

Milad Rahimzadegan, Assistant Professor

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<https://scholar.google.com/citations?user=3f8YHS8AAAAJ&hl=en&oi=ao>

PROFESSIONAL PROFILE

Highly accomplished research scientist with over 10 years of academic and industrial expertise in translational *in vitro*, *in vivo*, and *ex vivo* pharmacology and toxicology. I possess a strong background in developing neurodegeneration and cognitive disorders, spinal cord injury, tissue engineering, drug delivery and their impacts on the central nervous system. A proven history of driving innovation through research, developing new technologies, and securing funding. Passionate about continuing to make a significant impact on the fields of cognitive neuroscience and biomedical engineering.

SKILL AND EXPERTISE

- Computational biology
- Stem Cells Culture
- PCR (and real-time PCR)
- Western blot
- Gene expression analysis
- SCI modeling
- Animal handling and treating
- Electrospinning and microfluidics
- Separation of the hippocampus
- Shuttle box and Morris Water Maze tasks
- Immunocyto/histochemistry (ICC and IHC)
- Toxicity tests (MTT, Trypan blue)
- HPLC and GC methods
- Scientific writing
- Statistical modelling (SPSS, GraphPad prism)
- Microsoft Office (Word, PowerPoint, Excel)
- Language: English (B2), Turkish, Persian (native)

CAREER SUMMARY

2021 – Present

Assistant Professor

Functional Neurosurgery Research Center

key Responsibilities:

Mentoring:

- Investigation of the impacts of SARS-CoV-2 on brain renin angiotensin system
- Evaluation of recent advances of PLGA-based drug delivery
- Bioinformatics analysis of the expression of GPR116 in multiple types of cancers
- Clinical evaluations of drugs for patient with CNS tumors
- Investigation of the role of Berberis SSP for treating of Acetaminophen-induced acute liver injury
- Managing of cellular and molecular laboratory
- Financial support of student's projects
- Holding of scientific workshops and webinars

2019 - 2022

Research Scientist

Neuropharmacology & Neurotoxicology

Department, Shahid Beheshti University of Medical Sciences

key Responsibilities:

- Evaluation of recent nano-aptasensors for early diagnosis of acute myocardial infraction.
- Using multiple nano-biomedicals for detecting of AMI markers
- Investigation of graphene-based biosensing for detection of Alzheimer's biomarkers

2018- 2021

Research Assistant

Tehran University of Medical Sciences

Projects Title:

- Investigation of decreasing in Valproic acid hepatotoxicity by Silymarin
- Synthesis and biological evaluation of Piroxicam derivative as a lead chelator for detoxification traits in blood
- Evaluation of neuroprotective effects of lipopolysaccharide and Naltrexone co-preconditioning in the photothrombotic model of unilateral selective hippocampal ischemia
- Memory impairment and oxidative stress evaluation following scopolamine as an anti-cholinergic drug

TEACHING AND LECTURER EXPERIENCES

- **Visiting Lecturer, International Campus of Tehran University of Medical Sciences, 2022-Present.**
University Courses for international students in English: Pharmacokinetics & Pharmacodynamics and Cell Signaling
- **Teacher Assistant, International Campus of Tehran University of Medical Sciences, 2020**
University Courses for international students in English: Practical Toxicology, Neuropharmacology
- **Teacher Assistant, Tehran University of Medical Sciences, 2017-2021**
Professor: Omid Sabzevari
University Courses for Pharm.D Students: Pharmacology & Toxicology
University Courses: Liver Perfusion of Drugs in Animal's Lab (Theoretical and Practical)
- **Teacher Assistant, Tehran University of Medical Sciences, 2017-2021**
Professor: Mohammad Abdollahi
University Courses: Practical Pharmacology- separation of organic compound
- **Teacher, Khalili Education Institute, 2016-2020**
Specialized courses of the institute: Pharmacology, Pharmacotherapy and Toxicology

EDUCATION

- 2016 -2021 **PhD in Pharmacy-Toxicology and Pharmacology**
Department of Pharmacology and Toxicology, School of Pharmacy, Tehran University of Medical Sciences, Iran
Thesis title: **Evaluation of Rolipram cytotoxicity after electrical stimulation to differentiation neural stem cells toward neuron-like cells in a conductive scaffold**
- 2012 - 2015 **M.Sc. in Medical Toxicology**
Tarbiat Modares University, Department of Medical Science, Iran
Thesis title: **Evaluation of short term and long-term effect of single and repeated dose administration of scopolamine on memory impairment, oxidative stress and acetyl cholinesterase activity in rat hippocampus**
- 2008 - 2012 **B.A. in Plant Medicine**
Department of Plant Protection, University of Tehran, Iran

