CURRICULUM VITAE

Personal information:

Name: Mitra-Sadat Sadat-Shirazi

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Education:

Ph.D. (2012-2018): Neuroscience, Tehran University of Medical Sciences

M.Sc. (2005-2008): Animal Physiology, Urmia University

B.Sc. (2001-2005) : Animal Biology, University of Tehran

Thesis:

Ph.D. Thesis: Dopamine receptors expression changes in the brain of pure-opioid abusers: a post mortem study

M.Sc. Thesis: Evaluation of amnesia induced by intracerebroventricular (i.c.v) administration of lithium in an inhibitory avoidance task in mice

Work Experience:

- Lab assistant in the Iranian National Center for Addiction Studies (INCAS), 2008-2015
- Senior researcher in the Iranian National Center for Addiction Studies (INCAS), 2015-current

Skills:

- Real-Time PCR
- Western Blotting
- Human brain dissection

- Animal behavioral tests (EPM, memory assessment Tests (MWM, BM, Shuttle Box), Pain assessment tests (formalin test, hot plate, writhing test), conditioned place preference (CPP), Social Interaction, Novel Object Recognition, Open Field Test, Forced Swimming Test, Marble Burying Test).
- Stereotaxic surgery
- RNA and Protein Extraction methods
- Primary cell culture
- Single unit recording
- Thin Layer Chromatography (TLC)
- Drug extraction from hair
- Data analysis using SPSS, Sigma plot, Instat, Prism, REST, Excel

Articles:

Published:

1. **Sadat-Shirazi, M. S.,** Asgari, P., Mahboubi, S., Nouri Zadeh-Tehrani, S., Ashabi, G., Rohbani, K., . . . Zarrindast, M. R. (2020). Effect of morphine exposure on novel object memory of the offspring: The role of histone H3 and DeltaFosB. Brain Res Bull, 156, 141-149. doi: 10.1016/j.brainresbull.2020.01.011
2. **Sadat-Shirazi, M. S**., Zarrindast, M. R., & Ashabi, G. (2020). Oxidative stress enzymes are changed in opioid abusers and multidrug abusers. *J Clin Neurosci*. doi: 10.1016/j.jocn.2019.12.064
3. **Sadat-Shirazi, M. S,** MR Zarrindast, S Fallah, S Talebi, M Shahani, Khalifeh, S. (2020) Nrf1 and Nrf2 Knockdown Effect in Anxiety-related Behavior and Mitochondrial Function, Archives of Advances in Biosciences, 10 (4).
4. **Sadat-Shirazi, M. S.,** Ahmadian-Moghadam, H., Khalifeh, S., Nouri Zadeh-Tehrani, S., Farahmandfar, M., & Zarrindast, M. R. (2019). The role of calcium-calmodulin-

dependent protein kinase II in modulation of spatial memory in morphine sensitized rats. Behav Brain Res, 359, 298-303. doi: 10.1016/j.bbr.2018.11.010

5. **Sadat-Shirazi, M. S.,** Ashabi, G., Hessari, M. B., Khalifeh, S., Neirizi, N. M., Matloub, M., . . . Zarrindast, M. R. (2019). NMDA receptors of blood lymphocytes anticipate cognitive performance variations in healthy volunteers. Physiol Behav, 201, 53-58. doi: 10.1016/j.physbeh.2018.12.015
6. **Sadat-Shirazi, M. S.,** Babhadi-Ashar, N., Khalifeh, S., Mahboubi, S., Ahmadian-Moghaddam, H., & Zarrindast, M. R. (2019). Tramadol induces changes in Delta-FosB, micro-opioid receptor, and p-CREB level in the nucleus accumbens and prefrontal cortex of male Wistar rat. Am J Drug Alcohol Abuse, 45(1), 84-89. doi: 10.1080/00952990.2018.1529182
7. Ashabi, G., Monfared Neirizi, N., Behrouzi, M., Safarzadeh, M., Rajabpoor Dehdashti, A., **Sadat-Shirazi, M. S**., & Zarrindast, M. R. (2019). Activation of D1-like dopamine receptors is involved in the impairment of spatial memory in the offspring of morphine-abstinent rats. Neurosci Res. doi: 10.1016/j.neures.2019.10.003
8. **Sadat-Shirazi, M. S.,** Monfared Neirizi, N., Matloob, M., Safarzadeh, M., Behrouzi, M., Rajabpoor Dehdashti, A., . . . Zarrindast, M. R. (2019). Possible involvement of nucleus accumbens D1-like dopamine receptors in the morphine-induced condition place preference in the offspring of morphine abstinent rats. Life Sci, 233, 116712. doi: 10.1016/j.lfs.2019.116712
9. Mahboubi, S., Nasehi, M., Imani, A., **Sadat-Shirazi, M. S.,** Zarrindast, M. R., Vousooghi, N., & Noroozian, M. (2019). Benefit effect of REM-sleep deprivation on

memory impairment induced by intensive exercise in male wistar rats: with respect to hippocampal BDNF and TrkB. Nat Sci Sleep, 11, 179-188. doi: 10.2147/NSS.S207339

