

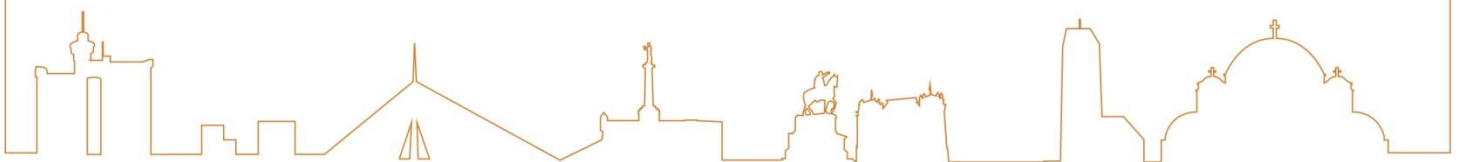
CoMBoS

1st Congress of Molecular Biologists of Serbia

KNJIGA SAŽETAKA BOOK OF ABSTRACTS



Beograd 2017 / Belgrade 2017



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University of Belgrade, Faculty of Biology
Belgrade, Serbia

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Printed by:

Electronic edition

Printed by:

University of Belgrade, Faculty of Belgrade

This publication is printed on 250 copies

2017

**First Congress of Molecular Biologists of Serbia
with international participation**

Belgrade, Serbia

September 20 – 22, 2017.



CoMBoS

1st Congress of Molecular Biologists of Serbia

POZDRAVNO PISMO ORGANIZATORA / WELCOME ADDRESS

Drage kolege,

Srpsko društvo za molekularnu biologiju (MoBioS) želi vam dobrodošlicu na Prvi kongres molekularnih biologa Srbije (CoMBoS). Program kongresa uključuje širok spektar fascinantan tema iz molekularne biologije i srodnih oblasti i posvećen je stimulisanju radoznalosti, komunikacije i saradnje, posebno među mladim istraživačima. Nadamo se da će CoMBoS doprineti ostvarenju našeg cilja da molekularnim biologima i naučnicima iz

srodnih oblasti pružimo priliku da razmene ideje i budu inspirisani intrigantnim predavanjima renomiranih naučnika i priznatih eksperata iz 24 zemalje (Austrije, Bosne i Herecegovine, Crne Gore, Danske, Francuske, Grčke, Holandije, Hrvatske, Irske, Italije, Kanade, Makedonije, Nemačke, Poljske, Rumunije, Rusije, Sjedinjenih Američkih Država, Slovenije, Španije, Švajcarske, Švedske, Turske, Velike Britanije i Srbije).



Prof. Gordana Matić

Predsednik Srpskog društva za molekularnu biologiju
President of the Serbian Society for Molecular Biology



Prof. Goran Brajušković

Predsednik Organizacionog odbora CoMBoS 2017
Chair of the CoMBoS 2017 Organizing Committee

Dear colleagues,

The Serbian Society for Molecular Biology (MoBioS) warmly welcomes you to Belgrade, Serbia, for the First Congress of Molecular Biologists of Serbia with international participation (CoMBoS). The programme covers a wide spectrum of fascinating contemporary topics in molecular biology and related fields, and is dedicated to fostering curiosity, communication and collaboration, especially among young researchers. We hope that CoMBoS will contribute in fulfilling our aim of creating an opportunity for molecular biologists and related scientists to exchange ideas and get inspired by state-of-the-art lectures of prominent scientists and acknowledged experts from 24 countries (Austria, Bosnia and Herzegovina, Canada, Croatia, Denmark, France, Germany, Great Britain, Greece, Ireland, Italy, Macedonia, Montenegro, The Netherlands, Poland, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Turkey, USA and Serbia).

The first CoMBoS is devoted to Academician Dušan Kanazir (1921-2010)

MolBioS is committed to preserving the memory of the great Serbian scientists who paved the way for the fruitful research and education in molecular biology in Serbia. Hence, the first CoMBoS is devoted to Academician Dušan Kanazir (1921-2010), an eminent scientist who played an essential role in the foundation of the Department of Biochemistry and Molecular Biology and the study program Molecular Biology and Physiology at the Faculty of Science, University of Belgrade, in 1972. This study quickly became attractive and acquired distinction, and has served as an incubator for many talented scientists who conduct cutting edge research in modern biology, confirming the efforts of this great visionary. In Memoriam to Academician Dušan Kanazir, warmly written by Prof. Ljubiša Topisirović and originally published in the Archives of Biological Sciences (2010), is presented in the Special Issue of *Biologia Serbica* dedicated to CoMBoS.

