



**IMMUNOLOGY AT THE CONFLUENCE
OF MULTIDISCIPLINARY
APPROACHES
ABSTRACT BOOK**

**Institute for Biological Research "Siniša Stanković" National
Institute of Republic of Serbia
University of Belgrade**

Immunological Society of Serbia

**IMMUNOLOGY AT THE CONFLUENCE OF
MULTIDISCIPLINARY APPROACHES**

ABSTRACT BOOK

Hotel Mona Plaza Belgrade

December 6th-8th, 2019

Belgrade, 2019

PUBLISHERS

**Institute for Biological Research "Siniša Stanković" - National Institute of
Republic of Serbia, University of Belgrade
Immunological Society of Serbia**

For publishers

**Dr Mirjana Mihailović, director of the Institute for Biological Research "Siniša
Stanković" - National Institute of Republic of Serbia, University of Belgrade**

Dr Nada Pejnović, president of the Immunological Society of Serbia

EDITORS

Tamara Saksida

Suzana Stanisavljević

Đorđe Miljković

Printed by: Interprint, Kragujevac

Circulation: 200

ISBN 978-86-80335-12-4

**This publication is printed by support of the Ministry of Education, Science and
Technological Development, Republic of Serbia**

Saturday, December 7th Session: NEUROIMMUNO

Poster presentation

THE EFFECTS OF FOOD RESTRICTION ON ANXIETY LEVEL AND DOPAMINERGIC SYSTEM DURING AGING IN MALE WISTAR RATS

Milica Prvulović, Kosara Smiljanić, Smilja Todorović, Selma Kanazir,
Aleksandra Mladenović Đorđević

Institute for Biological Research „Siniša Stanković“ - National Institute of Republic of Serbia, University of Belgrade, Boulevard Despota Stefana 142, Belgrade, Serbia

Aims: Food restriction (FR) is well known as an environmental intervention efficient in delaying aging and age-related disorders. Important role in the regulation of food intake plays the gut-brain dopamine (DA) axis. Dopamine is a neurotransmitter involved in regulation of brain's rewarding and pleasure centers, whose signaling is indispensable to survival and maintenance of eating patterns. Reversely, reduced food intake affects DA circuits and behaviors controlled by DA, including anxiety. Herein we investigated mechanisms through which FR affects anxiety and the role of dopaminergic system in this process. **Methods:** 60% FR of various onset and duration (FR1, FR2 and FR3) was implemented as a feeding regime for aging male Wistar rats. Open field test and light-dark box were used to investigate effects of age and food restriction on anxiety-like behavior. Western blot and PCR were used to determine the changes at the transcriptional and translational level. **Results:** Open field test showed an increased general activity of animals under FR1 in comparison to the controls, while FR2 and FR3 seemed to have deleterious effect on anxiety level. Light-dark box confirmed deleterious effect of FR2 and FR3 regimens. Changes detected on behavioral level were accompanied with the specific changes in the level of dopaminergic receptors. **Conclusions:** Our results showed that food restriction is not universally beneficial, but depends on age when implemented. We showed that FR-induced effects can vary from anxiolytic to anxiogenic, while the components of DA circuits in the brain show region-specific response to FR.