

Curriculum Vitae

Roghaieh Khakpay



Born: May 23, 1974

Citizenship: Iran

Sex: Female

Marital status: Married

Academic status: Associate Professor of Physiology

Address: Department of Animal Biology, Faculty of Natural Sciences, University of Tabriz, P. O. Box 51666-16471, Tabriz, Iran

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EDUCATION

2004-2010 PhD in Physiology, Tarbiat Modares University, Tehran, Iran
(Mean score: 16.75 from 20)

Thesis title: Assessing the pain modulatory effect of intra-coeruleus 17- β -estradiol injection: Behavioral, electrophysiological and molecular study.

Supervisor: Professor S. Semnanian

1998-2001 M.Sc. in Animal Physiology, Shaheed Beheshti University, Tehran, Iran
(Mean score: 18.35 from 20).

Thesis title: Effect of Baclofen on plasma concentration of Growth hormone, Triiodothyronine, thyroxin and milk production and its composition in Holstein cows.

Supervisor: Dr. H. Khazali

1994-1998 B.Sc. in Biology, Shiraz University, Shiraz, Iran
(Mean score: 16.73 from 20).

ACADEMIC BACKGROUND

University of Tabriz (2011- now)

- **MSc courses including:**

Physiology of Cell Membrane, Behavioral Neurophysiology, Physiology of Renal system, Species and Speciation, Physiology of Reproductive system, Organogenesis of vertebrates.

- **BSc courses including:**

Cell Physiology, Animal Physiology 1 (Systems), Animal Physiology 1 Lab, Animal Physiology 2 (Nervous System and Endocrine Glands), Animal Physiology 2 Lab, Animal Behavior, Comparative Animal Physiology, Principals of Animal Physiology, Principals of Animal Physiology Lab, Invertebrate Zoology, Invertebrate Zoology Lab, Vertebrate Zoology, Vertebrate Zoology Lab, Animal Sciences, Animal Sciences Lab, Principals of Zoology, Principals of Zoology Lab, Biology for Psychiatry, Physiology and Physiology Lab for Medical engineering.

Tabriz Payam Noor University (2003-2005)

- **BSc courses including:**

Animal Physiology 1, Animal Physiology Lab 1, Animal Physiology 2, Animal Physiology Lab 2, Animal Physiology 3, Zoology 1, Zoology Lab 1, Zoology 2, Zoology Lab 2.

Ardestan Payam Noor University (2003-2004)

- **BSc courses including:**

Animal Physiology 1, Animal Physiology Lab 1, Animal Physiology 2, Animal Physiology Lab 2, Zoology 1, Zoology Lab 1, Zoology 2, Zoology Lab 2.

Academic and scientific positions

- Director of Animal Biology Department, Since March 2025
- Membership in the Arbitration Committee of the 20th National and 8th International Congress of Biology
- Membership in the Scientific Committee of the 19th National and 7th International Congress of Biology
- Membership in the Arbitration Committee of the Individual Stage of the Field of Scientific Thinking in the Basic Sciences of the 9th Scientific Olympiad in Medical Sciences Students of Iran
- Membership of the Question Making and Arbitration Committee of the 22th Biology Olympiad in the Region 3 of Iran
- Head of the final examination administration in the Spring semester of the academic year 2015-2016
- Assistant head of the final examination administration in the Fall semester of the academic year 2016-2017
- Assistant head of the final examination administration in the Spring semester of the academic year 2016-2017
- Assistant head of the final examination administration in the Fall semester of the academic year 2023-2024
- Collaborate with the Arbitration Division of the Journal of Physiology and Pharmacology
- Honorary cooperation with the Editorial Board of the Journal of Physiology and Pharmacology

Scientific society membership

- Iranian Physiology and Pharmacology Society - 2003
- Iranian society for the study of pain - 2008
- International Brain Research Organization (IBRO) - 2006
- International Association for the Study of Pain (IASP) - 2008
- Iranian Biology Society - 1999

RESEARCH EXPERIENCE

- Whole-cell patch-clamp recording method (sEPSC, eEPSC, mEPSC)
- Slice preparation of Prefrontal Cortex, LPGi, Basolateral Amygdala and locus coeruleus (LC)
- Extracellular single unit recording methods in rat brain
- Real time RT-PCR technique
- Stereotaxic surgery of rat brain and cannulation
- Ovariectomy surgery in female rats
- Behavioral animal models of pain
- Animal models of addiction to morphine
- Behavioral animal models of social hierarchy
- Behavioral animal models of cognitive behaviors
- Behavioral animal models of emotional behaviors
- Behavioral animal models of learning and memory
- Radioimmunoassay method
- Measurement of milk composition by Mliko-Scan Machinery
- Short-term working with a Confocal microscope

