

## **Curriculum Vitae of Azita Parvaneh Tafreshi- 2018**

**Name:** Parvaneh Tafreshi, Azita

**Date of birth:** 21-03-1967

**Nationality:** Iranian

**Marital status:** Married, spouse: Dr. Bahman Zeynali (Ph.D in Developmental Biology, Associate professor)

**Email address:** tafreshi@nigeb.ac.ir & aptafreshi@yahoo.com

**Mobile:** 09124832517

**Degrees:** B.Sc. 1989 Biology, Animal Sciences, Shahid Beheshti University of Tehran (G.P.A. 17.57/20)

M.Sc. 1992 Physiology, Teachers Training University of Tehran (G.P.A. 18.5/20)

Ph.D 1998 Physiology, Neurosciences, Flinders University of South Australia, Australia (Ph.D awarded)

Postdoc position (2001-2002) Neuroscience, Heidelberg University, Germany.

Sabbatical leave (2014-2015) in Australian Regenerative Medicine Institute (ARMI)

**English proficiency:** Fluent in writing, reading, speaking and comprehension: IELTS score of 6.5

**Present Appointments:** Assistant Professor

Research Centre for genetic Engineering and Biotechnology

Shahrak Pajohesh, 17 Km Tehran-Karaj highway, Iran. P.O. Box 14965/161

### **Summary of Awards, positions held and membership:**

1989-1992 Postgraduate Scholarship (M.Sc.) from the Iranian Ministry of Culture and Higher Education

Thesis: The effects of Prostaglandin F2 alpha on sexual Behavior in male toads.

1993-1997 Postgraduate Scholarship (Ph.D) from the Iranian Ministry of Culture and Higher Education

Thesis: Roles of nerve growth factor (NGF) and neurotrophin-3 (NT3) in development of postnatal sympathetic neurons.

1998- present Academic member of the Research centre for Genetic Engineering and Biotechnology

1999- present Member of Iranian Biotechnology Society

### **Grants awarded**

1989-1997 ARC (Australian research cooperation)

1989-1997 MCHE (Ministry of Culture and Higher Education)

2001-2002 Postdoctoral fellowship from UNESCO and the University of Heidelberg, Germany  
(Professor Klaus Unsicker)

1998-present: Grants from the National Research centre for Genetic Engineering and Biotechnology  
(\$20,000)

2010-2012 Grant from the Iranian National Science Foundation (INSF) (\$10,000)

2012-2014 Grant from the Stem cell committee (\$20,000)

### **Students supervised:**

1. Shahanam Abbasi (M.Sc. in Physiology; University of Tehran; 2002); Thesis title: Effects of exogenous NGF on rat central nervous system.

2. Roghieh. Abbasi (M.Sc. in Physiology; University of Tehran; 2007); Thesis title: Roles of insulin like growth factor-I in brain of the insulin resistant rats.

3. Ali Pirouzi (M.Sc. in developmental biology; University of Tehran; 2008); Thesis title: The role of GSK-3 inhibitors on synthesis of growth factor TGF beta from cultured astrocytes.

4. Fatemeh Esmaili (M.Sc. in developmental biology; University of Tehran; 2008); Thesis title: The effects of lithium on laminar organization of brain cortex during development in NMRI mice.

5. Fatmeh Kashani (M.Sc. in developmental biology; University of Tehran; 2009); Thesis title: The role of GSK-3 inhibition and estradiol in cultured astrocytes.