GRANT AND SCHOLARSHIPS

- **Research grant**, Functional Neurosurgery Research Centre. 2022
Project Title: Impacts of SARS-CoV-2 on brain renin angiotensin system related signaling and its subsequent complications on brain
- **Grant**, Tehran University of Medical Sciences, 2018
Project Title: Evaluation of Rolipram cytotoxicity after electrical stimulation to differentiate neural stem cells toward neuron-like cells in a conductive scaffold
- **PhD Government Scholarship**, Tehran University of Medical Sciences, 2016-2021
- **Grant (35,000,000 IRR)**, the Cultural Department of the Ministry of Science, 2014

HONORS & AWARDS

- **First Rank student** in Toxicology and Pharmacology in Tehran University of Medical Sciences, 2021
- **Rank 2** in the specialized Pharmacy-Toxicology and Pharmacology board exam, 2018
- **Rank 1** of the specialized PhD entrance exam in Pharmacy-Toxicology and Pharmacology, Iran, 2016
- Member of **Iran's National Elites Foundation**, 2018
- **Health Expert** and show in Aparat.com media in the International Student Identity Card (ISIC), 2017

CONTRIBUTION TO RESEARCH

JOURNAL REVIEWER

- Life Sciences Journal
- PLOS ONE
- Interventional Pain Medicine and Neuromodulation
- International Clinical Neuroscience Journal

MEMBER OF EDITORIAL BOARD

- Interventional Pain Medicine And Neuromodulation
- International Clinical Neuroscience Journal

MEMBERSHIPS

- The International Brain Research Organization (IBRO)
- Member of the Universal Scientific Education and Research Network (USERN) office
- Iranian Neuroscience Society
- Boards of scientific council (BSCs) member in Functional Neurosurgery Research Centre

Journal Papers:

Published:

- Aghaei Delche N, Kheiri R, Ghorbani Nejad B, Sheikhi M, Sadat Razavi M, **Rahimzadegan M**, Salmasi Z. Recent progress in the intranasal PLGA-based drug delivery for neurodegenerative diseases treatment. Iranian Journal of Basic Medical Sciences. Impact Factor: 2.53 DOI: 10.22038/IJBMS.2023.70192.15264.
- Asl SK, **Rahimzadegan M**. The recent advancement in the chitosan hybrid-based scaffolds for cardiac regeneration after myocardial infarction. "Carbohydrate Polymers". 2022. Impact Factor: 11.2, DOI: 10.1016/j.carbpol.2022.120266
- Asl SK, **Rahimzadegan M**. The recent progress in the early diagnosis of acute myocardial infarction based on myoglobin biomarker; nano-aptasensors approaches. Journal of Pharmaceutical and Biomedical Analysis. 2022 Jan 29:114624. Impact Factor: 3.57, DOI: 10.1016/j.jpba.2022.114624
- Rouhi N, Akhgari A, Orouji N, Nezami A, **Rahimzadegan M**, Kamali H. Recent progress in the graphene-based biosensing approaches for the detection of Alzheimer's biomarkers. "Journal of Pharmaceutical and Biomedical Analysis". 2022. Impact Factor: 3.57, DOI: 10.1016/j.jpba.2022.115084
- **Rahimzadegan M**, Mohammadi Q, Shafieian M, Sabzevari O, Hasannejad Z. Influence of reducing agent on gold nanoparticle-doped PCL/chitosan scaffolds with emphasis on neural proliferation and differentiation." Materials Science & Engineering C ", 2021. Impact Factor: 8.45 , DOI: 10.1016/j.msec.2021.112634
- Kazemi Asl S, **Rahimzadegan M**. Recent Advances in the Fabrication of Nano-aptasensors for the Detection of Troponin as a Main Biomarker of Acute Myocardial Infarction. Critical Reviews in Analytical Chemistry. 2021 Aug 14:1-20. Impact Factor: 6.5, DOI: 10.1080/10408347.2021.1967721
- Keshavarz-Maleki R, Shalmani AA, Gholami M, Sabzevari S, **Rahimzadegan M**, Jeivad F, Sabzevari O. The Ameliorative Effect of Methyl Fumarate and Silymarin against Valproic Acid Induced Hepatotoxicity in Rats. Pharmaceutical Chemistry Journal. 2021 Jun 15:1-6. Impact Factor: 0.837, DOI: 10.1007/s11094-021-02405-0
- Hosseini SM, Imani A, **Rahimzadegan M**, Mohammadi S, Golaghaei A. Synthesis and biological evaluation of Piroxicam derivative as a lead chelator. Main Group Metal Chemistry. 2019 Jan 1;42(1):73-80. Impact Factor:1.068, DOI: 10.1515/mgmc-2019-0008
- Hosseini SM, Golaghaei A, Nassireslami E, Naderi N, Pourbadie HG, **Rahimzadegan M**, Mohammadi S. Neuroprotective effects of lipopolysaccharide and naltrexone co-preconditioning in the photothrombotic model of unilateral selective hippocampal ischemia in rat. Acta Neurobiol Exp. 2019 Jan 1; 79:73-85. Impact Factor: 1.579, DOI: 10.21307/ane-2019-006
- **Rahimzadegan M**, Soodi M. Comparison of memory impairment and oxidative stress following single or repeated doses administration of scopolamine in rat hippocampus. Basic and clinical neuroscience. 2018 Jan; 9(1):5. Impact Factor: 1.287 , DOI: 10.29252/NIRP.BCN.9.1.5
- **Rahimzadegan M**, Nikdel M, Soodi M. International poster presentation with" Time course study of scopolamine-induced memory impairment, oxidative stress and acetylcholinesterase activity in hippocampus following repeated doses". (2018).
- **Rahimzadegan M**, Soodi M. International poster presentation with" Reversible effect of single dose administration of scopolamine on memory impairment, oxidative stress and acetylcholinesterase activity in hippocampus" (2018).
- **Rahimzadegan M**. The relationship between hippocampus and learning, memory and its communication path, Diagnostic Laboratory Journal, Number: 124, (2016).
- Salmani H, **Rahimzadegan M**, Treacher Collins syndrome, A descriptive review, Diagnostic Laboratory Journal, Number: 124, (2016).
- Amani N, **Rahimzadegan M**. The assessment of chlorpyrifos neurotoxicity and its interaction with glutamate induced toxicity in cultured cerebellar granule cells. (2015).

