

## CURRICULUM VITAE

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### Mohammad Javan

Birth Year: 1971

PhD in Physiology

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### Academic positions:

<sup>1</sup>Professor, Dept. Physiology

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Tarbiat Modares University.

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<sup>2</sup>Professor, Department of

Brain and Cognition, Royan

Institute for Stem Cell Research

and Technology, Tehran, Iran.



### Academic Background

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2003-2004 Post-doctoral Fellow in Molecular Pharmacology, Dept. Pharmacology and Toxicology, Kyorin University School of Medicine, Shinkawa, Mitaka, Tokyo, Japan.

1998-2003 Ph.D. Student in Medical Physiology, Dept. Physiology and Neuroscience Research Center, Shaheed Beheshti Univ. Med. Sci., Tehran, Iran

1994-1997 M.Sc. Student in Physiology, Dept. Biology, Shaheed Beheshti Univ. Tehran, Iran.

1990-1994 B.Sc. Student in Biology, Dept. Biology, Mashhad Univ., Mashhad, Iran.

### Honors and Awards

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1. Distinguished professor in Education in 2020, Tarbiat Modares University, Tehran, Iran
2. Distinguished Professor in Education in year 2014, Faculty of Medical Sciences (Tarbiat Modares University), Tehran, Iran.
3. Editor in Chief, Physiology and Pharmacology, 2014-2017 (Managing editor 2005-2014).
4. Best presentation Award, 5th congress of Federation of Asian-Oceanian Neuroscience Societies (FAONS), Lucknow, India, 2010, 25-28 Nov.
5. Best Presentation Award, Second Annual meeting of the Iranian Pain Society, 2-3 May 2002 . Tehran, Iran.
6. First ranked student, 2nd festival of research, Shaheed Beheshti Univ. Med. Sci. 2001, Tehran, Iran.

### Extracurricular Courses

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1 .Workshop of Functional Genomic, IBRO School of Brain Functions, Hong Kong Univ. Hong Kong, Dec. 2000.

2 .Workshop of Molecular Biology, Shaheed Beheshti Univ. Med. Sci., Tehran, May 2000.

3 .Workshop of Electrophysiology, Neuroscience Research Center, Shaheed Beheshti Univ. Med. Sci., Tehran, Sep. 2002.

4 .Workshop of Molecular Biology and Recombinant Proteins, National institute for Genetic and Biotechnology, Tehran, Jun. 2003.

5 .Workshop of Cloning and Hybridization, Research Center for Cellular and Molecular Biology, Shaheed Beheshti Univ. Med. Sci., Tehran, Feb. 2003

### **Membership of Scientific Societies**

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1. Iranian Society of Physiology and Pharmacology (President since Jan. 2022, Secretary 2017-2022, Council Member since 2011)
2. International Brain Research Organization (IBRO)
3. International Society for Stem Cell Research (ISSCR)
4. Federation of Iranian Biological Societies (Founder Council member and Treasurer, 2016-now)
5. Iranian Cell Death Society (founder council member (2005-2011))
6. Iranian Neuroscience Society

### **Selected Publications on Neural Repair and protection**

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1. Saghar Rabieipour, Meysam Zare, Miren Ettcheto, Antoni Camins, Mohammad Javan. Metformin restores cognitive dysfunction and histopathological deficits in an animal model of sporadic Alzheimer's disease. *Heliyon* 2023, <https://doi.org/10.1016/j.heliyon.2023.e17873>.
2. Mokhtarzadeh Khanghahi, A., Rayatpour, A., Baharvand, H. et al. Neuroglial components of brain lesions may provide new therapeutic strategies for multiple sclerosis. *Neurol Sci* (2023). <https://doi.org/10.1007/s10072-023-06915-5>
3. Jangjoo Ghalat N, Shahpasand K, Javan M., Cis-p-tau plays crucial role in lysolecithin-induced demyelination and subsequent axonopathy in mouse optic chiasm. *Exp Neurol*. 2023 Jan;359:114262. doi: 10.1016/j.expneurol.2022.114262.
4. Farhangi S, Karimi E, Khajeh K, Hosseinkhani S, Javan M., Peptide mediated targeted delivery of gold nanoparticles into the demyelination site ameliorates myelin impairment and gliosis. *Nanomedicine*. 2023 Jan;47:102609. doi: 10.1016/j.nano.2022.102609
5. Rayatpour A, Foolad F, Heibatollahi M, Khajeh K, Javan M., Ferroptosis inhibition by deferiprone, attenuates myelin damage and promotes neuroprotection in demyelinated optic nerve. *Sci Rep*. 2022 Nov 16;12(1):19630. doi: 10.1038/s41598-022-24152-2 .
6. Honarvar F, Hojati V, Zare L, Bakhtiari N, Javan M., Ursolic Acid Enhances Myelin Repair in Adult Mice Brains and Stimulates Exhausted Oligodendrocyte Progenitors to Remyelinate. *J Mol Neurosci*. 2022 Oct;72(10):2081-2093. doi: 10.1007/s12031-022-02059-x.
7. Alipour M, Hajipour-Verdom B, Javan M, Abdolmaleki P., Static and Electromagnetic Fields Differently Affect Proliferation and Cell Death Through Acid Enhancement of ROS Generation in Mesenchymal Stem Cells. *Radiation Res*. 2022 Oct 1;198(4):384-395. doi: 10.1667/RADE-21-00037.1.
8. Nemati SH, Seiedrazizadeh Z, Simorgh S, Hesaraki M, Kiani S, Javan M, Pakdel F, Satarian L., Mouse Degenerating Optic Axons Survived by Human Embryonic Stem Cell-Derived Neural Progenitor Cells. *Cell J*. 2022 Mar;24(3):120-126. doi: 10.22074/cellj.2022.7873.
9. Khani-Habibabadi F, Zare L, Sahraian MA, Javan M, Behmanesh M., Hotair and Malat1 Long Noncoding RNAs Regulate Bdnf Expression and Oligodendrocyte Precursor Cell

