

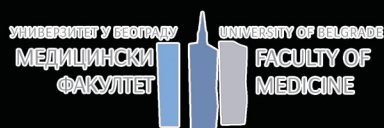
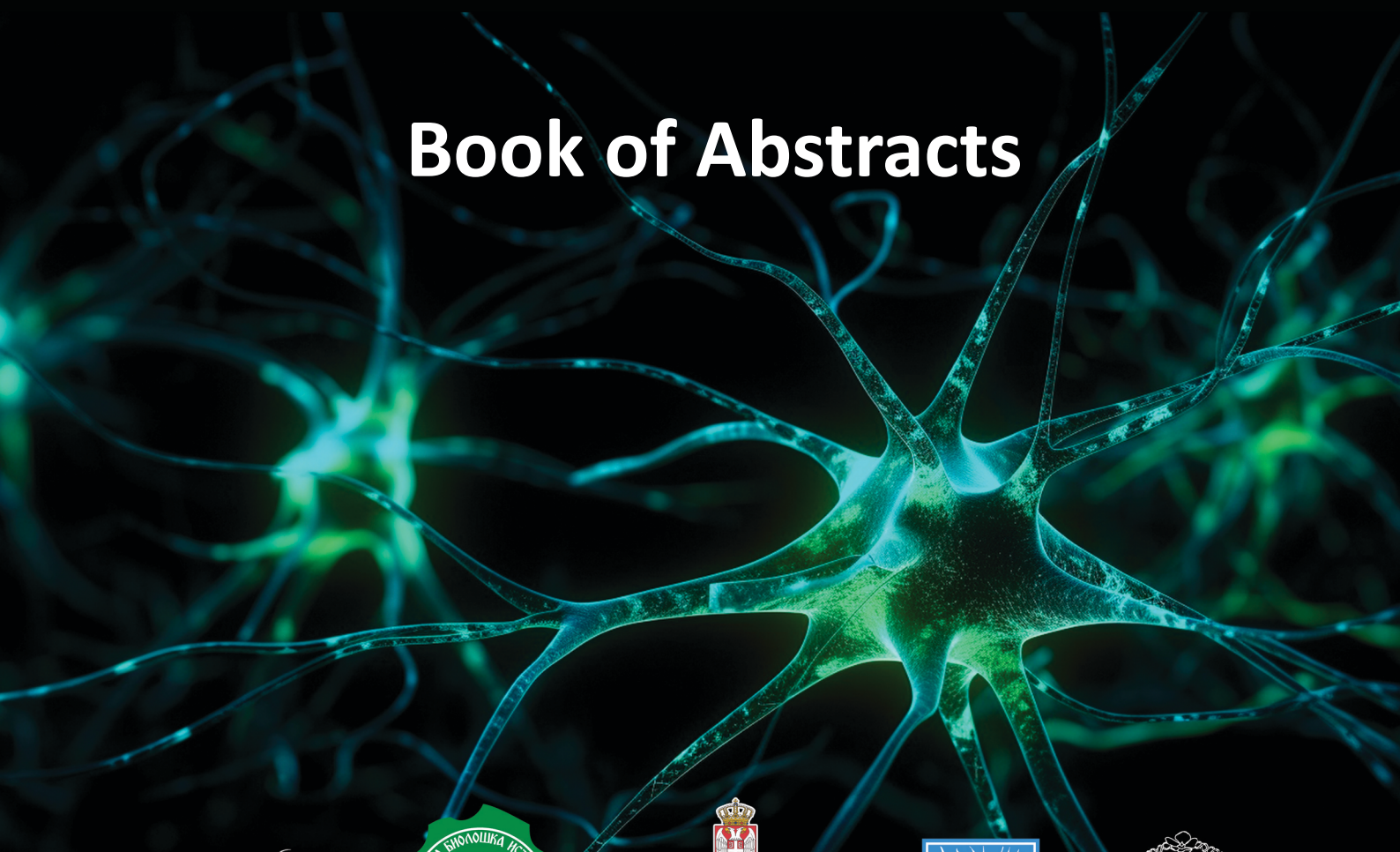


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**31 May - 02 June**  
**Belgrade Youth Center**  
**Belgrade**

**Congress**  
**Serbian Neuroscience Society**

# Book of Abstracts



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**In memory of Acad. Prof. Ljubisav Rakić**