10. Rohbani, K., Sabzevari, S., **Sadat-Shirazi, M. S.,** Nouri Zadeh-Tehrani, S., Ashabi, G., Khalifeh, S., . . . Zarrindast, M. R. (2019). Parental morphine exposure affects repetitive grooming actions and marble burying behavior in the offspring: Potential relevance for obsessive-compulsive like behavior. Eur J Pharmacol, 172757. doi: 10.1016/j.ejphar.2019.172757
11. Shahkarami, K., Vousooghi, N., Golab, F., Mohsenzadeh, A., Baharvand, P**., Sadat-Shirazi,** M. S., . . . Zarrindast, M. R. (2019). Evaluation of dynorphin and kappa-opioid receptor level in the human blood lymphocytes and plasma: Possible role as a biomarker in severe opioid use disorder. Drug Alcohol Depend, 205, 107638. doi: 10.1016/j.drugalcdep.2019.107638
12. **Sadat-Shirazi, M. S.,** Karimi, F., Kaka, G., Ashabi, G., Ahmadi, I., Akbarabadi, A., . . . Zarrindast, M. R. (2019). Parental morphine exposure enhances morphine (but not methamphetamine) preference and increases monoamine oxidase-B level in the nucleus accumbens. Behav Pharmacol, 30(5), 435-445. doi: 10.1097/FBP.0000000000000465
13. Daneshparvar, H., **Sadat-Shirazi, M. S.,** Fekri, M., Khalifeh, S., Ziaie, A., Esfahanizadeh, N., . . . Zarrindast, M. R. (2019). NMDA receptor subunits change in the prefrontal cortex of pure-opioid and multi-drug abusers: a post-mortem study. Eur Arch Psychiatry Clin Neurosci, 269(3), 309-315. doi: 10.1007/s00406-018-0900-8
14. Niknamfar, S., Nouri Zadeh-Tehrani, S., **Sadat-Shirazi, M. S**., Akbarabadi, A., Rahimi-Movaghar, A., & Zarrindast, M. R (2019). mu-Opioid receptor in the CA1 involves in

tramadol and morphine cross state-dependent memory. Neurosci Lett, 705, 177-182. doi: 10.1016/j.neulet.2019.04.054

15. Sabzevari, S., Rohbani, K., **Sadat-Shirazi, M. S.**, Babhadi-Ashar, N., Shakeri, A., Ashabi, G., . . . Zarrindast, M. R. (2019). Morphine exposure before conception affects anxiety-like behavior and CRF level (in the CSF and plasma) in the adult male offspring. Brain Res Bull, 144, 122-131. doi: 10.1016/j.brainresbull.2018.11.022
16. Ahmadian-Moghadam, H., **Sadat-Shirazi, M.-S.**, Seifi, F., Niknamfar, S., Akbarabadi, A., Toolee, H., & Zarrindast, M.-R. (2019). Transgenerational influence of parental morphine exposure on pain perception, anxiety-like behavior and passive avoidance memory among male and female offspring of Wistar rats. EXCLI Journal, 18, 1019-1036
17. Ahmadian-Moghadam, H., Akbarabadi, A., Toolee, H., **Sadat-Shirazi, M. S.,** Zarrindast, M. R. (2019). Correlation among the Behavioral Features in the Offspring of Morphine-Abstinent Rats, Addict Health, 11(4), 262-75. doi: 10.22122/ahj.v11i4.253
18. Ahmadian-Moghadam, H., **Sadat-Shirazi, M. S.,** & Zarrindast, M. R. (2018). Cocaine- and amphetamine-regulated transcript (CART): A multifaceted neuropeptide. Peptides, 110, 56-77. doi: 10.1016/j.peptides.2018.10.008
19. Akbarabadi, A., Niknamfar, S., Vousooghi, N., **Sadat-Shirazi, M. S.,** Toolee, H., & Zarrindast, M. R. (2018). Effect of rat parental morphine exposure on passive avoidance memory and morphine conditioned place preference in male offspring. Physiol Behav, 184, 143-149. doi: 10.1016/j.physbeh.2017.11.024
20. Ashabi, G., **Sadat-Shirazi, M. S.**, Akbarabadi, A., Vousooghi, N., Kheiri, Z., Toolee, H., . . . Zarrindast, M. R (2018). Is the Nociception Mechanism Altered in Offspring of Morphine-Abstinent Rats? J Pain, 19(5), 529-541. doi: 10.1016/j.jpain.2017.12.268

