

**SERBIAN PHYSIOLOGICAL SOCIETY**  
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**with**

**FACULTY OF SCIENCE, KRAGUJEVAC**  
**([www.pmf.kg.ac.yu](http://www.pmf.kg.ac.yu))**



**and**

**SERBIAN BIOLOGICAL SOCIETY "STEVAN JAKOVLJEVIĆ",  
KRAGUJEVAC**



*The 2<sup>nd</sup> multidisciplinary scientific meeting  
with international participation*

**"OXIDATIVE STRESS AND THE MECHANISMS OF PROTECTION"**

**SECOND ANNOUNCEMENT**

**Kragujevac, Faculty of Science  
2<sup>nd</sup> - 3<sup>th</sup> November 2006**

## **WELCOME ADDRESS**

**Dear Colleagues,**

**Faculty of Science in Kragujevac, Serbian Physiological Society together with Serbian Biological Society “Stevan Jakovljević” in Kragujevac are organizing the 2<sup>nd</sup> scientific meeting with international participation “OXIDATIVE STRESS AND THE MECHANISMS OF PROTECTION”.**

**Oxidative stress is defined as a disturbance of prooxidative/antioxidative balance leading to potential damages of cells and organism. Production of reactive oxygen and nitrogen species in physiological processes which do not disturb normal functioning of aerobic organisms imposes insufficiently explained dilemma when normal physiology exceeds its boundaries and becomes pathological. These problems have been intensively studied for the last two decades both worldwide and in our country, so that basic mechanisms of molecular activities of reactive oxygen and nitrogen species, as well antioxidative defense system are well known today. Due to the fact that, apart from basic mechanisms of molecular activities, the role of oxidative stress in many pathophysiological processes has been investigated for the last decade, the scientific justification of this multidisciplinary meeting should not be especially emphasized.**

**At the first multidisciplinary meeting on the oxidative stress, held in 28<sup>th</sup>- 29<sup>th</sup> May 2004 in Kragujevac, earlier research in the field, carried out in this country, was presented. We were presented a striking number of works of our eminent experts. The results are a consequence of a few-decade research of the oxidative stress problem. Having in mind the fact that the research is a continuous process, it is a good idea to have such meetings organized (once in two years), so that we could both exchange the information and experience and learn about the new tendencies in basic and biomedical research of oxidative stress.**

**Since the University of Kragujevac celebrates its 30th anniversary in 2006, it is a great pleasure to us to be the hosts of the meeting.**

**We appreciate very much your participating wishing you nice stay in the ancient town of Kragujevac.**

**On Behalf of the Organizing and Scientific Committee**

**Sincerely,**

**Radoslav V. Žikić  
PRESIDENT OF  
ORGANIZING COMMITTEE**

**Zorica S. Saičić  
PRESIDENT OF  
SCIENTIFIC COMMITTEE**

## **PRESIDENT OF ORGANIZING COMMITTEE**

- **Žikić R, Faculty of Science, Kragujevac**

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- **Đurić D, Institute of Medical Physiology, School of Medicine, Belgrade**
- **Jakovljević V, Medical Faculty, Kragujevac**
- **Marković S, Faculty of Science, Kragujevac**
- **Ognjanović B, Faculty of Science, Kragujevac**
- **Štajn A, Faculty of Science, Kragujevac**

## **PRESIDENT OF SCIENTIFIC COMMITTEE**

- **Saičić Z, Institute for Biological Research, Belgrade**

## **SCIENTIFIC COMMITTEE\***

- **Baričević I, Institute for the Application of Nuclear Energy, Belgrade**
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- **Buzadžić B, Institute for Biological Research, Belgrade**
- **Cvijić G, Faculty of Biology, Belgrade**
- **Demajo M, Institute of Nuclear Science “Vinča”, Belgrade**
- **Dobrić S, Military Medical Academy, Belgrade**
- **Đorđević-Denić G, Medical Faculty, Belgrade**
- **Đorđević V, Medical Faculty, Niš**
- **Đujić I, Institute of Chemistry, Technology and Metalurgy, Belgrade**
- **Đurašević S, Faculty of Biology, Belgrade**
- **Grubor Lajšić G, Faculty of Sciences, Novi Sa**
- **Jones D, Faculty of Chemistry, Belgrade**
- **Jovanović D, Institute of Chemistry, Technology and Metalurgy, Belgrade**
- **Jovović Đ, Institute for Medical Research, Belgrade**
- **Jozanov-Stankov I, Institute of Nuclear Science “Vinča”, Belgrade**
- **Jurišić V, Medical Faculty, Kragujevac**
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- **Kovačević R, Faculty of Sciences, Novi Sad**
- **Maličević Ž, Military Medical Academy, Belgrade**
- **Milenković P, Institute for Medical Research, Belgrade**
- **Milovanović S, Military Medical Academy, Belgrade**

