

## Curriculum Vitae - Academic

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Name: Seyed Mohammad Ahmadi Soleimani, PhD in medical physiology.

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Date of birth: September 21, 1987

Nationality: Iranian

Marital status: Married



### Education:

1. Associate degree in anesthesiology, Sabzevar University of Medical sciences, Sabzevar, Iran (2005-2007).
2. B.S in nursing, school of nursing and midwifery, Mashhad University of Medical sciences, Mashhad, Iran (2008-2010).
3. M.Sc. in medical physiology, school of medical sciences, Tarbiat Modares University, Tehran, Iran (2010-2012).
4. PhD in medical physiology, school of medical sciences, Tarbiat Modares University, Tehran, Iran (2012-2016).
5. A six months research sabbatical in Jikei University, School of Medicine, Tokyo, Japan (1 June-26 Nov. 2015)
5. Post-Doctoral course: One year research fellowship at Institute for Cognitive Science Studies (ICSS), Tehran, Iran. (2017-2018).

### Research Skills:

1. In vitro whole cell patch clamp recording.
2. Preparation of acute rat brain slices.
3. In vivo extracellular single unit recording.
4. In vivo local field potential (LFP) recording.
4. Formalin Test and Tail flick technique (for evaluation of pain).
5. Stereotaxic surgery of rat brain. (i.c.v and Intra-nucleus cannulation and microinjection).
6. Behavioral assessment of morphine withdrawal symptoms in rats.
7. Proficient scientific writing in the field of neuroscience.

**ISI Publications:** (1-15)

**Current h-index:** 9 (By Scopus database)

1. Ahmadi-Soleimani SM, Azizi H, Gompf HS, Semnanian S. Role of orexin type-1 receptors in paraventricular-hypothalamic modulation of opioid withdrawal and tolerance: A site specific focus. *Neuropharmacology*. 2017 Aug 18;126:25-37.
2. Mohammad Ahmadi Soleimani S, Azizi H, Pachenari N, Mirnajafi-Zadeh J, Semnanian S. Enhancement of  $\mu$ -opioid receptor desensitization by orexin-A in rat locus coeruleus neurons. *Neuropeptides*. 2017 Jun;63:28-36.
3. Ahmadi-Soleimani SM, Ghaemi-Jandabi M, Azizi H, Semnanian S. Orexin type 1 receptor antagonism in Lateral Paraventricular nucleus attenuates naloxone precipitated morphine withdrawal symptoms in rats. *Neurosci Lett*. 2014 Jan 13;558:62-6.
4. Mohammad Ahmadi Soleimani S, Azizi H, Mirnajafi-Zadeh J, Semnanian S. Orexin type 1 receptor antagonism in rat locus coeruleus prevents the analgesic effect of intra-LC met-enkephalin microinjection. *Pharmacol Biochem Behav*. 2015 Sep;136:102-6.
5. Mohammad Ahmadi Soleimani S, Ekhtiari H, Cadet JL. Drug-induced neurotoxicity in addiction medicine: From prevention to harm reduction. *Prog Brain Res*. 2016;223:19-41.
6. S. MohammadAhmadi Soleimani, Mohammad Hossein Mohamadi M.A.H, Mohammad Reza Raoufy, Hossein Azizi, Mohammad Nasehi, Mohammad Reza Zarrindast. Acute morphine administration alters the power of local field potentials in mesolimbic pathway of freely moving rats: Involvement of dopamine receptors. *Neuroscience Letters*, 2018, Pages 168-174
7. Kaeidi A, Azizi H, Javan M, Ahmadi Soleimani SM, Fathollahi Y, Semnanian S. Direct Facilitatory Role of Paraventricular Neurons in Opiate Withdrawal-Induced Hyperactivity of Rat Locus Coeruleus Neurons: An In Vitro Study. *PLoS One*. 2015 Jul 31;10(7):e0134873.
8. Eftekhari G, Ahmadi Soleimani SM, Mani AR. Heart rate variability, vagal activity and the pulse of inflammation. *J Intern Med*. 2013 Nov;274(5):490-1.
9. Eftekhari G, Hajiasgharzadeh K, Ahmadi-Soleimani SM, Dehpour AR, Semnanian S, Mani AR. Activation of central muscarinic receptor type 1 prevents development of endotoxin tolerance in rat liver. *Eur J Pharmacol*. 2014 Oct 5;740:436-41.

10. Ghaemi-Jandabi M, Azizi H, Ahmadi-Soleimani SM, Semnanian S. Intracoeular microinjection of orexin-A induces morphine withdrawal-like signs in rats. *Brain Res Bull.* 2017 Apr;130:107-111.
11. Synergistic effect of spexin and progesterone on pain sensitivity attenuation in ovariectomized rats. Moazen P, Taherianfard M, Ahmadi Soleimani M, Norozpor M. *Clin Exp Pharmacol Physiol.* 2017 Sep 26.
12. Salmazadeh H, Azizi H, Ahmadi Soleimani SM, Pachenari N, Semnanian S. Chronic adolescent morphine exposure alters the responses of lateral paragigantocellular neurons to acute morphine administration in adulthood. *Brain Res Bull.* 2018 Mar;137:178-186. doi: 10.1016/j.brainresbull.2017.12.007.
13. Hooshmand B, Azizi H, Ahmadi-Soleimani SM, Semnanian S. Synergistic effect of orexin-glutamate co-administration on spontaneous discharge rate of locus coeruleus neurons in morphine-dependent rats. *Neurosci Lett.* 2019 Jul 27;706:12-17.
14. Torabi M, Azizi H, Ahmadi-Soleimani SM, Rezayof A. Adolescent nicotine challenge promotes the future vulnerability to opioid addiction: Involvement of lateral paragigantocellularis neurons. *Life Sci.* 2019 Oct 1;234:116784.
15. Salmazadeh H, Ahmadi-Soleimani SM, Pachenari N, Azadi M, Halliwell RF, Rubino T, Azizi H. Adolescent drug exposure: A review of evidence for the development of persistent changes in brain function. *Brain Res Bull.* 2020 Mar;156:105-117.

