

Curriculum Vitae

Date of Revision: 19 November 2024

Name: Asieh Heirani-Tabasi

Education:

B.Sc. in General Biology

Sep 2005 – June 2009

Ferdowsi University of Mashhad – Mashhad, Iran.

M.Sc. in Cellular and Molecular Biology

Sep 2010 – Dec 2012

Ferdowsi University of Mashhad – Mashhad, Iran.

Thesis: Investigation the pattern of gene expression for two variants of *CXCR4* in adipose-derived mesenchymal stem cells

Ph.D. in Applied Cell Sciences

Sep 2016 – July 2021

Tarbiat Modares University (TMU) – Tehran, Iran

- Ranked **First** among the TMU Applied Cell Sciences students in years 2016 and 2017

Thesis: Cartilage tissue engineering by co-transplantation of chondrocyte extracellular vesicles and adipose-derived mesenchymal stem cells, entrapped in chitosan-hyaluronic acid hydrogel

Academic appointments:

Lead researcher

April 2017 – February 2024

Research Center for Advanced Technologies in Cardiovascular Medicine, Cardiovascular Diseases, Research Institute, Tehran University of Medical Sciences, Tehran, Iran

Research Associate

July 2020 - February 2024

Colorectal Surgery Research Center, Imam Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran

Assistant Professor

February 2024 - Current

Department of Tissue Engineering and Applied Cell Sciences, School of Advanced Technologies in Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Administrative positions:

Lab technician/ May 2010 – August 2011/ Dr. Amini clinical Laboratory, Mashhad, Iran

Research Officer (Molecular lab manager)/ September 2014 – April 2017/ Iranian Academic Center for Education, Culture and Research (ACECR), Mashhad, Iran

Grant History:

- 1- Iranian Council of Stem Cell science and Technology, Ferdowsi University of Mashhad, *Homing of mesenchymal stem cells (MSCs) towards the modelled injury site, Joint project* , Associate Investigator 2011 (3 years)
- 2- Academic Center for Education, Culture and Research, *Analysis of Chemokine Receptor Gene Expression in Esophageal Cancer Cells Compared with Breast Cancer with Insights into Metastasis*, Joint project Associate Investigator 2015 (1 year)
- 3- Mashhad University of Medical Sciences /Academic Center for Education, Culture and Research, *The therapeutic effect of autologous bone marrow MSCs for the prevention of chronic graft nephropathy*, Joint project, Associate Investigator 2015 (3 years)
- 4- Academic Center for Education, Culture and Research/ Royan institute, *Investigating the effect of hypoxia and laser on muscle cells*, Joint project, Associate Investigator 2015 (2 years)
- 5- Iranian Council of Stem Cell science and Technology, Tarbiat Modares University, *Injection of adipose derived mesenchymal stem cells treated with chondrocyte-derived extracellular vesicles in chitosan-hyaluronic acid hydrogel to treat knee defect in rabbit model*, Ph.D. project, Chief Investigator 2019 (2 years)
- 6- Tehran University of Medical Sciences , *Safety of Injection of Human Placenta Mesenchymal Stem Cells Derived Exosomes for Repair of Anal Fistula in Patients With refractory perianal Crohn's Disease*, Joint project, Associate Investigator 2020 (2 years)

Lectures:

- 1- ASCRS 2024 Annual Scientific Meeting Abstract, June 1-4 2024, Baltimore, USA. (Oral presentation).“ Localized administration of mesenchymal stem cell-derived exosomes for treatment of refractory perianal fistula in Crohn's disease patients: Phase-II Clinical Trial”

Reza Akbari Asbagh, Foroogh Alborzi Avanaki, Asieh Heirani-Tabasi, Alireza Hadizadeh, ..., Seyed Mohsen Ahmadi Tafti.

- 2- The First International Iranian Tissue Engineering and Regenerative Medicine Congress, 18 July, 2018, Tehran, Iran (Oral presentation). "Targeted delivery of stem cells to ischemic myocardium using controllable microbubble carriers". Asieh Heirani-Tabasi - Mohammad Adel Ghiass - Mina Soufi Zomorrod - Shahram Rabbani.
- 3- The 28th Great Wall International Congress of Cardiology China Heart Society Beijing Society of Cardiology (Journal of the American College of Cardiology, DOI: 10.1016/j.jacc.2017.07.594) GW28-e0659 "Regenerative rehabilitation: a hybrid strategy for heart disease." Marzieh Saeidi, Asieh Heirani-Tabasi, Masoud Soleimani.

