

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
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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)

Cell and Culture System Engineering

Stem Cell Engineering

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. Ebrahimi-Barough S, **Bagher Z**, Ai J, Rahbarghazi R, Hoveizi E. 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, 2016.
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;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 SolventCast Film Scaffolds. J Biomed Mater Res A. 2016;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;51(9):987-94.
5. Farokhi M, Sharifi S, Shafieyan Y, **Bagher Z**, Mottaghitalab 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, **Bagher Z**, Farokhi M, Shokrgozar MA. Comparative Study on Xnograf Saffold and Prous Hydroxyapatite/Tricalcium Phosphate for the Repair of Bony Defect. *Journal of Iranian Anatomical Sciences*.2011;9:23-32.
9. Atoufi Zh, Zarrintaj P, Hashemi Motlagh P, Amiri A, **Bagher Z**, Kamrava S K. 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;28(15):1617-1638.
10. **Bagher Z**, KamravaS K, Alizadeh R, Farhadi M, Absalan M, Falah M, Faghihi F, Zare-Sadeghi A, Komeili A. Differentiation of neural crest stem cells from nasal mucosa into motor neuron-like cells. *J Chem Neuroanat*.2018;92:35-40.
11. Salehi M, **Bagher Z**, Kamrava S K, Ehterami A, Alizadeh R, Farhadi M, Falah M, Komeili A. Alginate/chitosan hydrogel containing olfactory ectomesenchymal stem cells for sciatic nerve tissue engineering. *J Cell Physiol*. 2019.
12. **Bagher Z**, Atoufi Zh, Alizadeh R, Farhadi M, Zarrintaj P, Moroni L, Setayeshmehr M, KomeiliA, Kamrava S K. 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;101:243-253.
13. Alizadeh R, **Bagher Z**, Kamrava S K, Falah M, Ghasemi Hamidabadi H, Eskandarian Boroujeni M, Mohammadi F, Khodaverdi S, Zare-Sadeghi A, Olya A, Komeili A. 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;96:126-133.
14. Alizadeh R, Kamrava S K, **Bagher Z**, Farhadi M, Falah M, Moradi F, Eskandarian Boroujeni M, Soleimani M, Kamyab A, Komeili A. Human olfactory stem cells: As a promising source of dopaminergic neuron-like cells for treatment of Parkinson's disease. *Neurosci Lett*.2019;696:52-59.
15. Alizadeh R, Zarrintaj P, Kamrava S K, **Bagher Z**, Farhadi M, Heidari F, Komeili A, Gutiérrez T J, Saeb M. Conductive hydrogels based on agarose/alginate/chitosan for neural disorder therapy. *Carbohydr Polym* .2019;224:115161.

16. Atoufi Zh, Kamrava S K, Davachi S, Hassanabadi M, Saeedi Garakani S, Alizadeh R, Farhadi M, Tavakol Sh, **Bagher Z**, Hashemi Motlagh Gh. Injectable PNIPAM/Hyaluronic acid hydrogels containing multipurpose modified particles for cartilage tissue engineering: Synthesis, characterization, drug release. *Int J Biol Macromol.*2019;139:1168-1181.
17. Falah M, Houshmand M, Balali M, Asghari A, **Bagher Z**, Alizadeh R, Farhadi M. Role of GJB2 and GJB6 in Iranian Nonsyndromic Hearing Impairment: From Molecular Analysis to Literature Reviews. *Fetal Pediatr Pathol.*2020;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;234(8):14246-14258.
19. **Bagher Z**, Ehterami A, Safdel M, Khastar H, Semiari H, Asefnejad A, Davachi S M, Mirzaii M, Salehi M. Wound healing with alginate/chitosan hydrogel containing hesperidin in rat model. *Journal of Drug Delivery Science and Technology.*2020; 55,101379.
20. Saeedi Garakani S, Khanmohammadi M, Atoufi Zh, Kamrava S K, Setayeshmehr M, Alizadeh R, Faghihi F, **Bagher Z**, Davachi S M, Abbaspourrad A. Fabrication of chitosan/agarose scaffolds containing extracellular matrix for tissue engineering applications. *Int J Biol Macromol.*2020;143:533-545.
21. Khanmohammadi M, Zolfagharzadeh V, **Bagher Z**, Soltani H, Ai J. Cell encapsulation in core-shell microcapsules through coaxial electrospinning system and horseradish peroxidase –catalyzed crosslinking. *Biomed Phys Eng Express .* 2020;6(1):015022.
22. **Bagher Z**, Asgari N, Bozorgmehr P, Kamrava S K, Alizadeh R, Seifalian S. 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. **Bagher Z**, Ehterami A, Nasrolahi M, Azimi M, Salehi M. 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. Ziloochi Kashani M, **Bagher Z**, Asgari H, Najafi M, Koruji M, Mehraein F. Differentiation of neonate mouse spermatogonial stem cells on three dimensional Agar / poly vinyl Alcohol nanofiber scaffold. *Syst Biol Reprod Med.*2020;66(3):202-215.

