



Curriculum Vitae

Mona Rahdar

Assistant Professor

Physiology Department,
Shahid Beheshti University of Medical Sciences

Personal Information:

Nationality: Iranian

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Education background:

- **Post Doc. 2021-2023**

- Shahid Beheshti University of Medical Sciences
- **Thesis:** Investigating the effect of 5-HT₇ serotonergic receptors on excitability of hippocampal CA1 pyramidal neurons as well as IA and Ih potassium channel currents in a valproic acid rat model of autism
- **Supervisor:** Mahyar Janahmadi

- **PhD. 2015-2021**

- Shahid Beheshti University of Medical Sciences
- **Major:** Medical Physiology
- **Thesis:** Electrophysiological investigation on the role of serotonergic system in the excitability of hippocampal CA1 pyramidal neurons and its possible immunoreactivity response in a rat model of autism induced by valproic acid.
- **Supervisors:** Gila Behzadi, Mahyar Janahmadi

- **M.Sc. 2009-2011**

- Shiraz University

- **Major:** Physiology

- **Thesis:** The Effect of Serotonin Injection in the Ventromedial Hypothalamic Nucleus on the Secretion of Bile, Serum Lipids Profile and Hepatic Enzymes in Rats.

Research Experiences:

✚ **Electrophysiology**

1. Whole-Cell Patch-Clamp Recording (in vitro)
2. Local Field Potential Recording (in vivo)
3. Patch Clamp Recording set up preparation
4. Rodent's brain-slice preparation
5. Brain Cannulation in rat
6. Stereotaxic Surgery

✚ **Histochemistry**

7. Immunohistochemistry (IHC)
8. Enzyme Histochemistry (NADPH-diaphorase)
9. Neuronal Tracing (Fluorescent Fast Blue Retrograde Tracing)
10. Nissl Staining

✚ **Behavioral studies (detection by EthoVision software)**

1. Barnes maze test
2. Novel object recognition test
3. Zero maze test
4. Social Interaction tests
5. Elevated Plus maze test

✚ **Autism model induced by prenatal exposure to valproic acid**

Teaching Experiences:

Cell Physiology → Students of Bachelor of Medicine Bachelor of Surgery (MBBS)

Neurophysiology → Medical and MSc Students

Blood Physiology → Students of Medicine and Pharmacy

Medical Physiology → Paramedical Students

Laboratory Physiology → Students of Medicine, Dentistry and Pharmacy

Research Projects:

Electrophysiological and immunohistochemical investigation of the role of 5-HT₇ receptor in the intrinsic excitability of hippocampal CA1 pyramidal neurons in a rat model of autism induced by valproic acid. Grant No. 11729.

مصوب دانشکده پزشکی دانشگاه ع. پ. شهید بهشتی ۱۳۹۷

Electrophysiological investigation on the role of serotonergic system in the excitability of hippocampal CA1 pyramidal neurons and its possible immunoreactivity response in a rat model of autism induced by valproic acid. Grant No. 29906.

مصوب دانشکده پزشکی دانشگاه ع. پ. شهید بهشتی ۱۴۰۰

Investigating the effect of astrocytic aquaporin-4 inhibition on autistic-like behaviors in male rats. Grant No. 43004904.

مصوب دانشکده پزشکی دانشگاه ع. پ. شهید بهشتی ۱۴۰۲

Investigating the possible differential effects of the autism-like behavioral induction on the electrophysiological properties and functional connectivity of dorsal and ventral hippocampal CA1 pyramidal neuron. Grant No. 43005119.

مصوب دانشکده پزشکی دانشگاه ع. پ. شهید بهشتی ۱۴۰۲

Electrophysiological investigation of the electrical properties of Human Glioblastoma Multiform Cells and the impact of Pulsed Magnetic Field and Photobiomodulation on their excitability. Grant No. 43008727.