Under review:

- The recent progression in PLGA-based Nose-to-Brain drug delivery. "Life Sciences Journal". Under Review. **Corresponding**.
- Recent progress in the PLGA-based microneedles-mediated transdermal drug and vaccine delivery. "Journal of controlled release". **Co-author**
- Investigating the differentiation of mesenchymal stem cells towards neuron-like cells using nanofiber scaffolds containing Rolipram and applying electrical stimulation." Biomaterials Advances Journal". **First-author**
- Impacts of SARS-CoV-2 on brain renin angiotensin system related signaling and its subsequent complications on brain: as theoretical perspective. "Journal of Cell Communication and Signaling". Under Review. **Corresponding**. Journal of Pharmaceutical and Biomedical Analysis
- COVID-19 Vaccine Hesitancy Worldwide and Its Associated Factors: A Systematic Review and Meta-Analysis. "Journal of Education and Health Promotion". Under Review. **Co-author**
- The recent advancement in the chitosan-based thermosensitive scaffolds and hydrogel for tissue regeneration. "Journal of Drug Delivery Science and Technology". Under Review. **Co-author**
- Role of Berberis SSP and Acetaminophen-induced Acute Liver Injury. "Pharmaceutical Chemistry Journal". Revised and Under Review. **Co-author**.

Books:

- The Subthalamic Nucleus, Springer. Publisher: Shahid Beheshti University of Medical Sciences, ISBN: 978-622, 2021. **Co-author.**
- Spinal Tumor, treatment guide for patients and family. Publisher: Shahid Beheshti University of Medical Sciences, ISBN: 978-622-7595-48-2, 2021. **Co-author.**
- Rang & Dale's Pharmacology. 9th Edition. Elsevier, (to Persian), Publisher: Andishe rafi, ISBN: 978-622-273020-8, 2020. **Co-author.**
- Decennial Iran Question Bank (IQB), Publisher: D.KH, ISBN: 978-600-422-520-5, 2020. **First-author.**
- Pharmacology for Circulatory Technology, Publisher: D.KH, ISBN: 978-600-422-397-3, 2019. **First-author.**
- Basic Principles of Veterinary Toxicology (Three Volumes), Publisher: Tehran university, ISBN: 978-964-03-7243-2, 2019. **Co-author.**
- Pharmacology for PhD in Pharmacy, Publisher: D.KH, ISBN: 978-600-422-393-5, 2018. **First -author.**
- Pharmacotherapy Textbook, Publisher: D.KH, ISBN: 978-600-422-317-1, 2018. **First -author.**
- Hotpoint of Pharmacotherapy, Publisher: D.KH, ISBN: 978-600-422-400-0, 2018. **First -author.**
- Pharmacology and Toxicology, Publisher: D.KH, ISBN: 978-600-8, 2018. **First-author.**
- Hotpoint of Pharmacology, Publisher: D.KH, ISBN: 978-600-422-213-6, 2017. **First -author.**
- Hotpoint of Toxicology, Publisher: D. KH, ISBN: 987, 2017. **First -author.**
- Medical Parasitology, Publisher: D.KH, ISBN: 978_7004, 2017. **Co-author.**
- Toxicology for PhD in Pharmacy, Publisher: D.KH, ISBN: 978-600-422-243-3, 2016. **First -author.**
- 1100 Essential Test of protozoology, Publisher: Omid, ISBN: 978-600-7764-30-5, 2016. **Co-author.**
- Helminthology (Trematodes), Publisher: Boshra Medical Science, ISBN: 978-964-399-43-41, 2016. **Co-author.**