6. Fahimeh mirakhori (M.Sc. in developmental biology; University of Tehran; 2009); Thesis title: Effects of lithium as a GSK-3 inhibitor on development of ovarian follicles in rat.
7. Maryam Mahmoodinia, (M.Sc. in developmental biology; University of Tehran; 2008); Thesis title: The role of GSK-3 inhibition on differentiation of cord blood mesenchymal stem cells.
8. Fatemeh Vahid Dastgerdi (M.Sc. in Developmental Biology; 2009). Thesis title: Differentiation of USSC into dopaminergic neurons by inhibition of GSK-3 $\beta$ .
9. Atefeh Safarpour, (M.Sc. in Developmental Biology; 2010). Thesis title: The role of inhibition of GSK-3 $\beta$  in adipogenic differentiation of Unrestricted Somatic Stem Cells (USSCs).
10. Samaneh Sheikhi kouhsar (M.Sc. in Physiology, 2009; Thesis title: Modeling of Multiple Sclerosis using over-activation of NOS in Wistar rat Corpus Callosum with Histochemical and Behavioral verification.
11. Mahinsadat Chavoshi (M.Sc. in Developmental Biology; 2010). Thesis title: role of inhibition of GSK-3 $\beta$  in dopaminergic differentiation of unrestricted somatic stem cells.
12. Anahita Shahraz (M.Sc. in Developmental Biology; 2010). Thesis title: The role of Wnt3a in dopaminergic differentiation of USSCs.
13. Newsha Haghparast (M.Sc. in Developmental Biology; 2011). Thesis title: The effect of canonical Wnt signaling pathway activation on osteogenic differentiation of unrestricted somatic stem cells.
14. Marzieh Mowlavi (M.Sc. in Developmental Biology; 2011). Thesis title: Effects of Dkk1 on osteogenic differentiation of unrestricted somatic stem cells.
15. Sina Bozorgmehr (M.Sc. in cell and molecular Biology, 2011); Thesis title: Mechanism of the action of estradiol on neuroprotection by astrocytes.
16. Somaieh Akbari (M.Sc in Physiology, 2012); Thesis title: Effects of bone marrow stromal cells (BMSC) in the animal model of EAE.
17. Akram Mokhtarzadeh Khangahi (M.Sc. in Developmental Biology, 2013); Thesis title: The role of TGF $\beta$  signaling in differentiation of Unrestricted Somatic Stem Cells (USSCs).
18. Fatemeh Deyhim (M.Sc. in Developmental Biology, 2016), Thesis title: Optimization of Dopaminergic Differentiation of Mesenchymal Stem Cell Through Modification of Shh Signaling Activity.
19. Hoda Kazemi (M.Sc. in Developmental Biology, 2017), thesis title: The effect of lithium chloride as a Wnt activator on induction of adipose derived mesenchymal stem cells towards oligodendrocyte differentiation.
20. Massume Mohammadian (MSc. In cell and Molecular Biology, 2017: Preparation, characterization and investigating of the effects of 7-BIO (Indirubin derivative) loaded Albumin nanoparticles on breast cancer cell lines.
21. Niloofar Harati (MSc. In cell and molecular Biology 2017): Investigation on the adsorption and release of 7 BIO from cationic iron oxide nanoparticles and its effects on breast cancer cell lines.

**Lectures presented; requested by the education offices in the Research centre for genetic Engineering and Biotechnology, University of Tehran and Azad University of Science and Research:**

Cell and molecular Biology  
 Genetics in developmental biology  
 Comparative developmental biology  
 Histochemistry and the tissue Ultrastructure  
 Special topics in Developmental Biology  
 Developmental Neurobiology

**Publications and Presentation**

**Publications**

**Parvaneh Tafreshi** A, Talebi F, Ghorbani S, Bernard C, Noorbakhsh F. Altered expression of IGF-I system in neurons of the inflamed spinal cord during acute experimental autoimmune encephalomyelitis. *J Comp Neurol.* 2017 Jun 15. doi: 10.1002/cne.24263.

**Parvaneh Tafreshi A**, Sylvain A., Sun G., Herszfeld D., Schulze K, Bernard C.C.A. (2015) Lithium chloride improves the efficiency of induced pluripotent stem cell-derived neurospheres. *Biological Chemistry*. 396 (8): 923-8. doi:10.1515/hsz-2014-0261

**Parvaneh Tafreshi A.**, Payne N., Sun G., Sylvain A., Schulze K. and Bernard C. (2014) Inactive GSK3 $\beta$  is disturbed in the spinal cord during experimental autoimmune encephalomyelitis, but rescued by stem cell therapy. *Neuroscience*. 277, 498-505. doi:10.1016/j.neuroscience.2014.07.013

Mokhtarzadeh Khangahi A., Zeynali B., Akhlaghpour A., **Parvaneh Tafreshi A.**, and Kriegelstein K. (2014) Activation of TGF $\beta$ 1 signaling enhances early dopaminergic differentiation in Unrestricted Somatic Stem Cells. *Neuroscience Letters*. 583, 60–64. doi: 10.1016/j.neulet.2014.08.055.