- Differentiation. *Mol Neurobiol.* 2022 Jul;59(7):4209-4222. doi: 10.1007/s12035-022-02844-0.
10. Alipour M, Hajipour-Verdom B, Abdolmaleki P, Javan M .Molecular properties of Ca<sup>2+</sup> transport through TRPV2 channel: a molecular dynamics simulations study. *J Biomol Struct Dyn.* 2022 Apr 6:1-8. doi: 10.1080/07391102.2022.2058615.
  11. Pournajaf, S., Dargahi, L., Javan, M., Pourgholami, M.H. Molecular Pharmacology and Novel Potential Therapeutic Applications of Fingolimod (2022) *Frontiers in Pharmacology*, 13, art. no. 807639.
  12. Rayatpour, A., Farhangi, S., Verdaguer, E., Olloquequi, J., Ureña, J., Auladell, C., Javan, M. The cross talk between underlying mechanisms of multiple sclerosis and epilepsy may provide new insights for more efficient therapies (2021) *Pharmaceuticals*, 14 (10), art. no. 1031.
  13. RabieiPoor, S., Ettcheto, M., Cano, A., Sanchez-Lopez, E., Manzine, P.R., Olloquequi, J., Camins, A., Javan, M. Metformin a potential pharmacological strategy in late onset Alzheimer's disease treatment (2021) *Pharmaceuticals*, 14 (9), art. no. 890.
  14. Rayatpour, A., Javan, M. Targeting the brain lesions using peptides: A review focused on the possibility of targeted drug delivery to multiple sclerosis lesions (2021) *Pharmacological Research*, 167, art. no. 105441.
  15. Esmaeilnejad, S., Semnianian, S., Javan, M. Metformin protects myelin from degeneration in a mouse model of lysophosphatidylcholine-induced demyelination in the optic chiasm (2021) *Cell Journal*, 23 (1), pp. 119-128.
  16. Dehghan, S., Aref, E., Raoufy, M.R., Javan, M. An optimized animal model of lysolecithin induced demyelination in optic nerve; more feasible, more reproducible, promising for studying the progressive forms of multiple sclerosis (2021) *Journal of Neuroscience Methods*, 352, art. no. 109088, .
  17. P Pooyan, R Karamzadeh, M Mirzaei, A Meyfour, A Amir Khan, Y Wu, V Gupta, H Baharvand, M Javan, G Hosseini, The Dynamic Proteome of Oligodendrocyte Lineage Differentiation Features Planar Cell Polarity and Macroautophagy Pathways, *GigaScience* 9 (11), gaa116, 2020.
  18. Roshanbakhsh H, Elahdadi Salmani M, Dehghan S, Nazari A, Javan M, Pourabdolhossein F. Piperine ameliorated memory impairment and myelin damage in lysolecithin induced hippocampal demyelination. *Life Sci.* 2020 Jul 15;253:117671. doi: 10.1016/j.lfs.2020.117671.
  19. M Motavaf, M Sadeghizadeh, S Babashah, L Zare, M Javan, Dendrosomal nanocurcumin promotes remyelination through induction of oligodendrogenesis in experimental demyelination animal model, *Journal of Tissue Engineering and Regenerative Medicine* 14 (10), 1449-1464, 2020.
  20. Rezaei S, Dabirmanesh B, Zare L, Golestani A, Javan M, Khajeh K. Enhancing myelin repair in experimental model of multiple sclerosis using immobilized chondroitinase ABC I on porous silicon nanoparticles. *Int J Biol Macromol.* 2019 Dec 31;146:162-170. doi: 10.1016/j.ijbiomac.2019.12.258.
  21. Honarvar F, Hojati V, Bakhtiari N, Vaezi G, Javan M . Myelin Protection by Ursolic Acid in Cuprizone-Induced Demyelination in Mice. *Iran J Pharm Res.* 2019 Fall;18(4):1978-1988. doi: 10.22037/ijpr.2019.112181.13582.