25. Karimi S, **Bagher Z**, Najmoddin N, Simorgh S, Pezeshki-Modaress M. Alginatemagnetic short nanofibers 3D composite hydrogel enhances the encapsulated human olfactory mucosa stem cells bioactivity for potential nerve regeneration application. *Int J Biol Macromol.*2021;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.
28. Ghasemi Hamidabadi H, Simorgh S, Kamrava S K, Namjoo Z, **Bagher Z**. 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;405:113205.
29. Hassanzadeh S, Jalessi M, Jameie S B, Khanmohammadi M, **Bagher Z**. et al. More attention on glial cells to have better recovery after spinal cord injury. *Biochem Biophys Rep* 2021;25:100905.
30. Farhadi M, Eskandarian Boroujeni M, Kamrava S K, **Bagher Z**. Implantation of human olfactory ecto-mesenchymal stem cells restores locomotion in a rat model of Parkinson's disease. *J Chem Neuroanat*. 2021;114:101961.
31. Salehi Moghaddam A, Khonakdar H A, Arjmand M, Jafari S H, **Bagher Z**. 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. 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.

35. Alizadeh R, Eskandarian Boroujeni M, Kamrava S K, Modirzadeh Tehrani A, **Bagher Z.** 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
36. Aleemardani M, **Bagher Z** , Farhadi M, Chahsetareh H, Najafi R, Eftekhari B, Seifalian A. Can TissueEngineering Bring Hope to the Development of Human Tympanic Membrane?.Tissue Eng Part B Rev. 2021
37. 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.
38. Najafloo, R., Majidi, J., Asghari, A., (...), Bagher, Z., Seifalian, A.M. Mechanism of Anosmia Caused by Symptoms of COVID-19 and Emerging Treatments .ACS Chem Neurosci. 2021; 12(20): 3795–3805.
39. Bagheri, S., Bagher, Z., Hassanzadeh, S., (...), Jalessi, M., Khanmohammadi, M. Control of cellular adhesiveness in hyaluronic acid-based hydrogel through varying degrees of phenol moiety cross-linking. Journal of Biomedical Materials Research - Part A.2021; 109(5), pp. 649-658.

Congress:

- 1- **Bagher Z**, 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; 2015.
- 2- **Bagher Z**, 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; 2015 3-
- 4- **Bagher Z**, 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; 2015.
6. **Bagher Z**, 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; 2015.
7. **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).
 8. **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).
 9. **Bagher Z**, Kamrava S K, Komeili A, Alizadeh R. 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.
 10. **Bagher Z**, Zarrintaj P, Salehi Moghadam A, Alizadeh R, Komeili A, S K Kamrava. Synthesis of conductive hydrogel based on gelatinaniline pentamer/chitosan for neural tissue engineering. The third Iranian Annual Congress on Progress in Tissue Engineering and Regenerative Medicine; 2016.
 11. Amirí A, Zarrintaj P, Atoufi Zh, Hashemi Motlagh Gh, **Bagher Z**. 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.
 12. Atoufi Zh, Zarrintaj P, Amirí A, Hashemi Motlagh Gh, **Bagher Z**, Atoufi Zh. 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.
 13. Atoufi Zh, **Bagher Z**, Seyed Kamran Kamrava, Payam Zarrintaj, Hashemi Motlagh Gh. 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.
 14. **Bagher Z**, Current application of tissue engineering and regenerative medicine in otolaryngology. The first international Iranian tissue engineering and regenerative medicine; 2018(Oral).
 15. Zare P, Rashedi H, **Bagher Z**. Study the effect of polymer concentration on Kartogenin's encapsulation efficiency and effect of surfactant in accelerating release

profile. International Congress on Science & Engineering, University of Tokyo, Japan ; 2019.(Oral).

16. **Bagher Z.** Optimization characteristics of polymeric scaffold for cartilage tissue engineering application. 12th International Conference on Engineering and Technology, Norway; 2019. (Oral).
17. Saidi S, Alizadeh R, **Bagher Z**, Kamrava S K. Design and characterization of novel scaffold based on chitosan containing EM. 4th Iranian congress on progress in meeting tissue engineering and regenerative medicine; 2018.
18. Zare P, **Bagher Z**, Rashedi H. Investigation of Kartogenin release from PLGA microspheres by in situ and external sink method. 13th International Conference on Engineering And Technology, Norway; 2019.

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

Patent:

Amini E, **Bagher Z**, Alizade R, Jalesi M, Hoseini S F, Farhadi M, Kamrava S K.
“Localization of Smell Sniffin' Stick test ”, 985352019, Tehran, Iran, 12May-2019.