




Eliyahu Dremencov, DSc

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05 Bratislava (Slovakia)

ABOUT ME

I am a head of Neuropharmacological Laboratory within the Center of Biosciences SAS. My primary scientific interest is pathophysiology and treatment of depression and other mood and anxiety disorders, such as post-traumatic stress disorder (PTSD). Mood and anxiety disorders affecting approximately one third of the world population and they are the second major reason for disability worldwide. During the last 25 years, I am trying to understand the pathophysiology of these disorders, focusing in functional interactions between "classical" monoamines, trace amines, endogenous opioids, and corticosteroids, and employing different cutting-edge techniques, such as electrophysiology, microdialysis, and behavioral neuroscience. Using animal models, I am working on the development and early pre-clinical validation of the next-generation treatment strategies for the central nervous system (CNS) disorders, such as activity-dependent "smart" deep brain stimulation and nanotechnology-based targeted delivery of the therapeutic mRNA coding for neurotrophic factors. More information is available behind the link to my laboratory web page:

<https://www.researchgate.net/lab/Neuropharmacological-Laboratory-Eliyahu-Dremencov>

MAIN PROFESSIONAL ACHIVEMENTS

International recognition as an expert in neuropsychopharmacology and biological psychiatry

Demonstrated by a solid record of publications (over 60 peer-reviewed articles, over 1,000 citations without self-citations, and Hirsch Index of 21 according to the Web of Science and 25 according to the Google Scholar) and invitations to act as a research grants evaluator for the prestigious research-funding bodies (Research Executive Agency of the European Union, National Medical Research Council of Singapore, National Research Agency of France, and Department of Health and Human Services of the United States) and reviewer for the highly-impacted scientific journals (Translational Psychiatry, Biological Psychiatry, European Neuropsychopharmacology, International Journal of Neuropsychopharmacology, Journal of Psychopharmacology, Neuropharmacology, etc.).

Strong experience in the acquiring of the competitive external research funding

I won my first research grant as a principal investigator (PI) as early as one year after the completion of my PhD studies. In the last ten years, I have been awarded external research grants with the overall amount over 500,000 Euros.

Leadership experience

I am a head of a research laboratory since 2016. I had acted as a director and deputy director of a governmental research institution with over 50 employees for three years.

Work experience in the industrial sector

Three-year experience as a trial manager in Brains On-Line BV (Groningen, the Netherlands-based contract research organization, now part of Charles Ricers).

Teaching and supervisory experience

I had taught several university courses (e.g., mammalian biology for chemistry students and system physiology for bioinformatics and biotechnology students) and supervised two PhD and three master students.

Entrepreneurship experience

Owner and CEO of Neuroken Consulting, Groningen-based R&D consulting company (established in 2011).

Multidisciplinary education and postdoctoral training

Bachelor degree in biology, master degree in basic medical sciences and PhD degree in neuroscience. Two postdoctoral fellowships: in mood disorders and translational neuroscience.

EDUCATION AND TRAINING

Doctor of Philosophy (PhD)

Bar-Ilan University [30/09/2000 – 29/09/2004]

Address: Ramat-Gan (Israel)

<https://www1.biu.ac.il/indexE.php>

Field(s) of study: Life sciences

Magister of Medical Sciences (MMedSc)

Hebrew University of Jerusalem [30/09/1997 – 26/04/2000]

Address: Jerusalem (Israel)

<https://en.huji.ac.il/en>

Field(s) of study: Health

Bachelor of Sciences (BSc)

Hebrew University of Jerusalem [30/09/1992 – 31/01/1996]

Field(s) of study: Life sciences

Secondary School Diploma

Secondary School No 331 [31/08/1980 – 30/05/1990]

Address: Moscow (Russia)

WORK EXPERIENCE

Leading research fellow

Institute of Molecular Physiology and Genetics, Center of Biosciences, Slovak Academy of Sciences [14/12/2021 – Current]

Address: Dúbravská cesta 9 , 840 05 Bratislava (Slovakia) - <http://www.umfg.sav.sk/en/>

City: Bratislava

Country: Slovakia

- Business or sector: Professional, scientific and technical activities

Independent research fellow

Institute of Molecular Physiology and Genetics, Center of Biosciences, Slovak Academy of Sciences [29/05/2014 – 10/05/2021]