22. Yazdi A, Ghasemi-Kasman M, Javan M. Possible regenerative effects of fingolimod (FTY720) in multiple sclerosis disease: An overview on remyelination process. *J Neurosci Res.* 2020 Mar;98(3):524-536. doi: 10.1002/jnr.24509.
23. Niknam P, Raoufy MR, Fathollahi Y, Javan M. Modulating proteoglycan receptor PTP $\sigma$  using intracellular sigma peptide improves remyelination and functional recovery in mice with demyelinated optic chiasm. *Mol Cell Neurosci.* 2019 Sep; 99: 103391. doi:10.1016/j.mcn.2019.103391.
24. Foolad F, Khodagholi F, Javan M. Sirtuins in Multiple Sclerosis: The crossroad of neurodegeneration, autoimmunity and metabolism. *Mult Scler Relat Disord.* 2019 Sep;34:47-58. doi: 10.1016/j.msard.2019.06.004.
25. Rostami F, Javan M, Moghimi A, Haddad-Mashadrizeh A, Fereidoni M. Prenatal stress promotes icv-STZ-induced sporadic Alzheimer's pathology through central insulin signaling change. *Life Sci.* 2020 Jan 15; 241: 117154. doi: 10.1016/j.lfs.2019.117154.
26. Khani-Habibabadi F, Askari S, Zahiri J, Javan M, Behmanesh M. Novel BDNF-regulatory microRNAs in neurodegenerative disorders pathogenesis: An in-silico study. *Comput Biol Chem.* 2019 Dec;83:107153. doi: 10.1016/j.compbiolchem.2019.107153.
27. Zare L, Baharvand H, Javan M. Trichostatin A Promotes the Conversion of Astrocytes to Oligodendrocyte Progenitors in a Defined Culture Medium. *Iran J Pharm Res.* 2019 Winter;18(1):286-295.
28. Farhangi S, Dehghan S, Totonchi M, Javan M. In vivo conversion of astrocytes to oligodendrocyte lineage cells in adult mice demyelinated brains by Sox2. *Mult Scler Relat Disord.* 2019 Feb;28:263-272. doi: 10.1016/j.msard.2018.12.041.
29. Yazdi A, Mokhtarzadeh Khanghahi A, Baharvand H, Javan M. Fingolimod Enhances Oligodendrocyte Differentiation of Transplanted Human Induced Pluripotent Stem CellDerived Neural Progenitors. *Iran J Pharm Res.* 2018 Fall;17(4):1444-1457.
30. Seyedsadr MS, Weinmann O, Amorim A, Ineichen BV, Egger M, Mirnajafi-Zadeh J, Becher B, Javan M, Schwab ME. Inactivation of sphingosine-1-phosphate receptor 2 (S1PR2) decreases demyelination and enhances remyelination in animal models of multiple sclerosis. *Neurobiol Dis.* 2019 Apr;124:189-201. doi: 10.1016/j.nbd.2018.11.018.
31. Zare L, Baharvand H, Javan M. In vivo conversion of astrocytes to oligodendrocyte lineage cells using chemicals: targeting gliosis for myelin repair. *Regen Med.* 2018 Oct;13(7):803-819. doi: 10.2217/rme-2017-0155.
32. Mokhtarzadeh Khanghahi A, Satarian L, Deng W, Baharvand H, Javan M. In vivo conversion of astrocytes into oligodendrocyte lineage cells with transcription factor Sox10; Promise for myelin repair in multiple sclerosis. *PLoS One.* 2018 Sep 13; e0203785. doi: 10.1371/journal.pone.0203785.
33. Fathi A, Mirzaei M, Dolatyar B, Sharifitabar M, Bayat M, Shahbazi E, Lee J, Javan M, Zhang SC, Gupta V, Lee B, Haynes PA, Baharvand H, Salekdeh GH. Discovery of Novel Cell Surface Markers for Purification of Embryonic Dopamine Progenitors for Transplantation in Parkinson's Disease Animal Models. *Mol Cell Proteomics.* 2018 Sep;17(9):1670-1684. doi: 10.1074/mcp.RA118.000809.
34. Emami Aleagha MS, Harirchian MH, Lavasani S, Javan M, Allameh A. Differential Expression of Klotho in the Brain and Spinal Cord is Associated with Total Antioxidant Capacity in Mice