ISC (NATIONAL) JOURNAL ARTICLES

1. Z. Nanava, H. Hatami Nemati, H. Ahmadi, **R. Khakpay**: Study on Changes in the Expression of Histamine and Histamine N-Methyltransferase Genes in the Lumbar Spinal Cord of Male Rats during Methamphetamine Abuse and Buprenorphine Treatment. J Arak Uni Med Sci 29(1), 5-12 (2026). doi: 10.66224/jams.29.1.5

2. Z. Heidarzadeh, **R. Khakpay**, M. Banan Khojasteh, F. Khakpai: The role of the estrogen receptors of paragigantocellularis lateralis nucleus in the antinociceptive effect of 17 β -estradiol during proestrus phase of estrous cycle of female rats, Arak Medical University Journal, 22(2), 2019 35-46 (Persian).
3. S. Abdi, H. Hatami Nemati, **R. Khakpay**, GH. Dehghan: The effect of ethanolic extract of *Ferula szowitsiana* on cognitive deficits and lipid peroxidation induced by ethidium bromide in experimental model of MS, Journal of Shahid Sadoughi University of Medical Sciences, 26(11), 2019 1009-1018 (Persian).
4. **R. Khakpay**, Z. Heidarzadeh, F. Khakpay: The role of estrogen receptors of paragigantocellularis lateralis nucleus in the 17 β -estradiol-induced pain modulation during estrus phase of female rats during estrus phase of female rats, J Rafsanjan Univ Med Sci 17(7), 2018 597-610 (Persian).
5. **R. Khakpay**, S. Ansari, F. Khakpay: the antinociceptive effect of 17 β -estradiol in the paragigantocellularis lateralis nucleus of ovariectomized female rats mediated by estrogen receptors, Arak Medical University Journal, 20(125), 2017 29-38 (Persian).
6. **R. Khakpay**, H. Feizy, F. Sheikhzadeh Hesari: The role of NMDA receptors of the Paragigantocellularis Lateralis nucleus in the antinociceptive effect of 17 β -estradiol in ovariectomized female rats, Arak Medical University Journal, 20(124), 2017 23-33 (Persian).
7. H. Hatami Nemati, S. Abdi, **R. Khakpay**, GH. Dehghan: Investigating the effect of *Ferula szowitsiana* on the antioxidant system parameters in the hippocampus of male rats following Multiple Sclerosis induction, Journal of Ilam University of Medical Sciences, 25(1), 2017 33-44 (Persian).
8. **R. Khakpay**, S. Barani, H. Hatami Nemati: Assessing the effect of intra-paragigantocellularis lateralis injection of 17 β -estradiol on the acute and persistent pain in the male rat, Physiol Pharmacol, 18(4), 2015 445-465 (Persian).
9. **R. Khakpay**, S. Barani, H. Hatami Nemati: The antinociceptive effect of 17 β -estradiol in the paragigantocellularis lateralis of male rats is mediated by estrogenic receptors, Physiol Pharmacol, 18(2), 2014 215-223 (Persian).
10. M. Goudarzvand, H. Azhdari-Zarmehri, **R. Khakpay**: Effect of adenylyl cyclase inhibitor (SQ-22536) injection in rostral ventromedial medulla on formalin induced nociceptive behavior in rats. Knowledge & Health, 4(4), 2010 11-17 (Persian).
11. **R. Khakpay**, S. Semnanian, M. Javan, M. Janahmadi: Is the pain modulatory action of 17 β -estradiol in locus coeruleus male rats mediated by GABAA receptors? Physiol Pharmacol, 14(3), 2010 252-261 (Persian).

12. **R. Khakpay**, H. Khazali: The effect of baclofen on growth hormone and on the amount of milk production and its compositions in Holstein cows, *Physiology and Pharmacology*, 9(2), 2006 163-166 (Persian).
13. **R. Khakpay**, H. Khazali: The effect of baclofen on growth hormone, thyroxin and triiodothyronin in Holstein cows, *Physiology and Pharmacology*, 7(1), 2003 89-94 (Persian).

