

In the Name of God



Zohreh Bagher

- Assistant Professor at ENT and Head and Neck Research Center and Department, Hazrat Rasoul Akram Hospital, The Five Senses Health Institute, Iran University of Medical Sciences, Tehran, Iran

-Department of Tissue Engineering & Regenerative Medicine, Faculty of Advanced Technologies in Medicine, Iran University of Medical Sciences, Tehran, Iran

PERSONAL INFORMATION

- Gender: Female
- Field of study: Tissue Engineering and Regenerative Medicine
- Academic degree: PhD
- Marital status: Married
- Nationality: Iranian
- Birth date: 22/ 04/1984
- Place of birth: Tehran, Iran
- Phone number: +989124081428
- Languages: Persian, English
- E-mail:***baharebagher@gmail.com***

RESEARCH INTERESTS

- Tissue Engineering
- Scaffold fabrication and characterization
- Stem cell Therapy

EDUCATIONAL HISTORY

BSc: Radiology (Tehran University of Medical Sciences)

Year of Entrance: 2002

Year of Graduation: 2006

MSc: Anatomical Sciences (Qazvin University of Medical Sciences, Faculty of Medicine)

Year of Entrance: 2008

Year of Graduation: 2010

MSc Thesis: *Comparative Study of Bone Repair Using Porous HA/ β -TCP and Xenograft Scaffold in Rabbits.*

MSc Average: (18 / 20) (Ranked as the best Average among other classmates)

PhD: Tissue Engineering (Iran University of Medical Sciences, Faculty of Advanced Medical Technologies)

Year of Entrance: 2010

PhD Thesis: *Differentiation of Wharton's Jelly-derived mesenchymal stem cells to motor neuron-like cells on electrospun PCL/Collagen nanofiber scaffolds*

PhD Average: (18.50 / 20)

Teaching experiences:

Teaching experience in Anatomical sciences (Histology and Anatomy) for:

- 1) Medical students (Histology and Anatomy)
- 2) Dentistry students (Histology)
- 3) Nursing students (Histology and Anatomy)

Technical Experience:

• Cellular Technics

- 1) Adult Stem cell Isolation and Culture (Three-Dimensional Tissue Culture , Adult mesenchymal stem cells,Osteoblast cells)
- 2) Molecular biological: Real time PCR
- 3) Immunology: Immunocytochemistry
- 4) Animals handled: Rat, Mice, Rabbit
- 5) Microscopic Technical: Working with Fluorescence Microscope and Light Microscope
- 6) Histological Technical: Preparing of sample for study light and Electron Microscope(SEM)
- 7) Routine, Special staining (von Kossa,eosine and hematoxylin,crysil violet)

Workshops:

- Participation in Real time PCR, Gene Cloning, primer design, work with vectors (Transfection and Transduction) and 2D and 3D cell culture workshop(Students' Scientific Research Center (SSRC) & Exceptional Talent Development Center (ETDC), Tehran university).
- Participation in SPSS workshop (Students' Scientific Research Center (SSRC) & Exceptional Talent Development Center (ETDC), Tehran university).
- Participation in DNA&RNA extraction method (Tehran university of medical science)

Skills:

- Computer: Excellent knowledge of Office XP (Excel, Word, PowerPoint).
- Internet

Language capabilities:

English

Publications:

1. Somayeh Ebrahimi-Barough , Zohreh Bagher , Jafar Ai , Reza Rahbarghazi , and Elham Hoveizi. Current Understanding Realities of Umbilical Cord Stem Cells Biology and Future Perspectives in Clinical Application. *Perinatal Tissue-Derived Stem Cells, Stem Cell Biology and Regenerative Medicine*, DOI 10.1007/978-3-319-46410-7_6.
2. Bagher Z, Azami M, Ebrahimi-Barough S, Mirzadeh H, Solouk A, Soleimani M, Ai J, Nourani MR, Joghataei MT. Differentiation of Wharton's Jelly-derived mesenchymal stem cells to motor neuron like cells on collagen-grafted three-dimensional nanofibers. *Mol Neurobiol*. 2016 May;53(4):2397-408.
3. Bagher Z, Ebrahimi-Barough S, Azami M, Safa M, Joghataei MT. Cellular Activity of Wharton's Jelly -Derived Mesenchymal Stem Cells on Electrospun Fibrous and Solvent-Cast Film Scaffolds .*J Biomed Mater Res A*. 2016 Jan;104(1):218-26.
4. Bagher Z, Ebrahimi-Barough S, Azami M, Mirzadeh H, Soleimani M, Ai J, Nourani MR, Joghataei MT. Induction of Human Umbilical Wharton's Jelly-Derived Mesenchymal Stem Cells toward Motor neuron-like cells. *In Vitro Cell Dev Biol Anim*. 2015 Oct;51(9):987-94.
5. Farokhi M, Sharifi S, Shafieyan Y, Bagher Z, Mottaghtalab F, Hatampoor A, Imani M, Shokrgozar MA. Porous crosslinked poly (ϵ -caprolactonefumarate) / nanohydroxy apatite composites for bone tissue engineering. *Journal of Biomedical Materials Research Part A*. 2012;100A(4):1051–1060.
6. Bagher Z, Shams A.R, Farokhi M, Aghaei F. Pyramidal cell damage in mouse brain after exposure to electromagnetic field. *Iranian Journal of Neurology*. 2008;7(2):361-371.

7. Bagher Z, Rajaei F, Shokrgozar M. Comparative Study of Bone Repair Using Porous Hydroxyapatite/ β -Tricalcium Phosphate and Xenograft Scaffold in Rabbits with Tibia Defect. *Iranian Biomedical Journal*. 2012;16(1):18-24.
8. Rajaei F, BagherZ, Farokhi M, Shokrgozar MA. Comparative Study on Xnograft Saffold and Prous Hydroxyapatite/Tricalcium Phosphate for the Repair of Bony Defect. *Journal of Iranian Anatomical Sciences*. 2011;9:23-32.
9. Zh Atoufi, P Zarrintaj, Gh Hashemi Motlagh, A Amiri, Z Bagher, S K Kamrava. A novel bio electro active alginate-aniline tetramer/agarose scaffold for tissue engineering: synthesis, characterization, drug release and cell culture study. *J Biomater Sci Polym Ed* . 2017 Oct;28(15):1617-1638.
10. Z Bagher, S K Kamrava, R Alizadeh, M Farhadi, M Absalan, M Falah, F Faghihi, A Zare-Sadeghi, A Komeili. Differentiation of neural crest stem cells from nasal mucosa into motor neuron-like cells. *J Chem Neuroanat*. 2018 Oct;92:35-40.
11. M Salehi, Z Bagher, S K Kamrava, A Ehterami, R Alizadeh, M Farhadi, M Falah, A Komeili. Alginate/chitosan hydrogel containing olfactory ectomesenchymal stem cells for sciatic nerve tissue engineering. *J Cell Physiol*. 2019 Jan 31.
12. Z Bagher, Zh Atoufi, R Alizadeh, M Farhadi, P Zarrintaj, L Moroni, M Setayeshmehr, A Komeili, S.K Kamrava. Conductive hydrogel based on chitosan-aniline pentamer/gelatin/agarose significantly promoted motor neuron-like cells differentiation of human olfactory ecto-mesenchymal stem cells. *Mater Sci Eng C Mater Biol Appl* . 2019 Aug;101:243-253.
13. R Alizadeh, Z Bagher, S.Kamran Kamrava, M Falah, H Ghasemi Hamidabadi, M Eskandarian Boroujeni, F Mohammadi, S Khodaverdi, A Zare-Sadeghi, A Olya, A Komeili. Differentiation of human mesenchymal stem cells (MSC) to dopaminergic neurons: A comparison between Wharton's Jelly and olfactory mucosa as sources of MSCs. *J Chem Neuroanat*. 2019 Mar;96:126-133.