مصوب مرکز تحقیقات علوم اعصاب، مرکز تحقیقات نوروفیزیولوژی دانشگاه ع. پ. شهید بهشتی ۱۴۰۲

Investigating the effect of 5-HT₇ serotonergic receptors on excitability of hippocampal CA1 pyramidal neurons as well as IA and Ih potassium channel currents in a valproic acid rat model of autism. Grant No. 4001322

مصوب بنیاد ملی علم ایران، صندوق حمایت از پژوهشگران و فناوران ریاست جمهوری ۱۴۰۰

Investigating the impact of Pulsed Magnetic Field and Photobiomodulation on the electrophysiological investigation of the electrical properties of Human Glioblastoma Multiform Cells and their excitability, and the possible effects on Notch signaling.

Grant No. 4026135

مصوب بنیاد ملی علم ایران، صندوق حمایت از پژوهشگران و فناوران ریاست جمهوری ۱۴۰۲

Investigating the Effect of Pulsed Magnetic Field and Photobiomodulation on the Electrophysiological characteristics of Human and Animal Glioblastoma Multiforme Tissue Using Patch-clamp Technique. Grant No. 4021047.

مصوب موسسه ملی توسعه تحقیقات علوم پزشکی (نیماد) ۱۴۰۲

Publications:

1. Zahra Hosseindokht, Shima Davoudi, **Mona Rahdar**, Mahyar Janahmadi, Mohammadreza Kolahdouz, Pezhman Sasanpour. **2024**, *Photoacoustic viscoelasticity assessment of prefrontal cortex and cerebellum in normal and prenatal valproic acid-exposed rats*, Photoacoustics. doi:<https://doi.org/10.1016/j.pacs.2024.100590>.
2. Shima Davoudi, **Mona Rahdar**, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi. **2023**, *Chronic inhibition of astrocytic aquaporin-4 induces autistic-like behavior in control rat offspring similar to maternal exposure to valproic acid*, Physiology & Behavior, 269: 114286.
3. Vahid Ahli Khatibi, Morteza Salimi, **Mona Rahdar**, Mahmoud Rezaei, Milad Nazari, Samaneh Dehghan, Shima Davoudi, Mohammad Reza Raoufy, Javad Mirnajafi-Zadeh, Mohammad Javan, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi. **2023**, *Glycolysis inhibition partially resets epilepsy-induced alterations in the dorsal hippocampus-basolateral amygdala circuit involved in anxiety-like behavior*, Scientific Reports, 13(1):6520.
4. Vahid Ahli Khatibi[†], **Mona Rahdar**[†], Mahmoud Rezaei, Shima Davoudi, Milad Nazari, Mohammad Mohammadi, Mohammad Reza Raoufy, Javad Mirnajafi-Zadeh, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi. **2023**, *The*

glycolysis inhibitor 2-deoxy-D-glucose exerts different neuronal effects at circuit and cellular levels, partially reverses behavioral alterations and does not prevent NADPH diaphorase activity reduction in the intrahippocampal kainic acid model of temporal lobe epilepsy. Neurochemical Research, Jan;48(1):210-228. († equal contribution).

5. **Mona Rahdar**, Razieh Hajisoltani, Shima Davoudi, Seyed Assad Karimi, Mehdi Borjkhani, Vahid Ahli Khatibi, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi. **2022**, *Alterations in the intrinsic discharge activity of CA1 pyramidal neurons associated with possible changes in the NADPH diaphorase activity in a rat model of autism induced by prenatal exposure to valproic acid*, Brain Research, 1792, 148013.
6. Shima Ebrahimi Khonachaa, Seyed Hamidreza Mirbehbahani, **Mona Rahdar**, Shima Davoudi, Mehdi Borjkhani, Fariba Khodaghli, Fereshteh Motamedi, Mahyar Janahmadi*. **2022**, *Kisspeptin-13 prevented the electrophysiological alterations induced by Amyloid-beta pathology in rat: Possible involvement of stromal interaction molecules and pCREB*, Brain Research Bulletin, 184, 13-23.
7. Razieh Hajisoltani, Soraya Mehrabi, **Mona Rahdar**, Seyed Asaad Karimi. **2022**, *The effects of Na⁺-K⁺-2Cl⁻ cotransporter inhibition on passive avoidance learning and memory deficit in a rat model of traumatic brain injury*. Neuroscience and Behavioral Physiology, 52, 806-815.
8. Maryam Khodaverdi†, **Mona Rahdar**†, Shima Davoudi, Razieh Hajisoltani, Zohreh Tavssoli, Zahra Ghasemi, Aeen Ebrahim Amini, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi*. **2021**, *5-HT7 receptor activation rescues impaired synaptic plasticity in an autistic-like rat model induced by prenatal VPA exposure*. Neurobiology of Learning and Memory. 183, 9, 107462 († equal contribution).
9. Razieh Hajisoltani, Seyed Asaad Karimi, **Mona Rahdar**, Shima Davoudi, Mehdi Borjkhani, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi. **2019**, *Hyperexcitability of hippocampal CA1 pyramidal neurons in male offspring of a rat model of autism spectrum disorder (ASD) induced by prenatal exposure to valproic acid: a possible involvement of Ih channel current*. Brain Research. 1708, 188-199.
10. **Mona Rahdar**, Javad Sajedianfard, Saeed Nazifi, Fatemeh Azizi-Farsani. **2014**, *Effects of ventromedial hypothalamic nucleus cannulated serotonin on bile*