- Mostarica-Stojković M, Institute of Microbiology and Immunology, Belgrade,
- Mujović V, Medical Faculty, Belgrade
- Nedić O, Institute for the Application of Nuclear Energy, Belgrade
- Niketić V, Faculty of Chemistry, Belgrade
- Pajović S, Institute of Nuclear Science “Vinča”, Belgrade
- Pavlović D, Medical Faculty, Niš
- Pavlović S, Institute for Biological Research, Belgrade
- Radenović L, Faculty of Biology, Belgrade
- Radotić K, Institute for Biological Research, Belgrade
- Radojčić M, Institute of Nuclear Science “Vinča”, Belgrade
- Radojčić R, Faculty of Biology, Belgrade
- Rudnjanin S, Military Medical Academy, Belgrade
- Selaković V, Military Medical Academy, Belgrade
- Simić T, Medical Faculty, Belgrade
- Spasić M, Institute for Biological Research, Belgrade
- Stojiljković M, Military Medical Academy, Belgrade
- Stošić Grujičić S, Institute for Biological Research, Belgrade
- Vučinić Ž, Institute for Biological Research, Belgrade
- Ziemnicki K, Institute of Experimental Biology, Poznan
- Žunić G, Military Medical Academy, Belgrade

#### **HONORARY COMMITTEE\***

- Arsenijević N, Dean of Medical Faculty, Kragujevac
- Đuran M, Rector of University of Kragujevac, Kragujevac
- Milosavljević T, Ministry of Health, Belgrade
- Petrović M, Director of Institute for Biological Research, Belgrade
- Petrović V, Serbian Academy of Sciences and Arts
- Popović A, Ministry for Science and Environmental Protection, Belgrade
- Rakić Lj, Serbian Academy of Sciences and Arts
- Trifunović S, Dean of Faculty of Science, Kragujevac

**\*The surnames are given following alphabetical order**

## PLACE AND PROPOSITIONS OF THE MEETING

The meeting will be held in the Ceremony Hall at Faculty of Science in Kragujevac. The deadline for the application of abstracts (in English, MS Word, font Times New Roman, ppt. 12, up to 300 words) is 20<sup>th</sup> September 2006 and should be sent only to the following E-mail:

[branka@kg.ac.yu](mailto:branka@kg.ac.yu) and [smarkovic@kg.ac.yu](mailto:smarkovic@kg.ac.yu)

The papers are to be written in English with the summary (in English and Serbian) in MS Word, font Times New Roman, ppt. 12, not more than 4 pages with maximum 3 graphics (figure, table, graphic), with precise note of the theme of the presentation. The deadline for the application of papers is 1<sup>st</sup> October 2006. According to the decision of Scientific Committee the papers will be published in *Iugoslavica Physiologica et Pharmacologica Acta* official Journal of the Serbian Physiological Society in Vol 42, No 3, 2006.

Please contact Editor-in-Chief:

Dr Zorica S. Saičić, Leading scientist and Head of department of Physiology,  
Institute for Biological Research "Siniša Stanković", Bulevar despota Stefana 142,  
11060 Belgrade, Serbia

E-mail: [zorica.saicic@ibiss.bg.ac.yu](mailto:zorica.saicic@ibiss.bg.ac.yu)

Video-beam, slide projector and overhead projector will be at the participants' disposal. The type of presentation is oral and should not be longer than 8 minutes with 2 minutes of discussion. Poster size should be 120 (height) cm x 80 (width) cm.

## **THEMES OF THE SCIENTIFIC MEETING**

- 1. Molecular mechanisms of oxidative stress**
- 2. The role of the oxidative stress in pathophysiological processes**
- 3. Basic investigations in oxidative stress**
- 4. The applied investigations in oxidative stress**
- 5. The role of antioxidative defense system in the prevention of oxidative cell damage**
- 6. Metabolism of nitric oxide**
- 7. The role of nitric oxide and carbon monoxide generating systems in regulation of physiological processes**
- 8. Toxicological aspects of oxidative stress**
- 9. Phytotherapy based on antioxidants**
- 10. Effects of hyperbaric and hypobaric conditions on the (human) health**
- 11. Hyperbaric oxygen therapy – oxidative stress or cure**
- 12. Therapeutic application of antioxidants**
- 13. Other themes**