Mirakhori F, Zeynali B, **Tafreshi AP**, Shirmohammadian A. Lithium induces follicular atresia in rat ovary through a GSK-3 $\beta$ / $\beta$ -catenin dependent mechanism. *Molecular Reproduction and Development*. 2013; 80(4):286-96.

Sina Bozorgmehr, **Azita Parvaneh Tafreshi**, Shahsanam Abbasi and Bahman Zeynali. The role of Wnt signaling pathway on expression of TGF $\beta$ 1 and TGF $\beta$ 2 in cultured rat astrocytes. *Journal of Anatomical Sciences*. 2013; 10 (37-42)

Akbari S., **Parvaneh Tafreshi A.**, Abbasi Sh., Momen H., Massumi M. NGF gene transfection and expression in bone marrow mesenchymal stem cells using HIV and FIV based lentiviral vectors. *Journal of cell and Tissue*. 2012; 3(3): 211-220

Dastjerdi FV, Zeynali B, **Tafreshi AP**, Shahraz A, Chavoshi MS, Najafabadi IK, Vardanjani MM, Atashi A, Soleimani M. Inhibition of GSK-3 $\beta$  enhances neural differentiation in unrestricted somatic stem cells. *Cell Biology International*. 2012; 36(11):967-72. doi: 10.1042/cbi20110541.

Safarpour, A., Zeynali B., Soleymani M., **Parvaneh Tafreshi A.** Inhibition of GSK-3 $\beta$  in unresctricted somatic stem cells (USSCs) causes adipogenic differentiation but inhibits osteogenic differentiation.. *Journal of Anatomical Sciences*. 2011; 9(35): 83-94.

Sheikhi Kouhsar S., Karami M., **Parvaneh Tafreshi A.**, Roghani,M. and Jalali Nadoushan MR. Microinjection of L-arginine into corpus callosum causes reduction in myelin concentration and neuroinflammation.( 2011) *Brain Research*. 1392:93-100.

Pirouzi A., **Parvaneh Tafreshi A.**, Kashani F., Darvishalipour SH. and Zeynali B. The role of BIO as specific inhibitor of GSK-3 in the synthesis of transforming growth factor beta by astrocytes. (2012). *Iranian Journal of Biological Sciences*.

Mirakhori F., **Parvaneh Tafreshi A.**, Shirmohamadian A., Baghaban Eslaminejad M, Hossein G., Zeynali B. Mechanism of lithium actions on follicular development of rat ovary.( 2010) *Yahktech*. 12 (2) 269-276.

Mirakhori F., **Parvaneh Tafreshi A.**, Zeynali B. The expression of beta catenin and GSK-3 beta in the ovaries of PMSG treated immature female rats. (2010). *Journal of Iranian Anatomical Sciences*. 30(8): 13-24.

**Parvaneh Tafreshi A.**, Jalal R., Darvishalipour S., Sepehri H. and Adeli K. Investigation on the level of the brain IGF-I protein expression in the insulin resistant animal model. (2010) *Iraninan Journal of Endocrinology and Metabolism*. 12 (9): 71-76

**Parvaneh Tafreshi A.**, Jalal R., Darvishalipour S., Sepehri H. and Adeli K. Investigation on the levels of IGF-I receptor and IGF-I binding protein I in the brain of insulin resistant rats.(2010) *Iraninan Journal of Endocrinology and Metabolism*. 11 (6): 707-12

**Tafreshi A.P.**, Ahmadi A., Ghaffarpur M., Mostafavi H., Rezaeizadeh H., Minaie B., Faghihzadeh S.,

Naseri M. (2007) An Iranian herbal-marine medicine, MS14, ameliorates experimental allergic encephalomyelitis. *Phytotherapy Research*. 2008, 22(8):1083-6.