21. Ashabi, G., **Sadat-Shirazi, M. S**., Khalifeh, S., Elhampour, L., & Zarrindast, M. R (2017). NMDA receptor adjusted co-administration of ecstasy and cannabinoid receptor-1 agonist in the amygdala via stimulation of BDNF/Trk-B/CREB pathway in adult male rats. Brain Res Bull, 130, 221-230. doi: 10.1016/j.brainresbull.2017.01.020
22. Roohi-Azizi, M., Torkaman-Boutorabi, A., Akhondzadeh, S., Nejatisafa, A. A., **Sadat-Shirazi, M.** S., & Zarrindast, M. R. (2018). Influence of citicoline on citalopram-induced antidepressant activity in depressive-like symptoms in male mice. Physiol Behav, 195, 151-157. doi: 10.1016/j.physbeh.2018.08.002
23. **Sadat-Shirazi, M. S.,** Vousooghi, N., Alizadeh, B., Makki, S. M., Zarei, S. Z., Nazari, S., & Zarrindast, M. R. (2018). Expression of NMDA receptor subunits in human blood lymphocytes: A peripheral biomarker in online computer game addiction. J Behav Addict, 7(2), 260-268. doi: 10.1556/2006.7.2018.35
24. **Sadat-Shirazi, M. S.,** Zarrindast, M. R., Daneshparvar, H., Ziaie, A., Fekri, M., Abbasnezhad, E., . . . Vousooghi, N. (2018). Alteration of dopamine receptors subtypes in the brain of opioid abusers: A postmortem study in Iran. Neurosci Lett, 687, 169-176. doi: 10.1016/j.neulet.2018.09.043
25. Vousooghi, N. , **Sadat-Shirazi, M. S.,** Safavi, P., Zeraati, R., Akbarabadi, A., Makki, S. M., . . . Zarrindast, M. R. (2018). Adult rat morphine exposure changes morphine preference, anxiety, and the brain expression of dopamine receptors in male offspring. Int J Dev Neurosci, 69, 49-59. doi: 10.1016/j.ijdevneu.2018.06.008
26. **Sadat-Shirazi, M. S,** Bab-Hadi Ashar, N., Ahmadian-Moghaddam, H,. Khalifeh, S,. Zarrindast, M-R.(2018) Acute and Chronic Tramadol Treatment Impresses Tyrosine

Kinase B (Trk-B) Receptor in the Amygdala and Nucleus Accumbens.Journal of Iranian Medical Council. 1(1);11-16

27. Torkaman-Boutorabi, A, FS, Akbarabadi,A, Toolee, H,. **Sadat-Shirazi M–S**, Vousooghi, N,. Zarrindast, M-R.(2018). Morphine Exposure Causes to Enhance Depression-like Behaviour in Confront with Chronic Stress in Adult Male Offspring Rat. Basic and Clinical Neuroscience.
28. Vousooghi, N., Zarei, S. Z., **Sadat-Shirazi, M. S.,** Eghbali, F., & Zarrindast, M. R. (2015). mRNA expression of dopamine receptors in peripheral blood lymphocytes of computer game addicts. J Neural Transm (Vienna), 122(10), 1391-1398. doi: 10.1007/s00702-015-1408-2
29. **Sadat-Shirazi, M. S**, Bob-hadiashar, N,. Bahrami Hessari, M,. Vousooghi ,N,. Zarrindast, M-R., (2018). Executive functions are related to serum testosterone and basal metabolism rate fluctuation but not lymphocyte dopamine receptor expression in the young healthy participants. Physiology and Pharmacology.
30. Vousooghi, F. G**., Sadat-Shirazi, MS,** P Safavi, MR Zarrindast. (2016). Effect of Morphine Treatment on mRNA Expression of GluN3A Subunit of the NMDA Receptor in Rat Brain. J Reward Defic Syndr Addict Sci, 2(2), 60-64.
31. Vousooghi, N., **Sadat-Shirazi, M. S**., Goodarzi, A., Abharian, P. H., & M.R, Zarrindast, (2015). X Chromosome Inactivation in Opioid Addicted Women. Basic Clin Neurosci, 6(3), 179-184.
32. Zarrindast, M. R., Mahboobi, S., **Sadat-Shirazi, M. S.**, & Ahmadi, S. (2011). Anxiolytic-like effect induced by the cannabinoid CB1 receptor agonist, arachydonilcyclopropylamide (ACPA), in the rat amygdala is mediated through the D1

and D2 dopaminergic systems. J Psychopharmacol, 25(1), 131-140. doi: 10.1177/0269881110376688