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## **Programme:**

**31 May**

### **Belgrade Youth Center-Hall**

**12:00-16:00** Registration

### **Belgrade Youth Center-Amerikana**

**12:00-13:00** FRM2019 Highlights

**13:00-14:00** BAW Highlights

**14:00-15:00** ZooBrainology

**15:00-16:00** Euro-Neuro – edutainment, 2012

### **University of Belgrade**

#### **Rectorate building - the Mansion of Miša Anastasijević**

**17:00-17:40** Opening Ceremony

**17:40-18:30** Opening Lecture (Chairs: Selma Kanazir & Ivanka Marković)

#### **Professor Carmen Sandi**

Laboratory of Behavioral Genetics, Brain Mind Institute, Swiss Federal Institute of Technology in Lausanne, Lausanne, Switzerland

**Neural circuits and metabolic pathways on the links between stress, anxiety & motivation**

**18:30-20:00** Cocktail Party

## 01 June

### Belgrade Youth Center - Amerikana & Hall

- 9:00-9:45** **Keynote Lecture** (Chairs: Elka Stefanova & Ivanka Marković)  
**Professor Frank Jessen**  
Department of Psychiatry, University of Cologne, Medical Faculty, Cologne, Germany  
**First symptomatic manifestation of Alzheimer's disease**
- 09:45-10:00** **Coffee Break**
- 10:00-10:35** **Single-cell and SPATIAL transcriptomics in Neuroscience**, lecture by 10X Genomics, sponsored by Labena
- 10:35-12:45** **Morning Session** (Chairs: Dragomir Milovanović & Saša Filipović)  
**Brain Stimulation, Phase Separation and Open Data**
- 10:40-11:05** **Andrej Savić, PhD**  
Science and Research Centre, School of Electrical Engineering, University of Belgrade, Belgrade, Serbia  
**Brain-computer interface for electrotactile sensory training after stroke**
- 11:05-11:30** **Jovana Bjekić, PhD**  
Group for Neuroscience, Institute for Medical Research, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia  
**Using noninvasive brain stimulation to modulate memory in humans: from mechanisms to clinical applications**
- 11:30-11:55** **Milorad Dragić, PhD**  
Laboratory for Neurobiology, Department of General Physiology and Biophysics, Faculty of Biology, University of Belgrade, Belgrade, Serbia  
**Transcranial magnetic stimulation as a therapeutic approach for neurodegenerative disorders - insights from animal models**
- 11:55-12:20** **Dragomir Milovanović, PhD**  
Laboratory for Molecular Neuroscience, German Center for Neurodegenerative Diseases, Charité University Clinic in Berlin, Berlin, Germany  
**Phase separation in neuronal physiology and pathology**
- 12:20-12:45** **Ivan Zaletel, MD, PhD**  
Institute of Histology and Embryology "Aleksandar Đ. Kostić", Faculty of Medicine, University of Belgrade, Belgrade, Serbia  
**Open-access data and resources in neuroscience research**

**12:45-15:00** **Lunch Break and Poster Session** (13:30-14:30 Selected Abstracts will be presented in Amerikana)

**15:00-17:10** **Afternoon Session** (Chairs: Nina Vardjan & Aleksandra Mladenović)

**Brain Metabolism & Dietary Interventions**

**15:05-15:30** **Nina Vardjan, PhD**

Laboratory of Neuroendocrinology, Molecular Cell Physiology, Institute of Pathophysiology, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia

**Adrenergic regulation of astrocyte glucose and lipid droplet metabolism**

**15:30-15:55** **Predrag Vujović, PhD**

Department for Comparative Physiology and Ecophysiology, Institute for Physiology and Biochemistry “Ivan Djaja”, Faculty of Biology, University of Belgrade, Belgrade, Serbia

**Expression Regulation and Roles of Insulin Produced in the Brain**

**15:55-16:20** **Ana Podolski-Renić, PhD**

Department of Neurobiology, Institute for Biological Research “Siniša Stanković”, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia

**The role of the Thioredoxin detoxification system in glioblastoma progression and drug resistance**

**16:20-16:45** **Nataša Lončarević, PhD**

Molecular Nutrition and Health Lab, Centro de Estudos de Doenças Crónicas, NOVA Medical School, Universidade Nova de Lisboa, Lisbon, Portugal

**Can consumption of (poly) phenol-rich food ameliorate molecular and behavioral PD-like pathology in MPTP-treated mice?**

**16:45-17:10** **Smilja Todorović, PhD**

Department of Neurobiology, Institute for Biological Research “Siniša Stanković”, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia

**Dietary restriction as an anti-aging intervention**

**17:10-17:30** **Coffee Break**

**17:30-18:15** **Keynote Lecture** (Chairs: Selma Kanazir & Jelena Đorđević)

**Cláudia Nunes Dos Santos, PhD**

Molecular Nutrition and Health Lab, Centro de Estudos de Doenças Crónicas, NOVA Medical School, Universidade Nova de Lisboa, Lisbon, Portugal