Research fellow

Institute of Molecular Physiology and Genetics, Center of Biosciences, Slovak Academy of Sciences [30/09/2013 – 29/06/2014]

Research fellow

University of Groningen Medical Center [31/12/2012 – 28/10/2013]

Address: Hanzeplein 1, 9713 GZ Groningen (Netherlands) - <https://bscs.umcg.nl/en/>

City: Groningen

Country: Netherlands

Name of unit or department: Department of Biomedical Sciences of Cells & Systems (BSCS) - **Business or sector:** Professional, scientific and technical activities

Research fellow

Brains On-Line BV (now part of Charles River Laboratories) [30/06/2008 – 30/12/2012]

Address: De Mudden 16, 9747 AW Groningen (Netherlands)

City: Groningen

Country: Netherlands

- **Business or sector:** Professional, scientific and technical activities

Research fellow

University of Ottawa Institute of Mental Health Research [30/09/2004 – 29/06/2008]

Address: 1145 Carling Avenue, K1Z 7K4 Ottawa (Canada) - <https://www.theroyal.ca/research>

City: Ottawa

Country: Canada

Name of unit or department: Mood Disorders and Translational Neuroscience - **Business or sector:** Professional, scientific and technical activities

University teaching assistant

Bar-Ilan University [30/09/2000 – 29/09/2004]

Address: 5290002 Ramat-Gan (Israel) - <https://life-sciences.biu.ac.il/>

City: Ramat-Gan

Country: Israel

Name of unit or department: The Mina & Everard Goodman Faculty of Life Sciences - **Business or sector:** Professional, scientific and technical activities

Medical laboratory technician

Hadassah Medical Center [30/09/1997 – 29/09/2000]

Address: Kalman Man 1, 9112001 Jerusalem (Israel) - <http://www.hadassah-med.com/medical-care/clinics/blood-bank>

City: Jerusalem

Country: Israel

Name of unit or department: Blood Bank-Ein Karem - **Business or sector:** Professional, scientific and technical activities

Human resources manager

Israel Defence Forces (IDF) [31/05/1996 – 29/05/1997]

- <https://www.idf.il/EN>

Country: Israel

- **Business or sector:** Public administration and defence; compulsory social security

Database developer

Israel Nature and Parks Authority [30/04/1994 – 29/05/1996]

Address: Jerusalem (Israel) - <https://www.parks.org.il/en/>

City: Jerusalem

Country: Israel

- **Business or sector:** Professional, scientific and technical activities

MANAGEMENT AND LEADERSHIP SKILLS

Deputy Head of the Institute of Molecular Physiology and Genetic

Center of Biosciences, Slovak Academy of Sciences; 15/03/2020 – 31/12/2020

Head of the Institute of Molecular Physiology and Genetic

Center of Biosciences, Slovak Academy of Sciences; 15/03/2020 – 31/12/2020

Member of the Scientific Council

Center of Biosciences, Slovak Academy of Sciences; 03/03/2017 – 06/02/2018

Head of Neuropharmacological Laboratory

Institute of Molecular Physiology and Genetics, Center of Biosciences, Slovak Academy of Sciences; 01/05/2016 – Present

HONOURS AND AWARDS

Best Publication of the Year (applied research)

Center of Biosciences, Slovak Academy of Sciences [2021]

Sarapultsev A, Vassiliev P, Grinchii D, Kiss A, Mach M, Osacka J, Balloova A, Paliokha R, Kochetkov A, Sidorova L, Sarapultsev P, Chupakhin O, Rantsev M, Spasov A, Dremencov E. Combined In Silico, Ex Vivo, and In Vivo Assessment of L-17, a Thiadiazine Derivative with Putative Neuro- and Cardioprotective and Antidepressant Effects. *Int J Mol Sci* 22:13626, 2021.

<https://www.mdpi.com/1422-0067/22/24/13626>

Best Publication of the Year (basic research)

Center of Biosciences, Slovak Academy of Sciences [2018]

Dremencov E, Csatlósová K, Durišová B, Moravčíková L, Lacinová L, Ježová D. Effect of Physical Exercise and Acute Escitalopram on the Excitability of Brain Monoamine Neurons: In Vivo Electrophysiological Study in Rats. *Int J Neuropsychopharmacol* 20:585-592,2017.