secretion and lipid metabolism in Wistar rats. Online Journal of Veterinary Research©.18 (3),278-286.

11. J. Sajedianfard, F. Azizi-Farsani, S. Nazifi, **M. Rahdar**. **2013**, *Effects of histamine in E2 nucleus of hypothalamus on the regulation of bile secretion and lipid metabolism in the rat*. Comparative Clinical Pathology. 23 (5),1603-1608.
12. Sajedianfard J., **Rahdar M.**, Nazifi S., Azizi-Farsani F. **2013**, *Effects of Centrally Applied Serotonin in Ventromedial Hypothalamic Nucleus on Regulation of Bile Secretion and Lipid Metabolism in the Rat*. J. Phys. Pharm. Adv. 3 (2), 33-40.

Honors:

1. Win Grant in Integrative Neuroscience and Cognition Center (INCC - UMR 8002), NeuroBridges 2023, Cluny, France.
2. Win Grant in 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS2019) as Young Investigators Travel Award, 2019, Kobe, Japan.
3. Win Grant in 5th International Congress of Physiology and Pharmacology as Best Oral Presentation Award, 2023, Tehran, Iran.
4. Win Grant in 4th International Congress of Physiology and Pharmacology as Best Oral Presentation Award, 2021, Semnan, Iran.

Congress: (oral and poster presentations)

1. 11th IBRO World Congress, Granada, Spain, 9-13 September **2023**; **Mona Rahdar**, Mahyar Janahmadi, Differential alterations in excitability and functional connectivity of dorsal and ventral hippocampal ca1 pyramidal neurons in a rat model of autism induced by valproic acid.
2. 9th Federation of the Asian and Oceanian Physiological Societies Congress (FAOPS2019), Kobe, Japan. 28-31 March **2019**; **Mona Rahdar**, Razieh Hajisoltani, Shima Davoudi, Narges Hosseinmardi, Mahyar Janahmad, Altered electrical responsiveness of CA1 pyramidal neurons in a valproic acid rat model of autism.
3. 5nd International Congress of Physiology and Pharmacology, Semnan, Iran. 11-13 October **2023**; **Mona Rahdar**, Morteza Salimi, Mohammad Reza Raoufy,

Mahyar Janahmadi. Differential alterations of the dorsal and ventral hippocampal networks in valproic acid-induced rat autism model.