ISI, SCOPUS & WOS JOURNAL ARTICLES

1. M. Aghaei, **R. Khakpay**, F. Khakpai, M.H. Feizi: Involvement of the cannabinoid receptors of the basolateral amygdala in the orexin A-mediated modulation of the stress-induced analgesia. *Neuropharmacology* 299, 111126 (2026). doi: 10.1016/j.neuropharm.2026.111126.
2. F. Salahpour-Anarjan, S.T. Azar, S. Khavandkari, **R Khakpay**, R. Rahbarghazi, A. Zarebkohan: Repurposing of cyclophosphamide as a chemo-immunotherapy agent in glioma using D8/RI-VAP modified-chitosan nanoparticles. *Biomed Pharmacother* 201, 119698 (2026). doi: 10.1016/j.biopha.2026.119698.
3. S. Ansari, **R. Khahpay**, F. Khakpai, *et al.* Comparison of pain modulatory effect of the LPGi estragon receptor on inflammatory pain between pro-estrus and estrus phases and OVX rats. *Psychopharmacology* 242, 129–147 (2025). <https://doi.org/10.1007/s00213-024-06653-2>
4. H. Feyzi, F. Khakpai, **R. Khakpay**, F.S. Hesari, S. Semnianian: Intra-LPGi microinjection of glutamate receptors antagonists abolishes 17 β -estradiol-induced analgesic effect in the ovariectomized rats. *Acta Neurobiol Exp (Wars)*. 2022;82(4):521-533. doi: 10.55782/ane-2022-050. PMID: 36748975.
5. S. Borneh Deli, S. Iman Bonab, **R. Khakpay**, F. Khakpai, M.A. Hosseinpour Feyzi: An interaction between basolateral amygdala orexinergic and endocannabinoid systems in inducing anti-nociception in the rat formalin test, *Psychopharmacology*, 239, 2022 3171-3184; <https://doi.org/10.1007/s00213-022-06199-1>.
6. S. Heysieattalab, **R. Khakpay**, M. Fadaeimoghadam Heydarabadi, M. Aboureihani Mohammadi, S. Hashemi, F. Bagheri: Effects of social hierarchy on innate fear-induced panic responses, 82(2), 2022 <https://ane.pl/archive?vol=82&no=2&id=8221>).

7. **R. Khakpay**, F. Khakpai: Modulation of anxiety behavior in gonadectomized animals, *Acta Neurobiologiae Experimentalis*, 80(3), 2020 205-216; <https://doi.org/10.21307/ane-2020-019>.
8. **R. Khakpay**, M. Azaddar, F. Khakpay: Involvement of glutamate receptors of the paragigantocellularis lateralis nucleus in the pain modulatory effect of 17 β -estradiol in male rats, *Acta Neurologica Belgica*, 120, 653–660 (2020). <https://doi.org/10.1007/s13760-018-0998-5>.
9. **R. Khakpay**, H. Feizy, F. Sheikhzadeh Hesari: The role of the AMPA receptors of Paragigantocellularis Lateralis nucleus in inflammatory pain modulation in ovariectomized female rat, *J Mazandaran Univ Med Sci*, 28(159), 2018 23-37 (Persian).
10. **R. Khakpay**, M. Azaddar: Role of the AMPA receptors of paragigantocellularis lateralis nucleus in the inflammatory pain modulation in male rat, *Physiol Pharmacol*, 2017; 21 147-154.
11. **R. Khakpay**, M. Azaddar, F. Khakpay, H. Hatami Nemati: The analgesic effect of 17 β -estradiol in the nucleus paragigantocellularis lateralis of male rat is mediated via GABA_A receptors, *Journal of Basic and Clinical Neuroscience*, 8(1) 2017 51-60.
12. **R. Khakpay**, M. Azaddar, F. Khakpay: The antinociceptive effect of 17 β -estradiol in the nucleus paragigantocellularis lateralis of male rats may be mediated by the NMDA receptors, *Physiol Pharmacol*, 20(2), 2016 122-129.
13. **R. Khakpay**, M. Azaddar, F. Khakpay, H. Hatami Nemati: The role of GABA_A receptors in the analgesic effect of intra-paragigantocellularis lateralis injection of 17 β -estradiol in male rat, *Physiol Pharmacol*, 19(2), 2015 99-106.
14. H. Azhdari-Zarmehri, S. Semnianian, Y. Fathollahi, E. Erami, **R. Khakpay**, H. Azizi, K. Rohampour: Intra-preaqueductal gray matter microinjection of orexin-A decreases formalin-induced nociceptive behaviors in adult male rats, *Journal of Pain*, 2011; 12 (2) 280-287.
15. **R. Khakpay**, D. Polster, L. Köles, A. Skorinkin, B. Szabo, K. Wirkner, P. Illes: Potentiation of the glutamatergic synaptic input to rat locus coeruleus neurons by P2X7 receptors, *Purinergic Signaling*, 2010; 6 (3) 349-359.
16. **R. Khakpay**, S. Semnianian, M. Javan, M. Janahmadi: The role of intra-locus coeruleus injection of 17 β -estradiol in the inflammatory pain modulation in male rat, *Behav Brain Res*, 2010; 214 (2) 409-416.