**Teaching experiences:**

- “Fundamentals of neuroscience” for MSc. students of cognitive psychology and cognitive rehabilitation.
- “Electrophysiology” for PhD students of cognitive neuroscience.
- Teaching general physiology for students of nursing and paramedical sciences.

**MSc thesis title:**

“The effect of OXR1 receptor blockade on Paragigantocellularis neural activity during naloxone-precipitated morphine withdrawal syndrome”

**PhD thesis title:**

“Investigating the effect of orexin on development of Met-enkephalin induced tolerance in LC neurons : An electrophysiological and behavioral study”

**Presentations:**

1. Poster presentation in the 21<sup>th</sup> congress of physiology and pharmacology, Tabriz university of medical sciences, Tabriz, Iran.
2. Oral lecture in 7<sup>th</sup> international congress of addiction science entitled "Antagonism of orexin type 1 receptor in Lateral Paragigantocellularis nucleus attenuates naloxone precipitated morphine withdrawal symptoms in rats" Iran University of medical sciences, Tehran, Iran. (2013).
3. Oral lecture in 10<sup>th</sup> international congress of addiction science entitled "Enhancement of ME-induced  $\mu$ -opioid receptor desensitization by orexin-A in rat locus coeruleus neurons" Iran University of medical sciences, Tehran, Iran. (2017).

**Awards and Honors:**

1. National distinguished student award (2007).
2. Best poster award in in the 21<sup>th</sup> congress of physiology and pharmacology, Tabriz university of medical sciences, Tabriz, Iran. (August 23-27, 2013).
5. IZAMA bronze award in in 7<sup>th</sup> national congress of addiction science, Iran University of medical sciences, Tehran. (2013) Iran.
6. Distinguished PhD thesis in faculty of medical sciences, Tarbiat Modares University (2017)

**Certificates:**

1. Assisting in teaching laboratory experiments in the 2nd Tehran IBRO school of neuroscience (May 12-23, 2012).
2. Participating in single unite electrophysiology workshop at Science Beam Institute, Tehran, Iran (November 30-1 December, 2011).
3. Participating in HSE workshop (environmental health and safety) at school of medical sciences, Tarbiat Modares University, Tehran, Iran. (October 24, 2011).
3. Participating in 21th congress of physiology and pharmacology, Tabriz university of medical sciences, Tabriz, Iran. (August 23-27, 2013).
4. Participating in 20th congress of physiology and pharmacology, Hamedan university of medical sciences, Hamedan, Iran. (October 14 2011).
5. Participating in 2nd patch clamp workshop at school of medical sciences, Tarbiat Modares University, Tehran, Iran. (May 5, 2011).

6. Participating in electrophysiology workshop at school of medical sciences, Tarbiat Modares University, Tehran, Iran. (May 12, 2011).
7. Accepted abstract in Australian Neuroscience Society Annual Meeting, Melbourne, (3 - 6 February 2013), entitled "orexin type-1 receptor mediates the development of tolerance to morphine in lateral paraventricular nucleus"
8. Accepted abstract in basic and clinical neuroscience congress, Tehran, Iran (2012) entitled "Orexin type-1 receptor contributes to development of morphine tolerance in LPTG neurons".
9. Assisting in teaching laboratory experiments in the 3<sup>rd</sup> Tehran IBRO school of neuroscience.
10. Invited teacher in 1<sup>st</sup> advanced Tehran IBRO school of neuroscience (2017).

**Authorship and translations:**

1. Translation of Campbell's physiology notes for nurses (2007).
2. Contribution as author and editing consultant (acute pain chapter): Techniques in neuroscience research (2013).

**Language:**

Persian: Native speaker

English: well professional proficiency

**Areas of research interest:**

1. Neural mechanisms underlying development of dependence and tolerance to opioid effects.
2. Studying the role of orexinergic system in modulation of pain, addiction and chronobiological rhythms.



Department of Neuroscience  
Jikei University School of Medicine

Director: Professor **Fusao KATO**  
Dr Med.Sci, Dr Pharm.Sci

Tokyo November 19, 2015

To whom it may concern:

This is to certify that Mr. Seyed Mohammad Ahmadi Soleimani has spent a 6-months sabbatical stay (1 June - 26 November 2015) under my supervision in the Department of Neuroscience, Jikei University School of Medicine, Tokyo, Japan. In this period, he has learned and practiced the fundamental techniques for whole-cell patch-clamp recordings of neuronal synaptic activities from acute brain slices containing the locus coeruleus and the nucleus of the solitary tract neurons of adult rats. He has also learned the basics of optogenetics approach in cellular electrophysiology and investigated light-induced postsynaptic currents in the locus coeruleus and the nucleus of the solitary tract neurons of transgenic rats. In addition he practiced quantitative analysis of the digitized neuronal activity data using specific analyzing software.

Fusao Kato, Dr Med Sch, Dr. Pharm Sci  
Director, Laboratory Head,  
Department of Neuroscience  
Jikei University School of Medicine