- with Experimental Autoimmune Encephalomyelitis. *J Mol Neurosci*. 2018 Apr;64(4):543-550. doi: 10.1007/s12031-018-1058-6.
35. Ghasemi-Kasman M, Shojaei A, Gol M, Moghadamnia AA, Baharvand H, Javan M, miR-302/367-Induced Neurons Reduce Behavioral Impairment in an Experimental Model of Alzheimer's Disease. *Mol Cell Neurosci*, 2018 Jan;86:50-57. doi: 10.1016/j.mcn.2017.11.012.
  36. Ghasemi-Kasman M, Hossein Baharvand, Mohammad Javan, Enhanced Neurogenesis in Degenerated Hippocampi Following Pretreatment with miR-302/367 Expressing Lentiviral Vector in mice. *Biomedicine and Pharmacotherapy*, 2017 Dec;96:1222-1229. doi:10.1016/j.biopha.2017.11.094.
  37. Rostami F, Javan M, Moghimi A, Haddad-Mashadrizheh A, Fereidoni M., Streptozotocin-induced hippocampal astrogliosis and insulin signaling malfunction as experimental scales for subclinical sporadic Alzheimer model. *Life Sci*. 2017 Nov 1;188:172-185.
  38. Kashfi S, Peymani M, Ghaedi K, Baharvand H, Nasr-Esfahani MH, Javan M., Purinergic Receptor Expression and Potential Association with Human Embryonic Stem Cell Derived Oligodendrocyte Progenitor Cell Development. *Cell J*. 2017 Oct;19(3):386-402.6
  39. Pachenari N, Kiani S, Javan M., Inhibition of glycogen synthase kinase 3 increased subventricular zone stem cells proliferation. *Biomed Pharmacother*. 2017 Sep;93:1074-1082.
  40. Motavaf M, Sadeghizadeh M, Javan M. Attempts to Overcome Remyelination Failure: Toward Opening New Therapeutic Avenues for Multiple Sclerosis. *Cell Mol Neurobiol*. 2017, 37 ,1335-1348. doi: 10.1007/s10571-017-0472-6.
  41. Kashfi S, Ghaedi K, Baharvand H, Nasr-Esfahani MH, Javan M., A1 Adenosine Receptor Activation Modulates Central Nervous System Development and Repair. *Mol Neurobiol*. 2017 Dec;54(10):8128-8139.
  42. Maryam Ghasemi-Kasman, Leila Zare, Hossein Baharvand, Mohammad Javan, In Vivo Conversion of Astrocytes to Myelinating Cells by miR-302/367 and Valproate to Enhance Myelin Repair. *J Tissue Eng Regen Med* 2018 Jan;12(1):e462-e472. doi: 10.1002/term.2276.
  43. Gol M, Ghorbanian D, Hassanzadeh S, Javan M, Mirnajafi-Zadeh J, Ghasemi-Kasman M. Fingolimod enhances myelin repair of hippocampus in pentylenetetrazol-induced kindling model. *Eur J Pharm Sci*. 2016, 12; 96:72-83.
  44. Dehghan S, Hesaraki M, Soleimani M, Mirnajafi-Zadeh J, Fathollahi Y, Javan M. Oct4 transcription factor in conjunction with valproic acid accelerates myelin repair in demyelinated optic chiasm in mice. *Neuroscience*. 2016 Mar 24;318:178-89.
  45. Mohajeri M, Sadeghizadeh M, Javan M. Pertussis toxin promotes relapsing-remitting experimental autoimmune encephalomyelitis in Lewis rats. *J Neuroimmunol*. 2015 15; 289:105-10. doi: 10.1016/j.jneuroim.2015.10.012
  46. Yazdi A, Baharvand H, Javan M. Enhanced remyelination following lysolecithin-induced demyelination in mice under treatment with fingolimod (FTY720). *Neuroscience*. 2015 Dec 17;311:34-44.7
  47. Mohajeri M, Sadeghizadeh M, Najafi F, Javan M Polymerized Nano-curcumin attenuates neurological symptoms in EAE model of multiple sclerosis through down regulation of inflammatory and oxidative processes and enhancing neuroprotection and myelin repair. *Neuropharmacology*. 2015, 99:156-67.

