

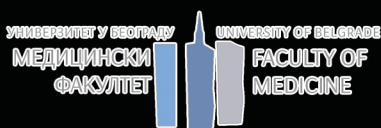


ДНС / SNS  Друштво за неуронауке Србије / Serbian Neuroscience Society

31 May - 02 June
Belgrade Youth Center
Belgrade

Congress
Serbian Neuroscience Society

Book of Abstracts



8th CONGRESS OF SERBIAN NEUROSCIENCE SOCIETY with international participation

31 May – 2 June 2023. Belgrade, Serbia - BOOK OF ABSTRACTS

Published by:

Serbian Neuroscience Society
Bulevar despota Stefana 142, 11060 Belgrade, Serbia

Editors

Selma Kanazir and Danijela Savić

Assistant editors:

Anica Živković
Željko Pavković

Technical editor:

Anđela Vukojević

Graphic design:

Olga Dubljević, Irina Veselinović

Copyright © 2023 by Serbian Neuroscience Society and associates. All rights reserved. No part of this publication may be reproduced in any form without written permission from the publisher.

ISBN: 978-86-917255-4-9

CONGRESS ORGANIZERS

Serbian Neuroscience Society

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

CONGRESS CO-ORGANIZERS

University of Belgrade, Faculty of Medicine

**University of Belgrade, VINČA Institute of Nuclear Sciences,
National Institute of the Republic of Serbia**

University of Belgrade, Faculty of Biology

SPONSORED BY

Labena

Promedia

Zeiss

SCIENTIFIC COMITTEE

Chair:

Selma Kanazir

Members:

Aleksandra Isaković
Carmen Sandi
Cláudia Nunes Dos Santos
Danijela Savić
Dragomir Milovanović
Elka Stefanova
Frank Jessen
Ivanka Marković
Jelena Radulović
Milena Stevanović
Miroslav Adžić
Nadežda Nedeljković
Nataša Lončarević
Nina Vardjan
Panayiota Poirazi

ORGANIZING COMITTEE

Chair:

Ivana Bjelobaba

Members:

Danijela Savić
Milena Jović
Jelena Ćirić
Smilja Todorović

Effect of ELF-MF (50 Hz, 0.5 mT) on psychomotor behavior of rats caused by acute administration of MK-801

Srđan Kesic^{1,*}, Gordana Stojadinović¹, Ljiljana Martać¹, Slobodan Sekulić^{2,3}, Branka Petković¹

¹*Institute for Biological Research “Siniša Stanković” – National Institute of the Republic of Serbia, University of Belgrade, Department of Neurophysiology, Belgrade, Serbia,*

²*Clinical Center of Vojvodina, Department of Neurology, Novi Sad, Serbia*

³*Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia*

*srdjan.kesic@ibiss.bg.ac.rs

MK-801 can mimic the cognitive, negative, psychotic, and physiological features of schizophrenia, including increased hyperlocomotion and altered behavioral flexibility. As N-methyl-D-aspartate (NMDA) receptor antagonist, it is widely used to test the “glutamate hypofunction hypothesis of schizophrenia”. An extremely low-frequency magnetic field (ELF-MF) can stimulate NMDA receptor activity, but its effect on dysregulated glutamine transmission is unknown. Therefore, this study addresses the effect of continuous exposure to ELF-MF (50 Hz, 0.5 mT) for 7 days on rat psychomotor behavior induced by acute administration of MK-801 (0.25 mg/kg, i.p.). During the experiment, adult male Wistar rats were placed near the on/off generator of ELF-MF, injected with MK-801/saline immediately after 7-day *sham*/ELF-MF exposure, and subjected to the open field test for 2 hours. Their behavior was analyzed using the ANY-maze software and expressed as travel distance, time in movement, and average speed while in motion in 30-min intervals. The results show that (1) acute administration of 0.25 mg/kg MK-801 significantly increased travel distance and time in movement from 60 to 120 min and average speed while in motion from 60 to 90 min compared with saline-injected animals; (2) 7-day exposure to ELF-MF had no significant effect on the behavior of saline- and MK-801-injected animals compared with the corresponding controls. Therefore, it can be concluded that this regime of ELF-MF exposure does not affect the psychomotor behavior of rats caused by the pharmacological modification of glutamine transmission with the applied MK-801 dose.

Acknowledgments: This work was funded by the Ministry of Science, Technological Development and Innovation of the Republic of Serbia (Contract No. 451-03-47/2023-01/200007).