<https://academic.oup.com/ijnp/article/20/7/585/3738832>

Fellowship Award

European College of Neuropharmacology (ECNP) [2018]

“Editor’s Choice” Article

International Journal of Neuropsychopharmacology [2017]

Same as above.

Acquisition of Slovak Citizenship

Ministry of Interior of the Slovak Republic [2016]

According to the § 7 section 2b of the Act of the National Council of the Slovak Republic no 40/1993 for individuals "that significantly contributed to the benefit of the Slovak Republic in the fields of economy, science, technology, culture, social or sports".

Fellowship Award

Society of Biological Psychiatry [2008]

Honorable Mention

International College of Neuropharmacology (CINP) [2008]

Prize for Excellence

Faculty of Medicine, University of Ottawa [2007]

Rafaelsen Award

CINP [2006]

Travel Award to attend Workshop of Young Psychopharmacologists in Europe, Nice, France

[2006]

President's Prize

Bar-Ilan University [2005]

Travel Fellowship to Attend Les Houches Summer School of Neurophysics

University of Grenoble, France [2003]

Dean's Prize

Bar-Ilan University, Life Sciences Faculty [2003]

Travel fellowship to attend the WFSBP meeting in Berlin

World Federation of the Societies of Biological Psychiatry (WFSBP) [2001]

RESEARCH GRANTS

Smart deep brain stimulation as a treatment strategy in treatment-resistant depression.

[31/12/2021 – Current]

Scientific Grant Agency of the Ministry of Education of the Slovak Republic and of Slovak Academy of Sciences (Vedecká grantová agentúra MŠVVaŠ SR a SAV: VEGA, EUR 131,400). Role: PI.

Activation of the VGF/BDNF/TrkB pathway by synthetic mRNA encapsulated in polyplex nanoparticles: effects on neural excitability, neuroplasticity, and animal behavior.

[30/06/2021 – Current]

Slovak Research and Development Agency (Agentúra na podporu výskumu a vývoja: APVV), EUR 220,000. Role: PI.

Investigation of the mechanism of action of novel putative antidepressant drugs: pyridoindole derivatives and trace amine-associated receptor-1 (TAAR1) ligands.

[31/12/2017 – 30/12/2021]

VEGA, EUR 36,802. Role: PI.

Long-lasting effect of next generation antidepressants on offspring.

[30/06/2020 – 29/06/2024]

APVV, EUR 250.000. Role: co-investigator.

Unveiling the mechanism(s) underlying the switch to mania during antidepressant treatment: the role of glutamate (UNMET).

[31/12/2018 – 30/12/2021]

Era Net Neuron, EUR 75,000. Role: co-investigator.

Electrophysiological investigations of atypical antipsychotic drugs and their combination with SSRIs on serotonin and norepinephrine neurons.

[31/12/2004 – 30/12/2007]

Postdoctoral Fellowship Support for the *Summa Cum Laude* PhD Alumni. Bar-Ilan University, Ramat-Gan, Israel. USD 12,000. Role: PI. Successfully implemented.

Prenatal and postnatal effects δ - and μ -opioid receptor ligands on the hippocampal development and function.

[30/06/2015 – 29/06/2020]

APVV, EUR 250.000. Role: co-investigator. Successfully implemented.

Effects of stress, induced by immune challenge during the gestation in rats, on maternal care behaviour and on hippocampal neuronal excitability in the offsprings

[31/12/2012 – 30/12/2017]

VEGA, EUR 16,300. Role: PI. Successfully implemented.

Role of neurosecretory neurons and calcium signalling in depression and addictive behaviour: assessment by in-vivo electrophysiology

[30/09/2013 – 29/09/2017]

Scholarship Program of the Slovak Academy of Sciences (160,000 EUR). Role: PI. Successfully implemented.

SUPERVISION OF PHD STUDENTS

Daniil Grinchii, MD. PhD project: Early preclinical testing of new drugs for the treatment of depression.

[31/01/2018 – 30/01/2022]

In collaboration with the Faculty of Natural Sciences, Comenius University in Bratislava.

Ruslan Paliokha, MD. PhD project: Smart deep brain stimulation as (SDBS) as a treatment strategy in brain disorders.

[30/09/2021 – Current]

In collaboration with the Faculty of Natural Sciences, Comenius University in Bratislava.

SUPERVISION OF MSC STUDENTS

Roman Dekhtiarenko. MSc project: Effects of maternal stress and antidepressant treatment on the offspring brain.