4. 4nd International Congress of Physiology and Pharmacology, Tehran, Iran. 20-22 October **2021**; **Mona Rahdar**, Shima Davoudi, Vahid Ahli Khatibi, Narges Hosseinmardi, Gila Behzadi, Mahyar Janahmadi, Does induction of autism-like behavior differentially affect the electrophysiological features of the dorsal and ventral hippocampal CA1 pyramidal neurons?
5. 2nd International Congress of Physiology and Pharmacology, Chabahar, Iran. 15-18 February **2018**; **Mona Rahdar**, Gholamhossein Meftahi, Razieh Hajisoltani, Seyed Asaad Karimi, Narges Hosseinmardi, Mahyar Janahmadi, The impact of the inhibition of glutamate transporters on intrinsic Ca²⁺ spike properties in hippocampal CA1 pyramidal neurons in a rat model of alzheimer's disease.
6. 20th Iranian Congress of Physiology & Pharmacology, Hamadan University of Medical Science, 10-15 October, **2011**, **Mona Rahdar**, Javad Sajedianfard, Saeed Nazifi, The effect of serotonin injection in the ventromedial hypothalamic nucleus on the secretion of bile and serum lipids profile in rat.
7. 20th Iranian Congress of Physiology & Pharmacology, Hamadan University of Medical Science, 10-15 October **2011**, Fatemeh Azizi-Farsani, Javad Sajedianfard, **Mona Rahdar**, The effect of histamine injection in E2 nucleus on bile secretion, serum lipids profile and hepatic enzymes concentration in Rats.
8. 7th Iran's Veterinary Students Congress, Shiraz University, 1-3 December, **2010**, **Mona Rahdar**, Javad Sajedianfard, Fateme Azizi-Farsani, Endocrine and Paracrine role of bile acids.
9. 1nd International Congress of Physiology and Pharmacology, Kashan, Iran. 7-11 September **2015**; Fateme Binayi, Siyavash Joukar, Hamid Najafipour, Abdollah Karimi, Farzane Abdollahi, **Mona Rahdar**, Effect of nandrolone decanoate along with mild swimming exercise on susceptibility to ventricular arrhythmia in rat.

Workshop:

1. Flipped Classroom, A new method for university education, Shiraz University, Shiraz, Iran, 10 January, 2024.
2. National Course of New and Applied Educational Technologies in Medical Education, Mashhad University of Medical Sciences, Iran, 15 February – 7 March 2024.
3. Application of artificial intelligence (AI) in various Aspects of medical and basic sciences, Sabzevar University of Medical Sciences, Sabzevar, Iran, 10 July, 2023.
4. MCQ Tests, Shahid Beheshti University of Medical Science, Tehran, Iran, 16 August 2023.
5. Teaching methods (Small Groups), Shahid Beheshti University of Medical Science, Shohadaye Tajrish Hospital, Tehran, Iran, 9 October, 2023.
6. Application of educational technologies in teaching and learning, Shiraz University, Shiraz, Iran, 23- 24 November, 2022.
7. Evoked field potential recording virtual workshop, Physiology department of Tarbiat Modares University, Tehran, Iran, 9 September 2020.
8. IBRO-VLTP Course in Neuroscience, Tarbiat Modares University, Tehran, Iran, September 30 - October 7, 2019, as an instructor.
9. Optogenetics Workshop, Tarbiat Modares University with the cooperation of the University of Zurich, Tehran, Iran, August 23, 2017 (as a participant).
10. Myelin Staining Workshop, Department of Physiology, Tarbiat Modares University, Tehran, Iran, October 31, 2018 (as a participant).
11. Functional Evaluation of Visual Pathway Workshop, Department of Physiology, Tarbiat Modares University, Tehran, Iran, December 8, 2018.
12. IBRO-APRC 5th Tehran School of Neuroscience, Basic approaches in neurological diseases, Tehran, Iran, April 30 - May 11, 2016, as an instructor
13. Research Methodology Workshop, Shahid Beheshti University of Medical Science, Tehran, Iran, July 25, 2017.
14. Workshop of the Concepts of Real-time PCR and its applications along with the principles of analyzing the results, 14th National congress of Biochemistry, Shahid Beheshti University of Medical Science, Tehran, Iran, August 13, 2016.

15. Workshop of the Methods of simultaneous identification, counting, and live imaging of cells using fluorescence and luminescence techniques in hybrid devices, 14th National congress of Biochemistry, Shahid Beheshti University of Medical Science, Tehran, Iran, August 16, 2016.
16. 2nd Powerlab Workshop and new Technique in Bio-Science, Shahid Beheshti University of Medical Science, Tehran, Iran, December 29-30, 2008.

Membership:

- International Brain Research Organization (**IBRO**)
- Iranian Neuroscience Society (**INSS**)
- The Japan Neuroscience Society (**JNS**)
- Iranian Society of Physiology & Pharmacology (**ISPP**)