CONGRESS PRESENTATIONS

14th Congress of Basic and Clinical Neuroscience

- S. Khavankari, **R. Khakpay**, S. Heysieattalab, D. Shanebandi: The gene expression level of orexin receptor type 1 of the basolateral amygdala is not changed by social hierarchy during acute thermal pain induction in male rat. December 10-12, 2025, Tehran, Iran.

12th Congress of Basic and Clinical Neuroscience

- S. Khavankari, **R. Khakpay**, D. Shanebandi, S. Heysieattalab: Blockade of the orexin receptor type 1 of the basolateral amygdala induces hyperalgesia in dominant male rats. December 27-29, 2023, Tehran, Iran.

10th Congress of Basic and Clinical Neuroscience

- M. Aghaei, **R. Khakpay**, F. Khakpai, M.A. Hosseinpour-Feyzi: The role of CB1 receptors of basolateral nucleus of amygdala in the neutralizing effect of orexin A on the innate fear-induced analgesia in male rats. December 22-24, 2021, Tehran, Iran.
- M. Aminian, **R. Khakpay**, F. Khakpai, D. Shanebandi: The role of endocannabinoid system of the basolateral nucleus of the amygdala in the gene expression alternations of $\beta 1$ -and $\beta 3$ -subunits of GABAA receptors. December 22-24, 2021, Tehran, Iran.
- N. Naseri, **R. Khakpay**, F. Khakpai, N. Zeinalzadeh: The orexin type 1 receptor antagonist mediates neither orexin type 1 nor cannabinoid type 1 receptor gene expression of the BLA nucleus of amygdala following thermal pain induction in the male rats. December 22-24, 2021, Tehran, Iran.
- A.A. Barzegari, M. Azaddar, **R. Khakpay**: Molecular docking study of the analgesic effect of 17- β estradiol by NMDA receptor. December 22-24, 2021, Tehran, Iran.

4th International and 25th National Congress of Physiology and Pharmacology

- M. Aghaei, F. Khakpai, **R. Khakpay**, M.A. Hosseinpour-Feyzi: Injection of Orexin A into the Basolateral Nucleus of Amygdala Reverses the Innate-Fear Induced Analgesia in Male Rats October 20-22, 2021, Tehran, Iran.
- M. Aminian, F. Khakpai, **R. Khakpay**, D. Shanebandi: The Role of Endogenous Orexin in the Gene Expression Alternations of $\beta 1$ -and $\beta 3$ -Subunits of GABAA Receptors of the Basolateral Nucleus of the Amygdala. October 20-22, 2021, Tehran, Iran.

- GH. Ashouri, F. Khakpai, **R. Khakpay**, D. Shanehbandi: Blockade of Orexin Type 1 Receptors of Basolateral Nucleus of Amygdala Increases the Gene Expression of $\alpha 2$ - but not $\alpha 1$ - subunits of GABAA Receptors. October 20-22, 2021, Tehran, Iran.
- A.A. Barzegari, M. Azaddar, **R. Khakpay**: Molecular docking study of the analgesic effect of 17- β estradiol by GABAA receptor. October 20-22, 2021, Tehran, Iran.

9th Congress of Basic and Clinical Neuroscience

- M. Aghaei, F. Khakpai, **R. Khakpay**, M.A. Hosseinpour-Feyzi: Endogenous orexin release in the basolateral nucleus of amygdala prevents the innate fear-induced analgesia in the male rats. December 9-11, 2020, Tehran, Iran.
- M. Eqbali, **R. Khakpay**, H. Hatami Nemati, A. Ali-Hemmati: The sensitivity to thermal pain is dose-dependently altered by intra-BLA injection of orexin receptor antagonist (SB334867). December 9-11, 2020, Tehran, Iran.
- N. Naseri, **R. Khakpay**, F. Khakpai, N. Zeinalzadeh: The effect of endogenous orexin and endocannabinoids on the cannabinoids type 1 receptor gene expression following thermal pain induction in the male rats. December 9-11, 2020, Tehran, Iran.