Journal services (as reviewer):

Journal of Nanobiotechnology (IF: 10.2 / Q1)

The effects of exosomes originating from different cell sources on the differentiation of bone marrow mesenchymal stem cells into Schwann cells (2024)

Journal of Frontiers in Pharmacology (IF: 5.6 / Q1)

Tetramethylpyrazine: A Review of Its Antitumor Potential and Mechanisms

Published on 16 Dec 2021

Committees Memberships:

Member of the Research Council of the Student Research and Technology Committee of Shahid Beheshti University of Medical Sciences (May 2024-current)

Bibliography:

1. Hadizadeh, Alireza, Reza Akbari-Asbagh, Asieh Heirani-Tabasi, Masoud Soleimani, Parastou Gorovanchi, Nasser Ebrahimi Daryani, Amir Vahedi et al. "Localized Administration of Mesenchymal Stem Cell-Derived Exosomes for the Treatment of Refractory Perianal Fistula in Crohn's Disease Patients: A Phase II Clinical Trial." *Diseases of the Colon & Rectum*: 10-1097.
2. Ashouri Sharafshadeh, Sina, Rouhollah Mehdiavaz Aghdam, Parisa Akhlaghi, and Asieh Heirani-Tabasi. "Amniotic membrane/silk fibroin-alginate nanofibrous scaffolds containing Cu-based metal organic framework for wound dressing." *International Journal of Polymeric Materials and Polymeric Biomaterials* (2024): 1-12.

3. Pak, H., Hadizadeh, A., Heirani-Tabasi, A., Soleimani, M., Asbagh, R. A., Fazeli, M. S., ... & Behboudi, B. (2023). Safety and efficacy of injection of human placenta mesenchymal stem cells derived exosomes for treatment of complex perianal fistula in non-Crohn's cases: clinical trial phase I. *Journal of Gastroenterology and Hepatology*, 38(4), 539-547.
4. Toosi, Shirin, Hojjat Naderi-Meshkin, Ali Moradi, Mahla Daliri, Vahid Moghimi, Hasan-Mehrad Majd, Amir Hossein Sahebkar, Asieh Heirani-Tabasi, and Javad Behravan. "Scaphoid Bone Nonunions: Clinical and Functional Outcomes of Collagen/PGA Scaffolds and Cell-Based Therapy." *ACS Biomaterials Science & Engineering* 9, no. 4 (2023): 1928-1939.
5. Akbari, S., S. M. Hamidi, H. Eftekhari, and A. Heirani-Tabasi. "Fast electro-plasmonic detection of heart signal in Balb/C cells onto one-dimensional plasmonic grating." *Plos one* 18, no. 3 (2023): e0282863.
6. Ebrahim Soltani, Zahra, Mohammad Elahi, Hasti Tashak-Golroudbari, Hojjatollah Nazari, Abolfazl Badripour, Asieh Heirani-Tabasi, Reza Akbari Asbagh et al. "Evaluation of colonic anastomosis healing using hybrid nanosheets containing molybdenum disulfide (MOS₂) scaffold of human placental amniotic membrane and polycaprolactone (PCL) in rat animal model." *Naunyn-Schmiedeberg's Archives of Pharmacology* (2023): 1-11.
7. Tashak Golroudbari, Hasti, Seyedeh Parnian Banikarimi, Aryan Ayati, Alireza Hadizadeh, Zahra Khorasani Zavareh, Kiana Hajikhani, Asieh Heirani-Tabasi, Mohsen Ahmadi Tafti, Saeed Davoodi, and Hossein Ahmadi Tafti. "Advanced micro-/nanotechnologies for exosome encapsulation and targeting in regenerative medicine." *Clinical and Experimental Medicine* (2023): 1-22.
8. Dorkhani, Erfan, Yasmin Noorafkan, Zeinab Salehi, Mohammad Adel Ghiass, Seyed Hossein Ahmadi Tafti, Asieh Heirani-Tabasi, and Maryam Tavafoghi. "Design and fabrication of polyvinylidene fluoride-graphene oxide/gelatine nanofibrous scaffold for cardiac tissue engineering." *Journal of Biomaterials Science, Polymer Edition* (2022): 1-22.
9. Dorkhani, Erfan, Yasmin Noorafkan, Reza Akbari Asbagh, Maryam Okhovat, Asieh Heirani-Tabasi, and Seyed Mohsen Ahmadi Tafti. "Design and fabrication of modified bi-layer poly vinyl alcohol adhesive sealant film for preventing gastrointestinal leakage." *Frontiers in Surgery* 9 (2022): 1018590.
10. Nazari, Hojjatollah, Foroogh Alborzi, Asieh Heirani-Tabasi, Alireza Hadizadeh, Reza Akbari Asbagh, Behnam Behboudi, Mohammad Sadegh Fazeli et al. "Evaluating the

safety and efficacy of mesenchymal stem cell-derived exosomes for treatment of refractory perianal fistula in IBD patients: clinical trial phase I." *Gastroenterology Report* 10 (2022): goac075.