## **LANGUAGE**

**The official languages of the conference are English and Serbian. All abstracts will be published in English.**

## **ACCOMODATION AND REGISTRATION FEE**

**REGISTRATION FEE amounts 3000 dinars for the members of Serbian Physiological Society who have paid their Membership fee for 2006. Other participants should pay 4000 dinars by 15<sup>th</sup> October 2006, or 4500 dinars after that deadline. The fee includes: the presence at all themes of the Scientific Meeting, printed materials, presence at cocktail-breaks as well as ceremonial dinner.**

**REGISTRATION FEE is to be paid on the transfer account of the Serbian Biological Society “Stevan Jakovljević” Kragujevac: 150-2875-49, Credenya banka, Kragujevac.**

**In case of large number of participants the Organizing Committee will provide the accomodation at appropriate hotels in Kragujevac at acceptable prices.**

# SCIENTIFIC PROGRAM

The 2<sup>nd</sup> multidisciplinary scientific meeting with international participation

## "OXIDATIVE STRESS AND THE MECHANISMS OF PROTECTION"

Venue: Faculty of Science, Radoja Domanovića 12, Kragujevac

THURSDAY, 02. 11. 2006.

9.00 – 11.00 REGISTRATION AND ARRANGEMENTS OF POSTERS

11.00 – 11.30 WELCOME COCKTAIL

11.30 - 12.00 OPENING OF THE CONFERENCE AND WELCOME MESSAGES

CHAIR PERSONS: ŽIKIĆ RV, DJURIĆ DM, JAKOVLJEVIĆ VLJ, MARKOVIĆ SD,  
OGNJANOVIĆ BI, ŠTAJN AŠ, SAIČIĆ ZS

12.00 – 13.00 PLENARY LECTURES

CHAIR PERSONS: SAIČIĆ ZS, ŠTAJN AŠ, ŽIKIĆ RV

EFFECTS OF NITRIC OXIDE REDOX TRANSFORMATION ON ITS REGULATORY  
FUNCTION

Spasić B. Mihajlo, Saičić S. Zorica

OXIDATIVE STRESS AND CELL SIGNALLING

Pajović B. Snežana, Pejić Snežana, Stojiljković Vesna, Todorović Ana, Kasapović  
Jelena, Saičić S. Zorica

INTERRELATIONSHIP OF HEME OXYGENASE WITH NITRIC OXIDE SYNTHASE:  
PROTECTION, LIMITATION OR TOXICITY?

**Korać Bato**

OXIDATIVE STRESS AND ENDOTHELIAL (DYS)FUNCTION: FROM BASIC  
SCIENCE TO APPLIED CLINICAL INVESTIGATION

Jakovljević Lj. Vladimir, Djurić M. Dragan

**13.00 -13.15 PROMOTION OF BOOK:**

**"ECOPHYSIOLOGY AND ECOTOXICOLOGY OF ANIMALS"**

**Authors:**

**Dr Andraš Š. Štajn – full professor, Faculty of Science, Kragujevac,  
Dr Radoslav V. Žikić – full professor, Faculty of Science, Kragujevac,  
Dr Zorica S. Saičić – leading scientist, Institute for Biological Research  
"Siniša Stanković", Belgrade**

**13.15 - 16.00 LUNCH**

**16.00 – 17.00 ORAL PRESENTATIONS**

**CHAIR PERSONS: SPASIĆ MB, DJURIĆ DM**

PHYSIOLOGICAL DEFENSE MECHANISMS OF THE ORGANISM AGAINST  
HYPEROXIA

**Živković M, Tepić S, Simović M, Mujovic VM**

MOTION SICKNESS AND HYPOXIA

**Pavlović M**

INFLUENCE OF PHYSICAL EXERCISE ON LIPID PEROXIDATION PROCESS AND  
NONENZYMIC ANTIOXIDANTS

**Popović Lj, Mitić N, Mirić D, Mirić M, Đokić T**

MILD HYPOTHERMIA COMPLETELY SUPPRESSES EEG SIGNS OF METAPHIT –  
INDUCED AUDIOGENIC SEIZURES IN RATS

**Hrnčić D, Stanojlović O, Živanović D, Šušić V**

EFFECT OF CADMIUM ON ANTIOXIDANT DEFENSE SYSTEM: CHANGES AFTER  
CO-TREATMENT WITH COENZYME Q<sub>10</sub> IN SOME TISSUES OF RATS