1st Annual Meeting of Georgian Center for Neuroscience Research

- M. Fadaeimoghadam Heydarabadi, M. Aboureihani Mohammadi, S. Hashemi, **R. Khakpay**, S. Heysicattalab: Innate Fear Under Social Hierarchy. February 20-22, 2020, Tbilisi, Georgia.

8th Congress of Basic and Clinical Neuroscience

- Mahnaz Aghaei, **R. Khakpay**, M.A. Hosseinpour-Feyzi, F. Khakpai: Intra-DMH/VMH injection of bicuculline can induce the innate fear that followed by analgesia. December 18-20, 2019, Tehran, Iran.
- M. Eqbali, **R. Khakpay**, H. Hatami Nemati, A. Ali-Hemmati: The sensitivity to thermal pain is dose-dependently altered by intra-BLA injection of orexin A. December 18-20, 2019, Tehran, Iran.
- S. Hashemi, **R. Khakpay**, F. Khakpai: Intra-BLA injection of orexin A counteracts the innate fear-induced analgesia. December 18-20, 2019, Tehran, Iran.

3rd International and 24th National Congress of Physiology and Pharmacology

- S. Bornedeli, **R. Khakpay**, F. Khakpai, M.A. Hosseinpour-Feyzi: The role of orexin A intra-basolateral nucleus injection of orexin in the pain modulation and in the gene expression of cannabinoid receptor 1 in the adult male rats. October 30-November 1, 2019, Tehran, Iran.

20th National and 8th International Congress of Biology

- **R. Khakpay**: Receptors involved in the antinociceptive effect of 17 β -estradiol in the paragigantocellularis lateralis nucleus of ovariectomized female rats. August 22-24, 2018, Maragheh, Iran.

5th Congress of Basic and Clinical Neuroscience

- M. Azaddar, **R. Khakpay**, F. Khakpay, H. Hatami Nemati: The antinociceptive effect of 17 β -estradiol in the nucleus paragigantocellularis lateralis of male rat is mediated by AMPA receptors. Tehran, Iran, December 7-9, 2016. (Oral)
- M. Azaddar, **R. Khakpay**, F. Khakpay, H. Hatami Nemati: The antinociceptive effect of 17 β -estradiol in the paragigantocellularis lateralis nucleus of male rats is mediated by NMDA receptors. Tehran, Iran, December 7-9, 2016.
- S. Ansari, **R. Khakpay**, F. Sheikhzadeh Hesari, F. Khakpay: The role of estrogen receptors in the pain modulatory effect of intra-paragigantocellularis lateralis injection of 17 β -estradiol in the ovariectomized female rat. Tehran, Iran, December 7-9, 2016.
- H. Feizi, **R. Khakpay**, S. Semnianian, F. Sheikhzadeh Hesari: The role of NMDA receptors in the pain modulatory effect of 17 β -estradiol in the nucleus paragigantocellularis lateralis of ovariectomized female rats. Tehran, Iran, December 7-9, 2016.

19th National and 7th International Congress of Biology

- M. Azaddar, **R. Khakpay**, F. Khakpay, H. Hatami Nemati: Allosteric activation of NMDA receptors of paragigantocellularis lateralis nucleus by 17 β -estradiol induces analgesia in male rats. Tabriz, Iran, August 30-September 1, 2016. (Oral)
- **R. Khakpay**: Assessing the mechanism of 17 β -estradiol-induced analgesia in the LPGi nucleus of male rat. Tabriz, Iran, August 30-September 1, 2016. (Oral)

6th International Conference of Cognitive Science

- M. Azaddar, **R. Khakpay**, F. Khakpay, H. Hatami Nemati: The role of GABA_A receptors in the antinociceptive effect of intra-paragigantocellularis lateralis 17 β -estradiol in male rat. Tehran, Iran, April 27-29, 2015.

First International and 22th National Congress of Physiology and Pharmacology

- M. Azaddar, **R. Khakpay**, F. Khakpay, H. Hatami Nemati: The role of GABA_A receptors in the antinociceptive effect of intra-paragigantocellularis lateralis 17 β -estradiol in male rat. Kashan, Iran, September 7-11, 2015.

3th Congress of Basic and Clinical Neuroscience

- S. Barani, **R. Khakpay**, H. Hatami Nemati: Assessing the pain modulatory effect of intra-paragigantocellularis lateralis 17 β -estradiol injection in male rat. Tehran, Iran, October 29-31, 2014.

18th National and 6th International Congress of Biology

- S. Barani, **R. Khakpay**, H. Hatami Nemati: The pain modulatory effect of 17 β -estradiol in paragigantocellularis lateralis of male rat. Karaj, Iran, August 26-29, 2014.

