **Program, Abstracts and List of Participants**

**of the**

## **10th International Conference on Reactive Oxygen and Nitrogen Species in Plants**

**July 5-8, 2011, Budapest, Hungary**

**Meeting of the Plant Oxygen Group  
of the Society for Free Radical Research-Europe  
(SFRR-E)**

### **Conference site**

Main Building of the Hungarian Academy of Sciences  
Széchenyi tér 9, 1051 Budapest, Hungary

# Contents

	Page
Committee members.....	5
Scientific program.....	7
Abstracts.....	15
Session 1: ROS Production and Perception.....	15
Session 2: Plant Metabolism and Development.....	31
Session 3: Redox Signaling and Gene Expression.....	71
Session 4: Photosynthesis and Respiration.....	95
Session 5: Abiotic stress.....	131
Session 6: Plant Antioxidants and Health.....	185
Session 7: Reactive Nitrogen Species (RNS).....	201
Session 8: Plant-Microbe Interactions.....	229
List of Participants.....	261
Index of Presenting Authors.....	281

# **International Organizing Committee**

Andrey Aver'yanov, Research Institute of Phytopathology, B.Vyasemy, Russia  
C. Jacyn Baker, USDA, Molecular Plant Pathology Lab., Beltsville, MD, USA  
Laura De Gara, University Campus Bio-Medico of Rome, Rome, Italy  
Luis A. del Río, Estacion Experimental del Zaidin, CSIC, Granada, Spain  
Jörg Durner, Helmholtz Zentrum München, Germany  
Christine H. Foyer, Centre of Plant Science, University of Leeds, Leeds, UK  
José A. Hernández, CEBAS-CSIC, Dept. Plant Breeding, Murcia, Spain  
Jaakko Kangasjärvi, Plant Biology, University of Helsinki, Helsinki, Finland  
Zbigniew Miszalski, Institute of Plant Physiology, Polish Acad. Sci., Kraków, Poland  
Philip Mullineaux, Dept. of Biological Sciences, University of Essex, Colchester, UK  
Alain Puppo, Université de Nice, Sophia Antipolis, France  
Frank Van Breusegem, VIB Dept. Plant Systems Biol., Ghent University, Ghent, Belgium

## **Local Organizing Committee**

Balázs Barna, Plant Protection Institute, Hungarian Academy of Sciences, Budapest  
József Fodor, Plant Protection Institute, Hungarian Academy of Sciences, Budapest  
Gábor Gullner, Plant Protection Institute, Hungarian Academy of Sciences, Budapest  
Éva Hideg, Biological Research Center of the Hungarian Academy of Sciences, Szeged  
Zoltán Király, Plant Protection Institute, Hungarian Academy of Sciences, Budapest  
Tamás Kőmíves, Plant Protection Institute, Hungarian Academy of Sciences, Budapest  
András Szarka, Dept. Appl. Biotechnol. Food Sci., Budapest University of Technology and  
Economics, Budapest  
Zoltán Szigeti, Dept. Plant Physiol. Mol. Plant Biol., Eötvös Loránd University, Budapest

## **Session 4**

# **Photosynthesis and Respiration**

## **P-78. ANTIOXIDATIVE METABOLISM IN WHITE AND GREEN LEAF PARTS OF HIMERIC PELARGONIUM UNDER HIGH LIGHT AND UV-B STRESS**

*Marija Vidović<sup>1</sup>, Filis Morina<sup>1</sup>, Predrag Kolarž<sup>2</sup>, Sonja Veljović Jovanović<sup>1</sup>*

<sup>1</sup>Institute for Multidisciplinary Research, University of Belgrade, Kneza Visislava 1, Belgrade, Serbia

<sup>2</sup>Institute of Physics, University of Belgrade, Pregrevica 118, Belgrade, Serbia

E-mail: marija@imsi.rs

Variegated, himeric plants, *Pelargonium zonale variegata*, with green (chlorophyll containing) and white (albino) leaf tissue present a suitable model system for studying the role of photosynthesis and high light and UV-B induced oxidative stress and the antioxidative defence in leaves. We exposed excised leaves of geranium to excess of daily light for 9 hours and compared activities of the enzymes of ascorbate-glutathione cycle, and contents of ascorbate, glutathione and phenolics in green and white leaf parts. One ascorbate peroxidase (APX) isoform, more sensitive to ascorbate absence, was detected in the soluble fraction of white part. Two APX bands were observed in membrane bound fraction from white part, compared to only one, weaker band in green part. The specific activities of APX and dehydroascorbate reductase (DHAR) were higher and glutathione reductase (GR) was lower in white leaf parts. While the specific activity of catalase (CAT) was three times higher in green part, the activity of class III peroxidases (POD) was more than two times higher in white parts of the leaves. Changes in the content in phenolics, flavonoids and hydroxycinnamic acids in green and white parts were determined by HPLC.

Differential inter-organ antioxidant defence strategies towards excess of light in white and green leaf parts of himeric geranium is discussed.