[30/09/2021 – Current]

In collaboration with the Faculty of Chemical and Food Technology, Slovak Technical University in Bratislava.

Talah Khoury. MSc project: TAAR receptors as a target for next generation CNS drugs.

[30/09/2019 – 29/09/2021]

In collaboration with the Faculty of Chemical and Food Technology, Slovak Technical University in Bratislava.

Kristína Csatlósová. MSc project: Neuronal mechanisms of the beneficial mood effect of physical exercise.

[30/09/2016 – 29/09/2017]

In collaboration with the Faculty of Natural Sciences, Comenius University in Bratislava.

TEACHING EXPERIENCE

System physiology for biotechnology and bioinformatics students.

[30/09/2003 – 29/09/2004]

Faculty of Computer Science, Jerusalem college of Technology, Jerusalem Israel. Function: course creator, organizer, and lecturer.

Introduction to computers for biology students.

[30/09/2001 – 29/09/2002]

Life Sciences Faculty, Bar-Ilan University, Ramat-Gan, Israel. Teaching assistant.

System physiology for biology students.

[30/09/2000 – 29/09/2004]

Life Sciences Faculty, Bar-Ilan University, Ramat-Gan, Israel. Teaching assistant/laboratory instructor.

Mammalian biology for chemistry students.

[30/09/2000 – 29/09/2004]

Life Sciences Faculty, Bar-Ilan University, Ramat-Gan, Israel. Teaching assistant/laboratory instructor (2000-2001); coordinator of the laboratory module (2001-2004).

Introductory microbiology for biology students.

[30/09/2000 – 29/09/2001]

Life Sciences Faculty, Bar-Ilan University, Ramat-Gan, Israel. Teaching assistant/laboratory instructor.

CERTIFICATIONS

Doctor of Sciences (DSc)

[19/05/2021]

"Higher doctorate" awarded for the substantial accomplishments in teaching, research and service *after* getting the PhD degree. Awarded by the Scientific Council of the Slovak Academy of Sciences. Certificate No 02852/2021.

Leading Research Fellow (I)

[14/12/2021]

Most senior research qualification rank awarded by the Slovak Academy of Sciences. Certificate No 07154/2021.

Independent research fellow (IIa)

[29/01/2014]

Second senior research qualification rank awarded by the Slovak Academy of Sciences, authorizing supervision of PhD students. Certificate No 01171/2014.

Laboratory animal scientist

Authorized to conduct research involving laboratory animals in Slovak Republic (license No 1570/2012/80/2 from 08.09.2015, periodical re-certification No 2987/2019 from 20.11.2019), Netherlands (14.11.2008), and Ontario, Canada (10.12.2005).

Professional Clinical Laboratory Technician

[13/02/1999]

Israeli Ministry of Health; License No 14091

PUBLICATIONS

Ten most significant publications. Selected from the total list of 66 peer-reviewed articles, one book, and six book chapters. The complete list of publications is available at:

<https://eliyahudremencov.academia.edu/research>

(1) Effects of acute and chronic administration of trace amine-associated receptor 1 (TAAR1) ligands on in vivo excitability of central monoamine-secreting neurons in rats

[2022]

<https://www.nature.com/articles/s41380-022-01739-9>

Molecular Psychiatry, DOI: 10.1038/s41380-022-01739-9

IF 13.4

(2) Csatlosova K, Bogi E, Durisova B, Grinchii D, Paliokha R, Moravcikova L, Lacinova L, Jezova D, and Dremencov E. Maternal immune activation in rats attenuates the excitability of monoamine-secreting neurons in adult offspring in a sex-specific way.

[2021]

<https://www.sciencedirect.com/science/article/abs/pii/S0924977X20309731?via%3Dihub>

European Neuropsychopharmacology 43: 82-91

IF 3.9.

(3) Tseilikman V, Komelkova M, Lapshin M, Alliluev A, Tseilikman O, Karpenko M, Pestereva N, Manukhina E, Downey HF, Kondashevskaya M, Sarapultsev A, Dremencov E. High and low anxiety phenotypes in a rat model of complex post-traumatic stress disorder are associated with different alterations in regional brain monoamine neurotransmission.

[2020]

<https://www.sciencedirect.com/science/article/pii/S0306453020301104?via%3Dihub>

Psychoneuroendocrinology 117: 104691

IF 4.7, cited 3 times.