21th International Iranian Congress of Physiology and Pharmacology

- **R. Khakpay**, S. Semnianian, M. Javan, M. Janahmadi: Receptors involved in pain modulatory effect of 17 β -estradiol in the locus coeruleus nucleus of male rat. Tabriz, Iran, August 23-27, 2013.

Basic and Clinical Neuroscience Congress

- **R. Khakpay**, S. Semnianian, M. Javan, M. Janahmadi: Is the pain modulatory effect of 17 β -estradiol in locus coeruleus of male rats mediated by estrogen receptors? Tehran, Iran, November 7-9, 2012. (Oral)

20th Congress of Physiology and Pharmacology

- **R. Khakpay**, T. Riedel, L. Köles, K. Wirkner, P. Illes, S. Semnianian: Potentiation of the glutamatergic synaptic input to rat locus coeruleus neurons by astrocytic P2X₇ receptors. Hamedan, Iran, October 10-14, 2011. (Oral)

13th world congress on pain

- **R. Khakpay**, S. Semnianian, M. Javan, M. Janahmadi, Taskina Ali: The role of intra-locus coeruleus injection of 17 β -estradiol in the inflammatory pain modulation in male rat. Toronto, Canada, August 28-31, 2010.

- H. Azhdari Zarmehri, Y. Fathollahi, S. Semnanian, S. Semnanian, H. Azizi, **R. Khakpay**, K. Rohampour: Circuitry underlying for orexin-A induced analgesia action in the nucleus raphe magnus. Toronto, Canada, August 28-31, 2010.

19th Congress of Physiology and Pharmacology

R. Khakpay, S. Semnanian, M. Javan, M. Janahmadi: The role of intra-locus coeruleus injection of 17 β -estradiol in the inflammatory pain modulation in male rat. Tehran, Iran, November 3-6, 2009.

18th Congress of Physiology and Pharmacology

R. Khakpay, H. Khazali, Effect of baclofen on the plasma concentration of thyroxin and triiodothyronin in Holstein cows. Mashhad, Iran, August 26-30, 2007.

17th Congress of Physiology and Pharmacology

R. Khakpay, H. Khazali, The effect of baclofen on the concentration of growth hormone and the amount of milk production and its compositions in Holstein cows. Kerman, Iran, October 1-3, 2005.

First Congress of Anatomical and Clinical Study of Brain Cortex

R. Khakpay, H. Khazali, The effect of baclofen on growth hormone, thyroxin and triiodothyronine in Holstein cows. Tehran, Iran, February 26-27, 2003.

THESIS SUPERVISION

M.Sc., Animal Physiology students:

1. Assessing the GluA1 and GluA3b-flip subunits of AMPA receptor expression levels following intra-basolateral amygdala injection of orexin receptor type 1 antagonist in the dominant and subordinate male rats. **Mahsa Ahmadian**, University of Tabriz, (In progress).
2. Assessing the potential protective effects of probiotics on the BTEX-polluted water consumption-induced changes in the histology of digestive and urinary systems in juvenile male rats. **Parvin Rashtabari**, University of Tabriz, (In progress).

3. Assessing the potential protective effects of probiotics on the BTEX-polluted water consumption-induced changes in the histology of the heart and reproductive system in juvenile male rats. **Shaqayeq Mohammadi**, University of Tabriz, (In progress).
4. Assessing the role of probiotics on the stress oxidative induced by BTEX-polluted water consumption in the juvenile male rats. **Einas Abdolmohsen Akvash Almafraji**, University of Tabriz, (In progress).
5. Assessing the role of probiotics on the effects of BTEX-polluted water consumption on memory, anxiety, and histological changes of the hippocampus and amygdala the juvenile male rats. **Nada Ali Aboud Alazavi**, University of Tabriz, (In progress).
6. Assessing the role of endocannabinoids of the dorsal hippocampus on the memory, anxiety, and cannabinoid receptor type 1 gene expression changes in the adult male rats. **Sina Qorbanpour**, University of Tabriz, (In progress).
7. Investigating the role of the endogenous orexins of the dorsal hippocampus in memory, anxiety, and the orexin receptor type 1 gene expression alterations in adult male rats. **Dorna Towhidi**, University of Tabriz, (In progress).
8. Assessing the role of orexin receptor type 1 of basolateral amygdala in the synapsin 2a and synapsin 2b gene expression alterations of dominant and subordinate male. **Roghaieh Yari**, University of Tabriz, (In progress).
9. Examining the effects of electromagnetic fields and physical training on inflammatory pathways. **Fatemeh Babaei**, University of Tabriz, (In progress).
10. Assessing the AtLAS and Sera/Pkm2 LncRNAs expression levels following intra-basolateral amygdala injection of orexin receptor type 1 antagonist in the dominant and subordinate male rats. **Asma Jomae Halil**, University of Tabriz, (2025-2026).
11. The role of the orexin type 1 receptors of the basolateral amygdala in the social rank-associated thermal pain modulation in male rats. **Sharareh Khavandkari**, University of Tabriz, (2023-2024).