**Tafreshi A.P.**, Zeynali, B. and Krieglstein K. (2006) The role of caspase 9 during programmed cell death in ciliary ganglia of chick embryo. *Medical Journal of Sciences*, 17 (3): 221-224.

**Tafreshi A.P.** Nerve Growth factor prevents demyelination, cell Death and progression of the disease in experimental allergic encephalomyelitis (2006). *Iran Journal of Allergy Asthma and Immunology*, 5(4): 177-181.

**Tafreshi A.P.**, Zeynali, B. and Krieglstein K. (2006) Laminar organization of cerebral cortex in transforming growth factor beta mutant mice. *Medical Journal of Sciences*, 17(1): 27-34.

**Tafreshi A.P.**, Mostafavi H. and Zeynali B. (2005) Induction of experimental allergic encephalomyelitis, an animal model for multiple sclerosis, in C57/BL6 mice. *Iranian Journal of Allergy Asthma and Immunology*. 4 (3): 113-117.

Abbasi S. **Tafreshi A.P.**, Sepehri H., Sabooni F. and Zeynali B. (2005) Effects of Exogenous NGF on Cell Infiltration and Level of Heat Shock Protein-27 in the Central Nervous System. *Iranian International Journal of Science*. 6(1), 2005, p.1-11

Abbasi S., **Tafreshi A.P.**, And Sepehri H. (2004) Effects of intracerebroventricular administration of NGF on blood brain barrier and stress induced protein (HSP) in the central nervous system. *Medical Journal of Islamic Academy of Sciences*. 14 (3):101-104.

**Tafreshi A.P.**, and Sanati M. (2003) An *in vivo* assay for biological activity of synthesized recombinant human growth hormone. *Archives of Razi*. 56: 103-106.

**Tafreshi A.P.**, Zhou X-F. and Rush R.A. (1998). Endogenous nerve growth factor and neurotrophin 3 act simultaneously to ensure the survival of postnatal sympathetic neurons *in vivo*. *Neuroscience*. 83 (2), 381-391.

Rush R.A., Chie E., Liu D., **Tafreshi A.P.**, Zettler C., and Zhou X-F. (1997). Neurotrophic factors are required by mature sympathetic neurons for survival, transmission and connectivity. *Clinical and Experimental Pharmacology, Physiology*. 24, 549-555.

**Tafreshi A.P.** and Rostami P. (1995) Effects of prostaglandin F2 alpha on the sexual behavior of Bufo Viridis. *Iranian Journal of Science*. 7 (1) 54-61.

#### **Presentations (examples)**

**Tafreshi, A.P.**, Rostami, P., Parivar, K. and Balouchnejad, T. (1993) The effects of PGF2 alpha on pigmentation of thumb pads in male toads, Bufo Viridis. XXXII Congress of the International Union of Physiological Sciences. Poster 86, 124.

**Tafreshi, A.P.**, Zhou, X-F. and Rush, R.A. (1995). Two neurotrophic factors for survival of sympathetic neurons. Australian Society for Medical Research (ASMR).Poster \*51.

**Tafreshi, A.P.**, Zhou, X-F. and Rush, R.A. (1996). Endogenous nerve growth factor and neurotrophin 3 act simultaneously to ensure the survival of postnatal sympathetic neurons *in vivo*. *Abs. Proc. Aust. Soc. Neurosci*. 7, 89.

**Tafreshi, A.P.**, Zhou, X-F. and Rush, R.A. (1997). Endogenous NT3 regulates trkC and trkA phosphorylation in mature sympathetic neurons. *Abs. Proc. Aust. Soc. Neurosci*. 8, 51.

**Tafreshi, A.P.**, Zhou, X-F. and Rush, R.A. (1999). NGF but not NT3 is required for adrenergic activity of mature sympathetic neurons. Abs. Proc. Iranian. Physiology and Pharmacology Congress.

**Tafreshi, A.P.** (2000). An in vivo assay for biological activity of a recombinant growth hormone synthesized in the national research centre for genetic engineering and biotechnology of Iran. Abs. Proc. 1<sup>st</sup> Iranian Biotechnology Congress.