14. R Alizadeh, S.Kamran Kamrava, Z Bagher, M Farhadi, M Falah, F Moradi, M Eskandarian Boroujeni, M Soleimani, A Kamyab, A Komeili. Human olfactory stem cells: As a promising source of dopaminergic neuron-like cells for treatment of Parkinson's disease. *Neurosci Lett*. 2019 Mar 23;696:52-59.
15. R Alizadeh, P Zarrintaj, S.Kamran Kamrava, Z Bagher, M Farhadi, F Heidari, A Komeili, T J Gutiérrez, M Saeb. Conductive hydrogels based on agarose/alginate/chitosan for neural disorder therapy. *Carbohydr Polym* . 2019 Nov 15;224:115161.
16. Zh Atoufi, S.Kamran Kamrava, S Davachi, M Hassanabadi, S Saeedi Garakani, R Alizadeh, M Farhadi, Sh Tavakol, Z Bagher, Gh Hashemi Motlagh. Injectable PNIPAM/Hyaluronic acid hydrogels containing multipurpose modified particles for cartilage tissue engineering: Synthesis, characterization, drug release. *Int J Biol Macromol*. 2019 Oct 15;139:1168-1181.
17. M Falah, M Houshmand, M Balali, A Asghari, Z Bagher, R Alizadeh, M Farhadi. Role of GJB2 and GJB6 in Iranian Nonsyndromic Hearing Impairment: From Molecular Analysis to Literature Reviews. *Fetal Pediatr Pathol*. 2020 Feb;39(1):1-12.
18. Tavakol S Rasoulilian B, Almasi A, Hoveizi E, Bagher Z, Hayat P, Joghataei MT, Rezayat SM. Strong binding active constituents of phytochemical to BMPRI1A promote bone regeneration: In vitro, in silico docking, and in vivo studies. *J Cell Physiol* . 2019 Aug;234(8):14246-14258.
19. Z Bagher, A Ehterami, M Safdel, H Khastar, H Semiari, A Asefnejad, S.M Davachi, M Mirzaii, M Salehi. Wound healing with alginate/chitosan hydrogel containing hesperidin in rat model. *Journal of Drug Delivery Science and Technology*.2020. 55,101379.
20. S Saeedi Garakani, M Khanmohammadi, Zh Atoufi, S.K Kamrava, M Setayeshmehr, R Alizadeh, F Faghihi, Z Bagher, S.M Davachi, A Abbaspourrad. Fabrication of

chitosan/agarose scaffolds containing extracellular matrix for tissue engineering applications. *Int J Biol Macromol.* 2020 Jan 15;143:533-545.

21. M Khanmohammadi, V Zolfagharzadeh, Z Bagher, H Soltani, J Ai. Cell encapsulation in core-shell microcapsules through coaxial electrospinning system and horseradish peroxidase –catalyzed crosslinking. *Biomed Phys Eng Express* . 2020 Jan 13;6(1):015022.

22. Z Bagher, N Asgari, P Bozorgmehr, SK Kamrava, R Alizadeh, S Seifalian. Will tissue-engineering strategies bring new hope for the reconstruction of nasal septal cartilage? *Curr Stem Cell Res Ther.* 2020;15(2):144-154.

23. Z Bagher A Ehterami, M Nasrolahi, M Azimi, M Salehi. Hesperidin promotes peripheral nerve regeneration based on tissue engineering strategy using alginate / chitosan hydrogel: in vitro and in vivo study. *International Journal of Polymeric Materials and Polymeric Biomaterials.*2021; 70(5), pp. 299-308.

24. M Ziloochi Kashani, Z Bagher, H Asgari, M Najafi, M Koruji, F Mehraein. Differentiation of neonate mouse spermatogonial stem cells on three dimensional Agar / poly vinyl Alcohol nanofiber scaffold. *Syst Biol Reprod Med.* 2020 Jun;66(3):202-215.

25. Karimi, S., Bagher, Z., Najmoddin, N., Simorgh, S., Pezeshki-Modaress, M. Alginate-magnetic short nanofibers 3D composite hydrogel enhances the encapsulated human olfactory mucosa stem cells bioactivity for potential nerve regeneration application. *Int J Biol Macromol.* 2021 Jan 15;167:796-806.

26. Sanooghi, D., Vahdani, P., Bagher, Z. et al. In vitro characterization of human bone marrow mesenchymal stem cell-derived motor neurons induced by epigenetic modifiers. *Egyptian Journal of Medical Human Genetics.*2021; 22(1),53.

27. Simorgh, S., Bagher, Z., Farhadi, M., et al. Magnetic Targeting of Human Olfactory Mucosa Stem Cells Following Intranasal Administration: a Novel Approach to Parkinson's Disease Treatment. *Mol Neurobiol* . 2021 Apr 15.