48. Ghasemi-Kasman M, Hajikaram M, Baharvand H, Javan M. MicroRNA-Mediated In Vitro and In Vivo Direct Conversion of Astrocytes to Neuroblasts. *PLoS One*. 2015 Jun 1; e0127878.
49. Dehghan S, Asadi S, Hajikaram M, Soleimani M, Mowla SJ, Fathollahi Y, Ahmadiani A, Javan M. Exogenous Oct4 in combination with valproic acid increased neural progenitor markers: an approach for enhancing the repair potential of the brain. *Life Sci*. 2015, 122:108-15.
50. Pourabdolhossein F, Mozafari S, Morvan-Dubois G, Mirnajafi-Zadeh J, Lopez-Juarez A, et al. Nogo Receptor Inhibition Enhances Functional Recovery following Lysolecithin-Induced Demyelination in Mouse Optic Chiasm. *PLoS ONE* 9(9): e106378. doi:10.1371/journal.pone.0106378.
51. Movaghar B, Tiraihi T, Javan M, Taheri T, Kazemi H. Induced bone marrow stromal cells into Schwann cells by progesterone improved the outcome of transected sciatic nerve model. *J Neurosurg Sci* . 2017 Oct;61(5):504-513. doi: 10.23736/S0390-5616.16.02861-7.
52. Mahdih Azin, M.Sc., Javad Mirnajafi-Zadeh, Ph.D., Mohammad Javan, Fibroblast Growth Factor-2 Enhanced The Recruitment of Progenitor Cells and Myelin Repair in Experimental Demyelination of Rat Hippocampal Formations. *Cell J*. 2015; 17(3): 540-546.
53. Asadi S, Dehghan S, Hajikaram M, Mowla SJ, Ahmadiani AA, Javan M. Comparing the Effects of Small Molecules BIX-01294, Bay K8644, RG-108 and Valproic Acid, and Their Different Combinations on Induction of Pluripotency Marker-Genes by Oct4 in The Mouse Brain. *Cell J*. 2015 Winter;16(4):416-25. Epub 2015 Jan 13.8
54. Parvini M, Satarian L, Parivar K, Javan M, Tondar M, Ahmad S, Baharvand, Human pluripotent stem cell-derived retinal pigmented epithelium in retinal treatment: from bench to bedside. *Mol Neurobiol* 2014 Oct;50(2):597-612. doi: 10.1007/s12035-014-8684-y.
55. Satarian L, Javan M, Kiani S, Hajikaram M, Mirnajafi-Zadeh J, Baharvand H. Engrafted human induced pluripotent stem cell-derived anterior specified neural progenitors protect the rat crushed optic nerve. *PLoS One*. 2013 Aug 19;8(8):e71855. doi:10.1371/journal.pone.0071855. eCollection 2013.
56. Pazhoohan S, Satarian L, Asghari AA, Salimi M, Kiani S, Mani AR, Javan M. Valproic Acid attenuates disease symptoms and increases endogenous myelin repair by recruiting neural stem cells and oligodendrocyte progenitors in experimental autoimmune encephalomyelitis. *Neurodegener Dis*. 2014;13(1):45-52. doi: 10.1159/000352021.
57. Nazm Bojnordi M, Movahedin M, Tiraihi T, Javan M, Ghasemi Hamidabadi H. Oligoprogenitor cells derived from spermatogonia stem cells improve remyelination in demyelination model. *Mol Biotechnol*. 2014 May;56(5):387-93. doi: 10.1007/s12033-013-9722-0.
58. Azin M, Goudarzvand M, Mirnajafi-Zadeh J, Javan M. Field potential recording from rat hippocampus provides a functional evaluation method for assessing demyelination and myelin repair. *Neurol Res*. 2013 Oct;35(8): 837-43.
59. Asghari AA, Azarnia M, Mirnajafi-Zadeh J, Javan M. Adenosine A1 receptor agonist, N6-cyclohexyladenosine, protects myelin and induces remyelination in an experimental model of rat optic chiasm demyelination; electrophysiological and histopathological studies. *J Neurol Sci*. 2013 Feb 15;325(1-2):22-8.
60. Khezri S, Javan M, Goudarzvand M, Semnanian S, Baharvand H. Dibutyryl Cyclic AMP Inhibits the Progression of Experimental Autoimmune Encephalomyelitis and Potentiates Recruitment of Endogenous Neural Stem Cells. *J Mol Neurosci*. 2013 Oct;51(2):298-306.