**Pavlović SZ, Ognjanović BI, Štajn AŠ, Žikić RV, Saičić ZS**

**17.00 – 17.20 COFFEE BREAK**



**17.20 – 18.20 ORAL PRESENTATIONS**

**CHAIR PERSONS: PAJOVIĆ SB, Korać B**

ENERGY METABOLISM OF RAT RED BLOOD CELLS AFTER EXPERIMENTALLY  
PHENYLHYDRAZINE-INDUCED RETICULOCYTOSIS

**Marković SD, Ognjanović BI, Štajn AŠ, Žikić RV, Saičić ZS, Spasić MB, Petronijević ND, Petronijević MR**

ANTIOXIDATIVE DEFENSE SYSTEM OF ERYTHROCYTES IN PREECLAMPSIA

**Dorđević NZ, Marković SD, Babić GM, Ognjanović BI, Štajn AŠ, Žikić RV, Saičić ZS**

THE ROLE OF HEME OXYGENASE 1 AND NF-κB IN INTERSCAPULAR BROWN  
ADIPOSE TISSUE. THE INFLUENCE OF NITRIC OXIDE

**Petrović V, Buzadžić B, Korać A, Vasilijević A, Janković A, Korać B**

THE IMPORTANCE OF NEURONAL NITRIC OXIDE SYNTHASE IN PANCREAS OF  
RAT WITH EXPERIMENTALLY INDUCED DIABETES MELLITUS

**Vasilijević A, Buzadžić B, Korać A, Petrović V, Janković A, Korać B**

SPECIFIC EXPRESSIONAL PATTERN OF HO-1 AND HO-2 IN RAT PANCREAS:  
ROLE IN EXPERIMENTALLY INDUCED DIABETES MELLITUS

**Janković A, Buzadžić B, Korać A, Petrović V, Vasilijević A, Korać B**

**21.00 – GALA DINNER**

**FRIDAY, 03. 11. 2006.**

**10.00 – 11.00 ORAL PRESENTATIONS**

**CHAIR PERSONS: ŠTAJN AŠ, JAKOVLJEVIĆ VLJ**

MYELOPEROXIDASE ACTIVITY IN CEREBROSPINAL FLUID AND SERUM OF PATIENTS WITH PURULENT MENINGITIS

**Mirić D, Katanić R, Božović B**

OXIDATIVE STRESS PARAMETERS IN RAT STRIATUM FOLLOWING INTRAHIPPOCAMPAL INJECTION OF NMDA AND AMPA/KAINATE RECEPTOR ANTAGONISTS

**Radenović L, Selaković V, Janać B, Prolić Z**

EFFECTS OF ALUMINUM NEUROTOXICITY ON THE RAT ELECTROCORTICAL ACTIVITY

**Martać Lj, Čulić M, Grbić G, Kesić S, Spasić S, Sekulić S, Lalošević D**

CAMPHOR OIL POISONING – SPECTRAL ANALYSIS OF RAT BRAIN ACTIVITY

**Grbić G, Čulić M, Martać Lj, Kesić S, Soković M, Spasić S, Đoković D**

OXIDATIVE STRESS IN PLASMA OF PATIENTS WITH NON-HODGKIN'S LYMPHOMA

**Vukajlović MĐ, Marković SM, Ognjanović BI, Jurišić V, Žikić RV, Štajn AŠ, Jančić R, Saičić ZS**

**1.00 – 11.20 COFFEE BREAK**

**11.20 – 12.20 ORAL PRESENTATIONS**

**CHAIR PERSONS: KOSANOVIĆ K, OGNJANOVIĆ BI**

THE ACTIVITIES OF ANTIOXIDATIVE DEFENSE ENZYMES IN THE BLOOD OF RATS TREATED WITH OLIVE OIL

**Pavlović SZ, Ognjanović BI, Štajn AŠ, Žikić RV, Radojičić RM, Petrović VM, Saičić ZS**

SUPEROXIDE DISMUTASE (SOD) AND CATALASE (CAT) ACTIVITIES IN SOME TISSUES OF THREE FRESHWATER CRAYFISH SPECIES

**Kovačević TB, Pavlović SZ, Borković SB, Milošević SM, Kosanović K, Štajn AŠ Petrović VM, Saičić ZS**

GLUTATHIONE PEROXIDASE (GSH-Px), GLUTATHIONE REDUCTASE (GR) AND PHASE II BIOTRANSFORMATION ENZYME GLUTATHIONE-S-TRANSFERASE (GST) ACTIVITIES IN TISSUES OF SOME FRESHWATER CRAYFISH SPECIES