28. Hatef Ghasemi Hamidabadi, Sara Simorgh, Seyed Kamran Kamrava, Zeinab Namjoo, Zohreh Bagher. et al. Promoting motor functions in a spinal cord injury model of rats using transplantation of differentiated human olfactory stem cells: A step towards future therapy. *Behav Brain Res* . 2021 May 7;405:113205.
29. Sajad Hassanzadeh , Maryam Jalessi , Seyed Behnamedin Jameie , Mehdi Khanmohammadi , Zohre Bagher. et al. More attention on glial cells to have better recovery after spinal cord injury. *Biochem Biophys Rep* 2021 Jan 25;25:100905.
30. Mohammad Farhadi, Mahdi Eskandarian Boroujeni, Seyed Kamran Kamrava, Zohreh Bagher. Implantation of human olfactory ecto-mesenchymal stem cells restores locomotion in a rat model of Parkinson's disease. *J Chem Neuroanat*. 2021 Jul;114:101961.
31. Abolfazl Salehi Moghaddam, Hossein Ali Khonakdar, Mohammad Arjmand, Seyed Hassan Jafari, Zohreh Baghe. et al. Review of Bioprinting in Regenerative Medicine: Naturally Derived Bioinks and Stem Cells. *ACS Appl. Bio Mater*. 2021; 4, 5, 4049–4070.
32. Ghaderinejad, P., Najmoddin, N., Bagher, Z., Simorgh, S., Pezeshki-Modaress, M. An injectable anisotropic alginate hydrogel containing oriented fibers for nerve tissue engineering. *Chemical Engineering Journal*.2021; 420,130465.
33. Zare, P., Aleemardani, M., Seifalian, A., Bagher, Z., Seifalian, A.M. Graphene oxide: Opportunities and challenges in biomedicine. *Nanomaterials*.2021; 11(5),1083.
34. Zare, P., Pezeshki-Modaress, M., Davachi, S.M., (...), Rashedi, H., Bagher, Z. Alginate sulfate-based hydrogel/nanofiber composite scaffold with controlled Kartogenin delivery for tissue engineering. *Carbohydrate Polymers*.2021; 266,118123.
35. Bayat, A.-H., Saeidikhoo, S., Ebrahimi, V., (...), Bagher, Z. Alizadeh, R., Aliaghaei, A. Bilateral striatal transplantation of human olfactory stem cells ameliorates motor

function, prevents necroptosis-induced cell death and improves striatal volume in the rat model of Huntington's disease. *Journal of Chemical Neuroanatomy*.2021; 112,101903.

36. Rafieh Alizadeh , Mahdi Eskandarian Boroujeni , Seyed Kamran Kamrava , Ava Modirzadeh Tehrani , Zohreh Bagher.. et al. From Transcriptome to Behavior: Intranasal Injection of Late Passage Human Olfactory Stem Cells Displays Potential in a Rat Model of Parkinson's Disease .*ACS Chem Neurosci*. 2021;16;12(12):2209-2217.

37. Mina Aleemardani 1, Zohreh Bagher 2, Mohammad Farhadi 2, Hadi Chahsetareh 3, Roghayeh Najafi 3, Behnaz Eftekhari 1, Alexander Seifalian. Can Tissue Engineering Bring Hope to the Development of Human Tympanic Membrane?
Tissue Eng Part B Rev 2021 Feb 17. doi: 10.1089/ten.TEB.2020.0176.

Congress:

1- Zohreh Bagher, Ebrahimi-Barough S, Azami M, Mirzadeh H, Joghataei MT. Human Umbilical Wharton's Jelly-Derived Mesenchymal Stem Cells toward Motor neuron-like cells . The first national Congress and 5th Annual Congress of stem cells; 01/2015

2- Zohreh Bagher, Ebrahimi-Barough S, Azami M, Mirzadeh H, Joghataei MT. Differentiation of Wharton's Jelly-derived mesenchymal stem cells to motor neuron like cells on collagen-grafted three-dimensional nanofibers. The Asian nano congress; 01/2015

3- Zohreh Bagher, Ebrahimi-Barough S, Azami M, Mirzadeh H, Joghataei MT . Induction of Human Umbilical Wharton's Jelly-Derived Mesenchymal Stem Cells toward Motor neuron-like cells.The first national Congress and 5th Annual Congress of stem cells; 01/2015

4- Zohreh Bagher, Ebrahimi-Barough S, Azami M, Mirzadeh H, Joghataei MT . Investigation of Wharton's Jelly -Derived Mesenchymal Stem Cells' Cellular Activity on

Electrospun Fibrous and Solvent-Cast Film Scaffolds. The first Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 01/2015.