61. Nazm Bojnordi M, Movahedin M, Tiraihi T, Javan M. Alteration in genes expression patterns during in vitro differentiation of mouse spermatogonial cells into neuroepithelial-like cells. *Cytotechnology*. 2013 Jan;65(1):97-104. doi: 10.1007/s10616-012-9465-y. Epub 2012 Oct 27.
62. Nazm Bojnordi M, Movahedin M, Tiraihi T, Javan M. A simple co-culture system for generation of embryonic stem like cells from testis. *Iran Red Crescent Med J*. 2012 Dec;14(12):811-5. doi: 10.5812/ircmj.4051. Epub 2012 Dec 6.
63. Haghani M, Shabani M, Javan M, Motamedi F, Janahmadi M. CB1 Cannabinoid Receptor Activation Rescues Amyloid  $\beta$ -Induced Alterations in Behaviour and Intrinsic Electrophysiological Properties of Rat Hippocampal CA1 Pyramidal Neurons. *Cell Physiol Biochem*. 2012;29(3-4):391-406. doi: 10.1159/000338494. Epub 2012 Apr 3.
64. Sherafat MA, Heibatollahi M, Mongabadi S, Moradi F, Javan M, Ahmadiani A. Electromagnetic field stimulation potentiates endogenous myelin repair by recruiting subventricular neural stem cells in an experimental model of white matter demyelination. *J Mol Neurosci*. 2012 Sep;48(1):144-53. doi: 10.1007/s12031-012-9791-8 .Epub 2012 May 17.
65. Dehghan S, Javan M, Pourabdolhossein F, Mirnajafi-Zadeh J, Baharvand H. Basic Fibroblast Growth Factor Potentiates Myelin Repair Following Induction of Experimental Demyelination in Adult Mouse Optic Chiasm and Nerves. *J Mol Neurosci*. 2012 Sep;48(1):77-85. doi: 10.1007/s12031-012-9777-6. Epub 2012 May 3.
66. Pouya A, Sattarian L, Kiani S, Javan M, Baharvand H. Human Induced Pluripotent Stem Cells Differentiation into Oligodendrocyte Progenitors and Transplantation in a Rat Model of Optic Chiasm Demyelination. *PLoS One*. 2011;6(11):e27925. doi:10.1371/journal.pone.0027925. Epub 2011 Nov 18.10
67. Sherafat MA, Javan M, Mozafari S, Mirnajafi-Zadeh J, Motamedi F. Castration attenuates myelin repair following lysolecithin induced demyelination in rat optic chiasm: an evaluation using visual evoked potential, marker genes expression and myelin staining. *Neurochem Res*. 2011 Oct;36(10):1887-95. doi: 10.1007/s11064-011-0510-6 .Epub 2011 May 28.
68. Mahdavi S, Gharibzadeh S, Ranjbar B, Javan M. Voltage-gated sodium channel gating modifiers: valuable targets for multiple sclerosis treatment. *J Neuropsychiatry Clin Neurosci*. 2011 Winter;23(1):E17. doi: 10.1176/appi.neuropsych.23.1.E17.
69. Mozafari S, Javan M, Sherafat MA, Mirnajafi-Zadeh J, Heibatollahi M, Pour-Beiranvand S, Tiraihi T, Ahmadiani A. Analysis of Structural and Molecular Events Associated with Adult Rat Optic Chiasm and Nerves Demyelination and Remyelination; Possible Role for 3rd Ventricle Proliferating Cells. *Neuromolecular Med*. 2011 Jun;13(2):138-50. doi:10.1007/s12017-011-8143-0. Epub 2011 Feb 3.
70. Mozafari S, Sherafat MA, Javan M, Mirnajafi-Zadeh J, Tiraihi T. Visual evoked potentials and MBP gene expression imply endogenous myelin repair in adult rat optic nerve and chiasm following local lysolecithin induced demyelination. *Brain Res* 2010, 1351: 50-56. *Brain Res*. 2010 Sep 10;1351:50-6. doi: 10.1016/j.brainres.2010.07.026.
71. Goudarzvand M, Javan M, Mirnajafi-Zadeh J, Mozafari S, Tiraihi T. Vitamins E and D3 attenuate Demyelination and potentiate Remyelination Processes of Hippocampal Formation of Rats following Local Injection of Ethidium Bromide. *Cell Mol Neurobiol*. 2010 Mar;30(2):289-99. doi: 10.1007/s10571-009-9451-x. Epub 2009 Sep 19.11

### **Other publications:**

72. Dehdar K, Salimi M, Tabasi F, Dehghan S, Sumiyoshi A, Garousi M, Jamaati H, Javan M, Raoufy MR. Allergen Induces Depression-like Behavior in Association with Altered Prefrontal-hippocampal Circuit in Male Rats. *Neuroscience*. 2023 Jun 5;524:21-36. doi: 10.1016/j.neuroscience.2023.05.034.
73. Mosleh M, Javan M, Fathollahi Y., The properties of long-term potentiation at SC-CA1/ TA-CA1 hippocampal synaptic pathways depends upon their input pathway activation patterns. *IBRO Neurosci Rep*. 2023 Mar 28;14:358-365. doi: 10.1016/j.ibneur.2023.03.013.
74. Enayati P, Dehdar K, Javan M, Raoufy MR., The protective effect of inhaled corticosteroid on lung inflammation and breathing pattern complexity in a rat model of asthma. *Respir Physiol Neurobiol*. 2023 Aug;314:104072. doi: 10.1016/j.resp.2023.104072
75. Tavassoli Z, Javan M, Hosseinmardi N, Fathollahi Y. Electrical impulses evoked activity patterns in ventral tegmental area and locus coeruleus modulate endogenous and learning-dependent disparity of cell proliferation along the mouse dentate gyrus. *IBRO Neurosci Rep*. 2023 Mar 8;14:293-307. doi: 10.1016/j.ibneur.2023.03.002. eCollection 2023 Jun. PMID: 37388501.
76. Anvari S, Foolad F, Javan M, Mirnajafi-Zadeh J, Fathollahi Y., A distinct impact of repeated morphine exposure on synaptic plasticity at Schaffer collateral-CA1, temporoammonic-CA1, and perforant pathway-dentate gyrus synapses along the longitudinal axis of the hippocampus. *Hippocampus*. 2022 Dec 13. doi: 10.1002/hipo.23488.
77. Salimi, M., Tabasi, F., Abdolsamadi, M., Dehghan, S., Dehdar, K., Nazari, M., Javan, M., Mirnajafi-Zadeh, J., Raoufy, M.R. Disrupted connectivity in the olfactory bulb-entorhinal cortex-dorsal hippocampus circuit is associated with recognition memory deficit in Alzheimer's disease model (2022) *Scientific Reports*, 12 (1), art. no. 4394.
78. Ghamkharinejad, G., Marashi, S.H., Foolad, F., Javan, M., Fathollahi, Y. Unconditioned and learned morphine tolerance influence hippocampal-dependent short-term memory and the subjacent expression of GABA-A receptor alpha subunits (2021) *PLoS ONE*, 16 (9 September), art. no. e0253902.
79. Faraz, M., Kosarmadar, N., Rezaei, M., Zare, M., Javan, M., Barkley, V., Shojaei, A., Mirnajafi-Zadeh, J. Deep brain stimulation effects on learning, memory and glutamate and gabaa receptor subunit gene expression in kindled rats (2021) *Acta Neurobiologiae Experimentalis*, 81 (1), pp. 43-57.
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## **Supervised Post-graduate thesis**