Zeynali, B., **Tafreshi, A.P.** and Kriegelstein, K. (2003) Caspase 9 and its possible role in programmed cell death. Conference for cell and developmental biology, Dresden (Germany).

R. Abbasi., **A.P.Tafreshi**, R. Jalal, S. Darvishalipour, H. Sepehri and K. Adeli. (2006) Induction of insulin resistance or type II diabetes mellitus in rats required for investigation of altered molecular mechanisms in brain. Second international congress in Biology.

R. Abbasi., **A.P.Tafreshi**, R. Jalal, S. Darvishalipour, H. Sepehri and K. Adeli. (2007) Altered levels of phosphorylated IGF-I receptor and IGFBP-1 in insulin resistant adult rat brain. 18<sup>th</sup> Physiology and pharmacology congress.

Pirouzi, **A.P.Tafreshi**, Kashani, F., Darvishalipour, SH. and Zeynali, B. The role of BIO as specific inhibitor of GSK-3 in the synthesis of transforming growth factor beta by astrocytes. (2008) 3<sup>rd</sup> Iranian international conference in Biology.

Goodarzi, A. Azizi V., **A.P.Tafreshi**, and Zeynali, B. Effects of lithium in ovulation of rats. (2008) 3<sup>rd</sup> Iranian international conference in Biology.

F. Mirakhori, B. Zeynali, A **Parvaneh Tafreshi.**, G. Hossein, A. Shirmohammadian. (2009) lithium chloride decreases folliculogenesis in immature rat ovary by inducing granulose cell apoptosis. 16<sup>th</sup> international society for Developmental biologists congress, published in the supplements of the journal of Mechanism of Development.

F. Vahid Dastgerdi, A. **Parvaneh Tafreshi.**, M. Mahmoodinia., M. Soleimani and B. Zeynali. (2009) Differentiation of USSC into dopaminergic neurons by inhibition of GSK-3 $\beta$ . 16<sup>th</sup> international society for Developmental biologists congress, published in the supplements of the journal of Mechanism of Development.

Safarpour, A., **Parvaneh Tafreshi Azita**, Vahid Dastjerdi F., Soleymani M., Zeynali B. Inhibition of GSK-3 $\beta$  in unrestricted somatic stem cells (USSCs) causes adipogenic differentiation while inhibits osteogenic differentiation. 2010. 3<sup>rd</sup> international congress on stem cell and tissue formation (Dresden).

Mahinsadat Chavoshi, **Azita Parvaneh Tafreshi**, Bahman Zeynali. (2011) Inhibition of canonical Wnt signaling pathway decreases dopaminergic differentiation of unrestricted somatic stem cells. International conference on stem cells in development and disease (Berlin, Max Delbruck centre).

Newsha Haghparast, **Azita Parvaneh Tafreshi**, Bahman Zeynali. (2011) Activation of canonical Wnt signaling pathway decreases osteogenic differentiation of unrestricted somatic stem cells. International conference on stem cells in development and disease (Berlin, Max Delbruck centre).

Marzieh Mowlavi, **Azita Parvaneh Tafreshi**, Bahman Zeynali. (2011) The effects of Dkk1 on osteogenic differentiation of unrestricted somatic stem cells. International conference on stem cells in development and disease (Berlin, Max Delbruck centre).

Anahita Shahraz, **Azita Parvaneh Tafreshi**, Bahman Zeynali. (2011) Wnt3a induces differentiation of USSCs towards dopaminergic neural precursor cells. International conference on stem cells in development and disease (Berlin, Max Delbruck centre).

## **Practical skills**

**Generation of the Animal models:** hypophysectomized rats (through surgery) and EAE mice (through immunization)

**Protein analysis and purification:** Immunohistochemistry, immunocytochemistry, dot blotting, western blotting, immunoblotting, protein purification by chromatography e.g. nerve growth factor purification from mice salivary gland, myelin protein purification from bovine spinal cord

**mRNA analysis and quantitation:** semi-quantitative RT-PCR and real time PCR

**Cell culture:** Neural, glia (astrocyte) and stem cell culture (from chick, mice and human tissues)

**Stereotactical approach skills:** Intracerebroventricular administration of stem cells, growth factors and pharmaceutical reagents