**Brain permeability and neuroprotection by the gut (poly)phenol metabolites**

## 02 June

### Belgrade Youth Center - Amerikana & Hall

**09:00-09:45** **Keynote Lecture** (Chairs: Vladimir Trajković & Danijela Savić)

**Marina Jendrach, PhD**

Department of Neuropathology, Charité, Universitätsmedizin Berlin, corporate member of Freie Universität Berlin, Humboldt-Universität Zu Berlin, Berlin Institute of Health, Germany

**Modulation of neuroinflammation by autophagy**

**09:45-10:00** **Coffee Break**

**10:00-12:10** **Morning Session** (Chairs: Pavle Andus & Marin Jukić)

**Brain Disorders – From Genetics to Markers**

**10:05-10:30** **Marija Švirtlih, PhD**

Laboratory for Human Molecular Genetics, Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia

**SOX Transcription Factors – choosing between stemness and neuronal differentiation**

**10:30-10:55** **Milena Janković, MD, PhD**

Laboratory for Molecular Genetic Diagnostic of Neurological Diseases, Neurology Clinic, University Clinic Center of Serbia, University of Belgrade, Belgrade, Serbia

**Genetics of neurodegeneration: from global resemblance to regional differences**

**10:55-11:20** **Milena Milošević, PhD**

Center for Laser Microscopy, Institute for Physiology and Biochemistry "Jean Giaja", Faculty of Biology, University of Belgrade, Belgrade, Serbia

**ALS IgG - translation to a physiological diagnostic marker**

**11:20-11:45** **Verica Paunović, PhD**

Institute of Microbiology and Immunology, Faculty of Medicine, University of Belgrade, Belgrade, Serbia

**Downregulation of LKB1/AMPK Signaling in blood mononuclear cells is associated with the severity of Guillain-Barre syndrome**

**11:45-12:10** **Marin Jukić, PhD**

Department of Physiology, Faculty of Pharmacy, University of Belgrade, Belgrade, Serbia

**The humanized CYP2C19 transgenic mouse exhibits cerebellar atrophy and movement impairment reminiscent of ataxia**



## Genetic risk factors in patients with Myasthenia gravis

Nemanja Garai<sup>1</sup>, Ivana Dejanović<sup>2</sup>, Stojan Perić<sup>2</sup>, Jelena Karanović<sup>1</sup>, Jovan Pešović<sup>1</sup>, Miloš Brkušanić<sup>1</sup>, Slobodan Apostolski<sup>4</sup>, Dragana Lavrnić<sup>2,3</sup>, Ivana Basta<sup>2,3</sup>, Dušanka Savić-Pavićević<sup>1</sup>

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<sup>4</sup>Specialist practice for neurology Apostolski, Belgrade, Serbia

Myasthenia gravis (MG) is a rare autoimmune disease mediated by antibodies against components of the neuromuscular junction, particularly the acetylcholine receptor (AChR). The prevalence of MG in Belgrade has been estimated at 189 cases per 1,000,000 inhabitants, which is among the highest prevalence reported to date. Genetic studies have mainly pointed to specific *HLA* alleles associated with MG. However, *CTLA-4* and *TNFRSF11A*, playing a role in the immune response, have recently been associated with MG in genome-wide association studies. Since *CTLA-4* and *TNFRSF11A* promote other autoimmune diseases, the main objective of this case-control study was to determine the association between these candidate genes and the risk for developing MG in Serbian population.

Genotyping of rs231735 and rs231770 within the *CTLA-4* gene and rs4263037 within *TNFRSF11A* in 447 AChR-MG patients and 447 individually sex- and age-matched controls revealed no association with MG ( $p=0.344$ ,  $p=0.923$  and  $p=0.557$ , respectively). However, when stratifying patients into those with early-onset ( $n=183$ ) and late-onset MG ( $n=264$ ), we found an association of minor rs231735 allele T with early-onset MG under the recessive genetic model (OR=0.548, 95% CI=0.339-0.888,  $p=0.014$ ,  $p_{10e6}$  permutation=0.014). Haplotype analysis revealed that individuals with the GC haplotype rs231735-rs231770 had a higher risk for developing early-onset MG (OR =1.360,  $p=0.027$ ,  $p_{10e6}$  permutation =0.027). Considering the sufficient statistical power of the study (>90%) and the selection criteria for controls, our results suggest that the *CTLA-4* may be associated with early-onset MG in Serbian population. Analysis of additional variants is needed to understand the association of *CTLA-4* with MG.

Acknowledgments: This work was funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia, contract 451-03-68/2022-14/20017