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### **PhD dissertation supervision:**

1. Mahdi Goudarzvand, Effect of vitamins E and D3 on cell death and remyelination of hippocampal formation of rat following local injection of ethidium bromide. 2009.
2. Fereshteh Pourabdolhosein; Studying the effect of Nogo signaling inhibition on neural stem cells participation in remyelination of mouse optic nerve and chiasma following lysolecitin-induced demyelination. 2010.
3. Shiva Khezri, Studying the effect of Nogo signaling inhibition on the symptoms and endogenous neural stem cells migration in EAE model of multiple sclerosis in C57BL/6 mice. 2011.
4. Leila Satarian, Transplantation of neural progenitors derived from induced pluripotent stem cells for repair of rat optic nerve. 2013.
5. Sareh Asadi, Studying the repair and neurogenesis in kainic acid degenerated hippocampus following pluripotency inducers administration in mouse. 2013.
6. Samaneh Dehghan, Studying the possibility of increasing repair capacity of central nervous system using the pluripotency inducers and its effect on myelin repair in mouse optic nerve and chiasm. 2014.
7. Maryam Ghasemi, Investigating the effect of miR-302/367 cluster on brain progenitor cells population and myelin repair in an experimental model of demyelination. 2015.
8. Maryam Mohajeri, Effect of Polymer Nano Curcumin on the MS symptoms & regeneration of myelin in CNS of in vitro model Experimental Autoimmune Encephalomyelitis. 2015.
9. Azadeh Yazdi, studying the effect of fingolimod administration on neural progenitor cells-mediated myelin repair in experimental model of demyelination. 2015.
10. Shirin Kashfi, Evaluating purinergic system function during hESC-derived oligodendrocyte precursor cells differentiation, 2016.
11. Leila Zare, Transdifferentiation of astrocytes to oligodendrocyte lineage cells using small molecules and investigating the potency of myelin repair of transdifferentiated cells in an experimental model of demyelination. 2017.
12. Akram Mokhtarzadeh-Khanghahin Transdifferentiation of Astrocytes into Oligodendrocyte Progenitor-like Cells Using a Single Transcription Factor Sox10, 2018.
13. MaryamSadat Seyedsadr, Evaluating the role of sphingosine-1-phosphate receptor 2 (S1PR2) in demyelination and remyelination in animal model of multiple sclerosis, 2018.
14. Parvin Niknam, Studying the effect of inhibition of protein tyrosine phosphatase sigma (PTP $\sigma$ ) receptor on myelin repair in mouse optic chiasm, 2019.