Submitted to journals:

1. Mahboubi, S., **Sadat-Shirazi, M. S,** Zarrindast, M,R, Nasehi, M,. Noroozian, M* (2019). The Effect of REM Sleep Deprivation on mTOR Signaling-Induced by Severe Physical Exercise. Archives of Neuroscience (In Press)

2. Nourizadeh-Tehrani, S**,. Sadat-Shirazi, M-S.,** Akbarabadi, A, Soltani, H,. Zarrindast, M.R.,* : Effects of exercise on depressive and OCD-like behaviors in the male offspring of morphine-abstinent rats: role of prefrontal 5-HT3 receptor, Submitted to: Addiction Biology (the first revision was received from journal).

3. Soltani, H,. Ashabi, G**., Sadat-Shirazi, M-S.,** Pakpour, B. Zarrindast, M.R.,*: Toxic effect of Calcium/Calmodulin Kinase II on anxiety behavior, neuronal firing and plasticity in the male offspring of morphine-abstinent rats, Submitted to: Behavioral Brain Research, (under review)

Seminars and congresses:

1. Morphine experience in adult rats alters morphine preference and brain expression of dopamine receptors in F1 offspring, 4th Global Experts Meeting on Neuropharmacology US.
2. Evaluation of amnesia induced by intracerebroventricular (i.c.v) administration of lithium in an inhibitory avoidance task in mice, 3rd International Congress on Brain and Behavior, Thessaloniki, Greece. 28 November – 2 December 2007

3. Interaction of Lithium Chloride and SCH on State-Dependent Memory in the Step-Down Passive Avoidance Test, the 36th Congress of the International Union of Physiological Sciences, Kyoto, Japan 2009

4. Effect of paternal and/or maternal morphine dependence on depression state of male and female offspring, 22th Iranian congress of physiology & pharmacology, Kashan-Iran,2015.

5. Evaluation of paternal and maternal Morphine exposure on anxiety and dopamine receptors gene expression in nNucleus accumbens, striatum and hippocampus, 22th Iranian congress of physiology & pharmacology, Kashan- Iran,2015.

6. Evaluation of paternal and/or maternal morphine exposure on pain perception in Wistar rat, 22th Iranian congress of physiology & pharmacology, Kashan- Iran,2015.

7. Evaluation of passive avoidance memory in male and female offspring of Wistar rat with history of opioid addiction, 22th Iranian congress of physiology & pharmacology, Kashan- Iran,2015.

8. Nr1, nr2a, and nr2b NMDA receptor are in varied in orbitofrontal cortex of pure opioid abusers, 11th Addiction Science Congress, Tehran, Iran, 2017

9. NMDA receptor subunits increased in lateral prefrontal cortex of multidrug abusers, 11th Addiction Science Congress, Tehran, Iran, 2017

10. Effect of hippocampal microinjection of Calcium-Calmodulin-Dependent Protein Kinase II inhibitor on Spatial Memory Consolidation of Morphine Sensitized Rats , 6th Basic and Clinical Neuroscience Congress, Tehran, Iran, 2017

11. D1 receptor antagonist reduced memory deficits in offspring of morphine-abstinent parents in rats, 6th Basic and Clinical Neuroscience Congress, Tehran, Iran, 2017

12. D1 receptor antagonist administration in Nucleus Accumbens modulate morphine reinforcing effect in offspring of morphine abstinent rats, 6th Basic and Clinical Neuroscience Congress, Tehran, Iran, 2017

13. Evaluation of paternal and/or maternal morphine exposure on Obsessive-Compulsive behavior in male Wistar rat, 6th Basic and Clinical Neuroscience Congress, Tehran, Iran

14. Adult rat morphine exposure changes anxiety-like behavior in male offspring, 6th Basic and Clinical Neuroscience Congress, Tehran, Iran, 2017

15. The Effect of CART Neuropeptide on Regulation of Food Intake and Body Weight, 6th Basic and Clinical Neuroscience Congress, Tehran, Iran, 2017

References:

1. Prof. M.R. Zarrindast, (PharmD, PhD), professor at department of pharmacology, Tehran University of Medical Sciences, zarinmr@ams.ac.ir
2. M. Nasehi (PhD), associated professor at department of physiology, Azad medical University, nasehi@iricss.org
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