**Borković SB, Pavlović SZ, Kovačević TB, Milošević SM, Pajović SB, Žikić RV Petrović VM, Saičić ZS**

ATRAZINE ACTIONS ON TESTICULAR ANDROGENESIS AND ANTIOXIDATIVE ENZYMES IN PERIPUBERTAL MALE RATS

**Pogrmić K, Zorić S, Fa S, Kovačević R**

SELENIUM-HEALTH, PRODUCTIVE AND REPRODUCTIVE CHARACTERISTICS OF FARMS ANIMALS

**Joksimović-Todorović M, Davidović V**

**12.20 – 12.40 COFFEE BREAK**

**12.40 – 13.30 POSTER PRESENTATIONS**

OXIDATIVE STATUS IN PLASMA OF PREECLAMPTIC WOMEN

**Babić GM, Đorđević NZ, Marković SD, Ognjanović BI, Žikić RV, Štajn AŠ, Saičić ZS**

ACTIVITY OF THE ENZYMES OF THE ANTIOXIDATIVE SYSTEM, GLUTATHIONE AND LIPID PEROXIDATION CONTENT IN TISSUES OF TWO FISH SPECIES FROM THE ADRIATIC SEA

**Filipović JŽ, Nikolić D, Ognjanović BI, Marković SD, Žikić RV, Štajn AŠ, Saičić ZS**

THE EFFECTS OF GENERALISED AUDIOGENIC SEIZURES ON HEART PERIOD IN METAPHIT –TREATED RATS

**Hrnčić D, Ristić A, Stanojlović O, Šušić V**

ALTERATION OXIDANT-ANTIOXIDANT STATUS IN ERYTHROCYTES WOMEN WITH HYPERLIPIDEMIA

**Milutinović TB, Ranković MI, Ognjanović BI, Marković SD, Đorđević NZ, Štajn AŠ, Žikić RV, Saičić ZS**

EFFECTS OF LINDANE ON EPILEPTOGENIC ACTIVITY IN RATS

**Mladenović D, Stanojlović O, Hrnčić D, Radosavljević T, Vučević D, Šušić V, Lončar-Stevanović H, Petrović J**

OXIDATIVE STRESS IN BRAIN STEM DURING GRAM NEGATIVE SEPSIS

**Ninković M, Maličević Ž, Jelenković A, Jovanović M, Đukić M, Vasiljević**

PROTECTIVE Effect OF SELENIUM ON ANTIOXIDANT DEFENSE SYSTEM IN THE BLOOD OF RATS TREATED WITH CADMIUM

**Ognjanović BI, Marković SD, Pavlović SZ, Žikić RV, Štajn AŠ, Ziemnicki K, Saičić ZS**

GLUTATHIONE S-TRANSFERASES ISOENZYME PROFILE IN UROTHELIAL CARCINOMA

**Opačić M, Mimić-Oka J, Plješa-Ercegovac M, Savić-Radojević A, Simić T**

EXPRESSION PROFILE OF GLUTATHIONE S-TRANSFERASE IN RENAL CELL CARCINOMA

**Plješa-Ercegovac M, Mimić-Oka J, Savić-Radojević A, Opačić M, Simić T**

PARAMETRIC OXIDATIVE STRESS AND ANTIOXIDANT DEFENSE SYSTEM IN ERYTHROCYTES MEN WITH HYPERGLYCEMIA

**Ranković MI, Milutinović TB, Ognjanović BI, Marković SD, Đorđević NZ, Štajn AŠ, Žikić RV, Saičić ZS**

EKG AND EEG CHANGES DURING TONIC SEIZURES IN METAPHIT – INJECTED RATS CHALLENGED BY SOUND STIMULATION

**Stanojlović O, Ristić A, Hrnčić D, Mladenović D, Radosavljević T, Šikić B, Rašić A, Šušić V**

ANTIOXIDANT RESPONSE TO DIFFERENT STRESS MODELS OF RAT BRAIN CORTEX

**Stojilković V, Pejić S, Kasapović J, Todorović A, Pajović SB**

ANTIOXIDANT EFFECT OF PROPRANOLOL IN EXPERIMENTAL  
HYPERTHYROIDISM

**Adela Elena Joanta, Adriana Filip, Simona Clichici, Sanda Andrei**

**13.30 – 14.00 ROUND TABLE AND CONCLUDING REMARKS OF THE  
CONFERENCE**

**CHAIR PERSONS: ŽIKIĆ RV, DJURIĆ DM, JAKOVLJEVIĆ VLJ, MARKOVIĆ SD,  
OGNJANOVIĆ BI, ŠTAJN AŠ, SAIČIĆ ZS**

**14.00 – 16.00 LUNCH**

**16.00 Excursion to traditional places of Kragujevac**