15. Safoura Rezaei, The effect of free chondroitinase ABC I and porous silicon nanoparticles loaded enzyme on myelin repair of mouse corpus callosum, 2019.
16. Fatemeh Honarvar, Enhancing remyelination in mouse central nervous system using Ursolic Acid, 2019.
17. Forough Foolad, Evaluating the correlation of mitochondrial dysfunction indices with disease severity in Multiple Sclerosis patients, 2020.
18. Mahsa Motavaf, Evaluation of the effects of dendrosomal nano-curcumin on proliferation and differentiation of oligodendrocyte progenitor cells in vitro and in the experimental model of cuprizone demyelination, 2020.
19. Fatemeh Khani, Analyzing Fingolimod's Effects on BDNF-regulating gene expression system in Human Peripheral Blood and Rat Co-culture, 2020.
20. Saman Esmailnejad, Evaluating the effect of Metformin on mouse optic chiasm degeneration and regeneration in experimental model of demyelination, 2021.
21. Mozghan Alipour, Studying the role of TRPV membrane channel and calcium concentration in mesenchymal stem cell differentiation induced by electromagnetic waves, 2021.
22. Nasrin Jangjoo-ghalat, Studying the role of hyperphosphorylated Tau in demyelination-induced axonopathy in mouse optic chiasm, 2022.
23. Sahar Farhangi, Exploiting peptides for targeted delivery of gold nanoparticles to glial scars in animal models of demyelination, 2022.
24. Atefeh Rayatpour, Evaluation of anti-inflammatory, protective and restorative effects of deferiprone following demyelination in an experimental model of multiple sclerosis, 2022.
25. Hamed Shiri, Conversion of bone marrow and adipose tissue mesenchymal stem cells to neural tissue progenitors using forced expression of Sox2 and Olig2 followed by comparing their immunomodulatory and re-myelinating properties, 2023.
26. Mohsen Sharifi-Kelishadi, Conversion of astrocytes to oligodendrocyte lineage cells using small molecules affecting glial cells signaling pathways, 2023.
27. Elham Parandavar, Aging and OPCs senescence following long term demyelination. Waiting for defence (2024).
28. Shirin Bajoovand, The Effect of Rosuvastatin on Myelin Protection and Repair in Experimental Model of Multiple Sclerosis, Ongoing.
29. Fatemeh Vahdani, Assessment of NLRP3 inflammasome complex components during induction of Parkinson's disease model by MPTP in rhesus monkeys, Ongoing.
30. Melika Tavakoli-yaraki, investigating the Effect of Histone Deacetylase Inhibition on Phenotype Polarization of Glial Cells and Myelin repair factors in an Experimental Model of Multiple Sclerosis, Ongoing.
31. Maryam Izadpanahin Characterization of electrophysiological and cognitive biomarkers in EEG signal correlated to saccadic eye movement in a primate model of Parkinsonism along the progression of disease and after cell therapy with GMP grade dopamine progenitor neurons, Ongoing.

### **MSc thesis supervision:**

1. Leila Satarian, Effect of epinephrine on tolerance development to analgesic effect of intrathecally administrated morphine, a study based on Ca<sup>2+</sup>/calmodulin dependent protein kinase II $\alpha$  (CaMK II $\alpha$ ) expression, 2006.
2. Jamal Ghorbi, Study of the possible changes in beta integrins 1 and 2 mRNA in lumbar spinal cord of rats tolerated to the analgesic effect of morphine, 2007.
3. Amir Zarebkohan, Effect of repetitive administration of morphine on expression and splicing variation of vitamin C transporters (SVCT1 and SVCT2) in hippocampus and dorsal horn of spinal cord in rats, 2007.
4. Sabah Mozafari, Study of possible involvement of Endogenous Adult Neural Stem Cells as a physiological capacity in remyelination of lysolecithin-induced demyelination in rat optic nerve & chiasm. 2008.
5. Mohammad Amin Sherafat, Effect of gonadectomy on demyelination and remyelination induced by lysolecithin in rat optic nerve and chiasm. 2008.
6. Samaneh Dehghan, Molecular and electrophysiological study of the effect of fibroblast growth factor-2 on remyelination of mouse optic nerve and chiasma following lysolecithin-induced demyelination. 2009.
7. Mahdieh Azin, Molecular and electrophysiological study of the remyelination process in mouse dentate gyrus following lysolecithin-induced demyelination. 2009.
8. Saeed Pajooan, Effect of valproic acid on myelin repair in local EAE model of multiple sclerosis. 2011.
9. Mahboubeh Malakouti-khah, Effects of vitamins D and E on proliferation and differentiation of oligodendrocyte precursors derived from human induced pluripotent stem cells. 2012.
10. Saman Esmailnejad, Application of small molecules effective on pluripotency induction to enhance repair in kainic acid induced hippocampal degeneration. 2012.
11. Narges Pachenari, Studying the effect of Glycogen synthase kinas (GSK) inhibitor on proliferation of neural stem cells and oligodendrocyte precursors. 2013.
12. Maryam SeyedSadr, The protective effects of RPE-conditioned medium and hiPSC-derived neural progenitors in experimental model of optic nerve. 2013.
13. Sahar Farhangi, Direct reprogramming of astrocytes to oligodendrocyte progenitor cells using Sox2 transcription factor in an animal model of demyelination, 2017.
14. Katayoun Pakravan, Expression levels of miR-125b in exosomes derived from human mesenchymal stem cells and investigating the effects of exosome treatment on vascular endothelial growth factor in breast cancer cell line. 2017.
15. Melika Tavakoli-yaraki, Investigating the effect of Histone deacetylase inhibition on the inflammation level and myelin repair process in an experimental model of multiple sclerosis. 2021.
16. Mitochondrial transplantation in cuprizone induced demyelination in mice, Ongoing.
17. Ladan Daei-Rezaei, Effects of Functionalized Curcumin Carbon Dots in an Animal Model of Demyelination, ongoing.
18. Reyhaneh Doost, Investigating the effect of deferiprone on iron distribution between microglia and oligodendrocytes and microglia phenotypes in an animal model of optic nerve demyelination, Ongoing.