12. Evaluation of the gene expression level of β_1 and β_3 subunits of GABA_A receptors of the basolateral amygdala following both thermal pain and innate fear induction in male rats. **Neda Zendehdel**, University of Tabriz, (2020-2024).
13. Evaluation of the gene expression level of β_1 - and β_3 -subunits of GABA_A receptors of the basolateral nucleus of amygdala following the inflammatory pain induction in adult male rats. **Samaneh Khademnejad**, University of Tabriz, (2020-2024).
14. Assessment the effect of orexin A-induced analgesia on the gene expression level of alpha-2, alpha-3 and beta-2 subunits of GABA_A receptors of basolateral amygdala of adult male rats. **Fatemeh Naseri Shekarloo**, University of Tabriz, (2022-2023).
15. Evaluation of the gene expression alterations of the orexin type 1 and cannabinoid type 1 receptors in the basolateral amygdala following both thermal pain and innate fear induction in the male rats. **Ali Abdorazag Hassoun**, University of Tabriz, (2021-2023).
16. Evaluation of the gene expression alterations of the alpha-1 and alpha-2 subunits of GABA_A receptors in the basolateral amygdala following both thermal pain and innate fear induction in the male rats. **Ali AL-Oraifi**, University of Tabriz, (2021-2023).
17. Evaluation of changes in the expression of histamine and histamine N-methyltransferase (HNMT) genes in the lumbar spinal cord of male rats during addiction to crystal meth and treated with buprenorphine. **Zahra Nanvaye Sabegh**, University of Tabriz, (2020-2022).
18. Evaluation of the gene expression level of β_1 and β_3 subunits of GABA_A receptors of the basolateral nucleus of amygdala following innate-fear-induced pain modulation in adult male rats. **Marjan Aminian**, University of Tabriz, (2020-2022).
19. Evaluation of the gene expression level of α_1 and α_2 subunits of GABA_A receptors of the basolateral nucleus of amygdala following innate-fear-induced pain modulation in adult male. **Ghazal Ashouri**, University of Tabriz, (2020-2022).
20. Evaluating the orexin type 1 and α_1 subunit of GABA_A receptors gene expression in the BLA nucleus of amygdala following the acute inflammatory pain induction in the adult male rats. **Samira Imen Bonab**, University of Tabriz, (2019-2022).

21. Evaluating the orexin type 1 and cannabinoid type 1 receptors gene expression in the BLA nucleus of amygdala following the acute thermal pain induction in the adult male rat. **Nasim Naseri Gharehchopigh**, University of Tabriz, (2019-2020).
22. Change in the expression of COMT and Dopamine genes in the lumbar spinal cord of male rats addicted to crystal meth and under treatment by Buprenorphine. **Fereshteh Hosseini**, University of Tabriz, (2019-2020).
23. Change in the expression of MAO and Norepinephrine genes in the lumbar spinal cord of male rats addicted to crystal meth and under treatment by Buprenorphine. **Nina Jajae**, University of Tabriz, (2019-2020).
24. Assessing the interaction of orexin A and endocannabinoids in the amygdala BLA nucleus in the acute thermal pain modulation elicited by innate fear-induced analgesia in adult male rats. **Soheila Hashemi**, University of Tabriz, (2017-2019).
25. Assessing the effect of intra-basolateral nucleus of amygdala injection of orexin A in the acute thermal pain modulation in the adult male rats. **Maryam Eghbali**, University of Tabriz, (2017-2019).
26. Assessing the interaction of orexin A and endocannabinoids on the innate fear-induced acute inflammatory pain modulation and endocannabinoid receptore1 gene expression in the BLA nucleus of amygdala in the adult male rat. **Mahnaz Aghaei**, University of Tabriz, (2017-2019).
27. Assessing the effect of intra-basolateral nucleus injection of orexin in the pain modulation and endocannabinoid receptore1 gene expression in the BLA nucleus of amygdala in the adult male rats. **Soghra Borneledi**, University of Tabriz, (2016-2019).
28. Assessing the role of GABAergic and strogenic receptors in the pain modulatory effect of intra-paragigantocellularis lateralis 17 β -estradiol injection in the ovariectomized female rat. **Sanam Ansari**, University of Tabriz, (2015-2017).
29. Assessing the role of glutamatergic receptors in the pain modulatory effect of intra-paragigantocellularis lateralis 17- β -estradiol injection in the ovariectomized female rat. **Hanieh Feyzi**, University of Tabriz, (2015-2017).
30. Assessing the pain modulatory effect of intra-paragigantocellularis lateralis17 β -estradiol injection during proestrus and estrous phases in the female rat. **Zahra Heidarzadeh**, University of Tabriz, (2015-2017).