MolBioS Award

The Serbian Society for Molecular Biology (MolBioS) has established its own award in recognition of the achievements of individuals in the field of molecular biology and their contributions to its development and promotion in Serbia. The MolBioS Award is envisioned for an active scientist and will be presented at every subsequent Congress of Molecular Biologists of Serbia, with a closing lecture given by the winner.

The Award Committee, formed by the Steering Committee of the MolBioS unanimously agreed to present the first MolBioS Award to **Dr. Gordana Matić**, the distinguished professor of Biochemistry and Molecular Biology whose research has focused on steroid biology, with a particular interest in many facets of the glucocorticoid receptor in health and disease. An inspired article about Prof. Gordana Matić, written by her close collaborators Dr. Ana Đorđević and Prof. Goran Brajušković, is presented in the Special Issue of *Biologia Serbica* dedicated to CoMBoS.

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MELATONIN MODULATES CATECHOLAMINE BIOSYNTHESIS AND RE-UPTAKE IN ADRENAL MEDULLA OF RATS EXPOSED TO CHRONIC UNPREDICTABLE MILD STRESS

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Introduction: Stress is considered a determinant in the etiology of depression. The adrenal medulla plays a key role in response to stress by releasing catecholamines, which are important to maintain homeostasis. Many studies have assessed the antidepressant-like activity of the melatonin, a neurohormone synthesized in the pineal gland. Thus, in the present study, we examined the effect of chronic melatonin treatment on mRNA levels and protein content of catecholamines biosynthetic enzymes (TH, DBH and PNMT) and transporters (NET, VMAT2) in adrenal medulla of rats exposed to chronic unpredictable mild stress (CUMS).

Material and Methods: CUMS was used as an animal model of depression. Exposure of rats to CUMS and placebo or melatonin (10 mg/kg body weight, i.p.) administration started on the same day and was continued for 4 weeks. For quantifying TH, DBH, PNMT, NET and VMAT2 mRNA and protein levels we used real-time PCR and Western blot analysis.

Results: We observed that CUMS induced increased mRNA levels of catecholamine biosynthetic enzymes (TH, DBH, and PNMT), and noradrenaline transporter NET, while treatment with melatonin decreased these biosynthetic enzymes and transporter. Conversely, CUMS induced a decrease in protein content of TH and NET, while chronic melatonin treatment increased NET protein levels in both control and stressed rats. CUMS and melatonin treatment has no effect on mRNA levels and protein content of VMAT2.

Conclusion: This study suggests that the observed decrease of catecholamine biosynthesis and enhanced re-uptake in adrenal medulla of rats exposed to CUMS are connected to the beneficial effects of chronic melatonin treatment.

Acknowledgement: This work was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, Contract nos. 173044.

CIP - Каталогизација у публикацији - Народна библиотека Србије, Београд

577.2(048)(0.034.2)

57+61(048)(0.034.2)

CONGRESS of Molecular Biologists of Serbia (1 ; 2017 ; Beograd)

Book of Abstracts [Elektronski izvor] = Knjiga sažetaka / 1st Congress of Molecular Biologists of Serbia [with international participation] - CoMBoS, Belgrade, Serbia, September 20 - 22, 2017. ; [editors Goran Brajušković, Ana Đorđević]. - Beograd : University, Faculty of Biology, 2017

(Beograd : University, Faculty of Biology). - 1 USB fleš memorija ; 6 x 9 cm (u obliku kartice)

Sistemski zahtevi: Nisu navedeni. - Nasl. sa naslovne strane dokumenta. - Tiraž 250.

ISBN 978-86-7078-136-8

a) Молекуларна биологија - Апстракти b) Биомедицинска истраживања - Апстракти

COBISS.SR-ID 238800652