5- Bagher Z, Shams A.R, Farokhi M. Pyramidal cell damage in mouse brain after exposure to electromagnetic field. National Congress of Anatomical Sciences, 2009, Tehran, Iran (Oral presentation)

6. Bagher Z, Shams A.R, Farokhi M. Degenerative effects of electromagnetic field on frontal cortex of mouse brain. Congress of Qazvin university of medical science 2010, (oral presentation).

7. Zohreh Bagher, Seyed Kamran Kamrava, Ali Komeili, Rafieh Alizadeh. Conductive Hydrogel Induced Differentiation of Wharton's Jelly-Derived Mesenchymal Stem Cells into Motor Neuron-Like Cells. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.

8. Zohreh Bagher, payam zarrintaj, Abolfazl Salehi Moghadam, Rafiie Alizadeh, Ali Komeili, Seyed Kamran Kamrava. Synthesis of conductive hydrogel based on gelatin-aniline pentamer/chitosan for neural tissue engineering. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.

9. Anahita Amirí, Payam Zarrintaj, Zhale Atoufi, Ghodratollah Hashemi Motlagh, Zohreh Bagher. Synthesis and characterization of novel bio conductive hydrogel based on alginate chitosan-aniline pentamer for neural tissue engineering. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.

10. Zhale Atoufi, Payam Zarrintaj, Anahita Amirí, Ghodratollah Hashemi Motlagh, Zhale Atoufi, synthesis of a novel conductive alginate/agaroz hydrogel for smart drug release. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.

11. Zhale Atoufi, Zhale Atoufi, , Seyed Kamran Kamrava, Payam Zarrintaj, Ghodratollah Hashemi Motlagh. synthesis of an injectable PNIPAAm scaffolds reinforced by

multifunctional alginate nanoparticles for cartilage regeneration. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.

12. Zohreh Bagher. Current application of tissue engineering and regenerative medicine in otolaryngology. The first international Iranian tissue engineering and regenerative medicine. 18-20 July. 2018(Oral presentation

Projects:

1. Synthesis of a biodegradable scaffold reinforced by multifunctional nanoparticles for nasal cartilage regeneration. Director, ENT and Head & Neck Research Center and Department. Iran University of Medical Sciences (IUMS), Tehran, Iran. , 2016 till now.

2. Preparation and characterization of injectable Chitosan Hydrogel for cartilage tissue engineering. Director, ENT and Head & Neck Research Center and Department. Iran University of Medical Sciences (IUMS), Tehran, Iran. 2016 till now.

3. Design and construct of biodegradable scaffold containing drug in allergic rhinosinusitis and chronic sinusitis with or without nasal polyps. Director, ENT and Head & Neck Research Center and Department. Iran University of Medical Sciences (IUMS), Tehran, Iran. , 2016 till now

4. Differentiation of olfactory stem cells into motor neuron-like cells on chitosan hydrogel scaffold. Colleague, Azad university of medical science, Tehran, Iran. 2016 till now.

5. Comparison of Capability of olfactory stem cells and Wharton's Jelly Mesenchymal Stem Cells Differentiate into Motor Neurons on Chitosan Hydrogel Scaffold. Colleague, Azad university of medical science, Tehran, Iran. , 2016 till now.

6. Differentiation of Mesenchymal Stem Cell Derived from Wharton's Jelly to Motor Neurons Using Poly caprolacton/Collagen nano and film Scaffolds. Colleague, Iran National Science Foundation (INSF) grant number 91002632, 2012-2014.

7. Differentiation of olfactory stem cells into dopaminergic neuron-like cells on chitosan hydrogel scaffold. Colleague, Azad university of medical science, Tehran, Iran. 2016 till now.

8. Comparison of Capability of olfactory stem cells and Wharton's Jelly Mesenchymal Stem Cells Differentiate into dopaminergic Neurons on Chitosan Hydrogel Scaffold. Colleague, Azad university of medical science, Tehran, Iran. , 2016 till now.

Positions and Memberships

Member of Iranian tissue engineering and regenerative medicine Committee

Member of Editorial Board of Journal of Applied Tissue Engineering

Member of scientific committee of third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine

Member of scientific neural panel of third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine

Member of scientific of first Iranian Annual Congress on nanomedicine