31. Assessing the mechanism of pain modulatory effect of intra-paragigantocellularis lateralis 17- β -estradiol injection in male rat. **Maryam Azaddar**, University of Tabriz (2013-2015).
32. Assessing the pain modulatory effect of intra-paragigantocellularis lateralis 17- β -estradiol injection in male rat. **Shabnam Barani**, University of Tabriz, (2012-2014).

THESIS ADVISEMENT

Ph.D., Molecular Genetics Student:

1. Design and Development of Curcumin and Doxorubicin-Containing Elastic Niosomes against MCF-7 3D Spheroid Model. **Hasaneen Sadi Abas Alqeysi**, University of Tabriz, (In progress).

M.Sc., Animal Physiology students:

1. The interplay of resistance exercise, electromagnetic waves and apoptosis signaling in neural cells. **Hamzeh Hatam Abdolsadeh Tofeili**, University of Tabriz, (In progress).
2. Investigating the effect of microinjection of *Ferula szowitsiana* extract on spatial memory improvement and oxidative stress alleviation during Multiple Sclerosis in male rats. **Somayeh Abdi**, University of Tabriz, (2014-2016).

RESEARCH GRANTS

- Assessing the interaction of orexin A with endocannabinoids in the pain modulation and cannabinoid receptor 1 gene expression in the BLA nucleus of amygdala of adult male rats. *Iran National Science Foundation*, (Grant Number: 97007478), (2017-2023).
- Assessing the mechanism of pain modulatory effect of intra-paragigantocellularis lateralis 17- β -estradiol injection and the receptors involved in its modulatory effect in male rat. *University of Tabriz*, (Grant Number: 3580/27/ص), (2014-2016).
- Assessing the effect of intra-locus coeruleus injection of 17- β -estradiol in the pain modulation. *Iran National Science Foundation*, (Grant Number: 86092/34), (2008-2011).

- Assessing the effect of adenylyl cyclase inhibitor (SQ-22536) on the rostral ventromedial medulla nucleus facilitation-induced hyperalgesia in rats. *Islamic Azad University-Shahrud Branch*, (2008-2010).

PARTICIPATED WORKSHOPS

1. First international symposium on molecular technology, Shaheed Beheshti University, Tehran, Iran, 30th July- 1st August 2005.
2. 6th IBRO-Associate School and First Neuroscience Orientation Summer Program, Tarbiat Modares and Shaheed Beheshti Universities, Tehran, Iran, 26th August -30th September 2006.
3. Use and care of experimental animals, Tarbiat Modares University, Tehran, Iran, 16th May, 2006.
4. Workshop for writing English papers and proposals (Wissenschaftliches Schreiben), Leipzig University, Leipzig, Germany, summer semester 2009.
5. Workshop for electrophysiology, Tarbiat Modares University, Tehran, Iran, 12th May, 2011.
6. Second Workshop for Patch Clamp Technique, Tarbiat Modares University, Tehran, Iran, 05th May, 2011.

SABBATICALS

Sabbatical in the Rudolf-Boehm-Institute for Pharmacology and Toxicology, Leipzig University, Germany, October 2008-2009.

AWARDS AND HONORS

- 5th Ranked in the field of animal sciences at the Master's Degree Program in 1998.
- First ranked student in M.S., Shaheed Beheshti University, Tehran, Iran, 2001
- Sabbatical scholarship of Ministry of Science, Research and Technology of Iran for 8 months in the Rudolf-Boehm-Institute for Pharmacology and Toxicology, Leipzig University, Germany, 2008

- Sabbatical scholarship of Leipzig University for 6 months in the Rudolf-Boehm-Institute for Pharmacology and Toxicology, Leipzig University, Germany, 2009
- Best poster presentation (Innate fear under social hierarchy) at the first annual meeting of Georgian Center for Neuroscience Research (GCNR 2020), 20-22 February, Tbilisi, Georgia.