(4) Dremencov E, Csatlósová K, Durišová B, Moravčíková L, Lacinová L, Ježová D. Effect of physical exercise and acute escitalopram on the excitability of brain monoamine neurons: in vivo electrophysiological study in rats.

[2017]

<https://academic.oup.com/ijnp/article/20/7/585/3738832>

International Journal of Neuropsychopharmacology 20: 585-592

IF 4.3, cited 17 times.

(5) Dremencov E, el Mansari M, Blier P. Effects of sustained serotonin reuptake inhibition on the firing of dopamine neurons in the rat ventral tegmental area.

[2009]

<https://www.jpn.ca/content/34/3/223.long>

Journal of Psychiatry and Neuroscience 34: 223-229

IF 6.2, cited 102 times.

(6) Dremencov E, el Mansari M, Blier P. Distinct electrophysiological effects of paliperidone and risperidone on the firing activity of rat serotonin and norepinephrine neurons.

[2007]

<https://link.springer.com/article/10.1007%2Fs00213-007-0818-8>

Psychopharmacology 194: 63-72

IF 4.1, cited 67 times.

(7) Dremencov E, el Mansari M, Blier P. Noradrenergic augmentation of escitalopram response by risperidone: electrophysiologic studies in the rat brain.

[2007]

<https://www.jpn.ca/content/34/3/223.long>

Biological Psychiatry 61: 671-678

IF 9.3, cited 82 times.

(8) Dremencov E, Newman ME, Kinor N, Blatman-Jan G, Schindler CJ, Overstreet DH, Yadid G. Hyperfunctionality of serotonin-2C receptor-mediated inhibition of accumbal dopamine release in an animal model of depression is reversed by antidepressant treatment.

[2005]

<https://www.sciencedirect.com/science/article/pii/S0028390804003028?via%3Dihub>

Neuropharmacology 48: 34-42

IF 4.1, cited 90 times.

(9) Dremencov E, Gispan-Herman I, Rosenstein M, Mendelman A, Overstreet DH, Zohar J, Yadid G. The serotonin-dopamine interaction is critical for fast-onset action of antidepressant treatment: in vivo studies in an animal model of depression.

[2004]

<https://www.sciencedirect.com/science/article/pii/S0278584603002434?via%3Dihub>

Progress in Neuro-Psychopharmacology and Biological Psychiatry 28: 141-147

IF 3.6, cited 100 times.

(10) Dremencov E, Gur E, Lerer B, Newman ME. Subchronic fluoxetine administration to rats: effects on 5-HT autoreceptors activity as measured by in vivo microdialysis.

<https://www.sciencedirect.com/science/article/pii/S0924977X0000078X?via%3Dihub>

European Neuropsychopharmacology 10: 229-236

IF 4.6, cited 18 times (WoS).

OUTREACH ACTIVITIES

Popular science blog "The Chemistry of Mind"

[07/10/2014 – Current]

English

<https://neuroken.wordpress.com/author/neuroken/>

Popular science blog "Secrets of the Brain" ("Тайны Мозга")

[26/08/2014 – Current]

Russian

<https://neuroken.livejournal.com/>

European Researchers' Night Booth "Brain: Factory for Happiness"

[28/09/2017]

Bratislava, Old Market Exhibition Center.

European Researchers' Night Booth "Neuronal networks in action"

[29/09/2016]

Bratislava, Old Market Exhibition Center.

HOBBIES AND INTERESTS

Recreational open water diving

PADI Open Water Diver: Certification Date 01.01.2019, #1901UL4688

PADI Advanced Open Water: Certification Date 21.12.2019, # 1912UJ5278

Logged dives: 13, total time: 7.9 hr., max. depth: 30 m.

Open-water swimming

Competitions:

Vienna Open Water Trial (1,500 m); September 12, 2015.

"Balaton-átúszás": Balaton lake cross-swimming (5,200 m); July 4, 2015, Révfülöp, Hungary

"Zwem 2 Mijl": two-mile open water swimming (3,400 m); August 25, 2013, Groningen, the Netherlands

LANGUAGE SKILLS

Mother tongue(s): **Russian**

Other language(s):

English

LISTENING C2 READING C1 WRITING C1

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Dutch

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

Slovak

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Hebrew

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2