11. Nazari, H., Heirani-Tabasi, A., Esmaceli, E., Kajbafzadeh, A.M., Hassannejad, Z., Boroomand, S., Shahsavari Alavijeh, M.H., Mishan, M.A., Ahmadi Tafti, S.H., Warkiani, M.E. and Dadgar, N., 2022. Decellularized human amniotic membrane reinforced by MoS₂-Polycaprolactone nanofibers, a novel conductive scaffold for cardiac tissue engineering. *Journal of Biomaterials Applications*, p.08853282211063289.
12. Nazari, H., Heirani-Tabasi, A., Ghorbani, S., Eyni, H., Razavi Bazaz, S., Khayati, M., Gheidari, F., Moradpour, K., Kehtari, M., Ahmadi Tafti, S.M. and Ahmadi Tafti, S.H., 2022. Microfluidic-Based Droplets for Advanced Regenerative Medicine: Current Challenges and Future Trends. *Biosensors*, 12(1), p.20.
13. Heirani-Tabasi, A., Hosseinzadeh, S., Rabbani, Sh., Ahmadi Tafti, H., Jamshidi, Kh., Soufizomorrod, M., and Soleimani, M., (2021). Cartilage tissue engineering by co-transplantation of chondrocyte extracellular vesicles and mesenchymal stem cells, entrapped in chitosan-hyaluronic acid hydrogel . *Biomedical Materials*, IOP publishing group, 16 055003, DOI: 10.1088/1748-605X/ac0cbf.
14. Bidkhorri, H.R., Bahrami, A.R., Farshchian, M., Heirani-Tabasi, A., Mirahmadi, M., Hassanzadeh, H., Ahmadiankia, N., Faridhosseini, R., Dastpak, M., Gowhar Shabgah, A., and Matin, M.M. (2021). Mesenchymal stem/stromal cells overexpressing CXCR4R334X revealed enhanced migration: a lesson learned from the pathogenesis of WHIM syndrome. *Cell Transplantation*, Sage publishing group.
15. Nazari, H., Yaghoubi Naei, V., Heirani-Tabasi, A., Badripour, A., Akbari Asbagh, R., Keramati, M.R., Sharif, A., Behboudi B., Kazemeini, A., Abbasi, M., Keshvari A., Ahmadi-Tafti, S.M., (2021). Advanced Regenerative Medicine Strategies for Treatment of Perianal Fistula in Crohn's Disease. *Inflammatory bowel diseases*, DOI: 10.1093/ibd/izab151.
16. Heirani-Tabasi, A., Mirahmadi, M., Mishan, M.A., Naderi-Meshkin, H., Toosi, S., Matin, M.M., Bidkhorri, H.R. and Bahrami, A.R., (2020). Comparison the effects of hypoxia-mimicking agents on migration-related signaling pathways in mesenchymal stem cells. *Cell and Tissue Banking*, pp 643-653.
17. Nazari, H., Heirani-Tabasi, A., Hajiabbas, M., Salimi Bani, M., Nazari, M., Pirhajati Mahabadi, V., Rad, I., Kehtari, M., Ahmadi Tafti, S.H. and Soleimani, M., (2020). Incorporation of SPION-casein core-shells into silk-fibroin nanofibers for cardiac tissue engineering. *Journal of Cellular Biochemistry*, 121(4), pp.2981-2993.

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19. Nazari, H., Heirani-Tabasi, A., Alavijeh, M.S., Jeshvaghani, Z.S., Esmaeili, E., Hosseinzadeh, S., Mohabatpour, F., Taheri, B., Tafti, S.H.A. and Soleimani, M., (2019). Nanofibrous Composites Reinforced by MoS₂ Nanosheets as a Conductive Scaffold for Cardiac Tissue Engineering. *ChemistrySelect*, 4(39), pp.11557-11563.
20. Toosi, S., Esmaeilzadeh, Z., Naderi-Meshkin, H., Heirani-Tabasi, A., Peivandi, M.T. and Behravan, J., (2019). Adipocyte lineage differentiation potential of MSCs isolated from reaming material. *Journal of cellular physiology*, 234(11), pp.20066-20071.
21. Toosi, S., Naderi-Meshkin, H., Kalalinia, F., HosseinKhani, H., Heirani-Tabasi, A., Havakhah, S., Nekooei, S., Jafarian, A.H., Rezaie, F., Peivandi, M.T. and Mesgarani, H., (2019). Bone defect healing is induced by collagen sponge/polyglycolic acid. *Journal of Materials Science: Materials in Medicine*, 30(3), p.33.
22. Heirani-Tabasi A., Naderi-Meshkin H., Matin MM., Mirahmadi M., Shahriyari M., Ahmadiankia N., Sanjar Moussavi N., Bidkhorji H.R., Raesolmohaddesin M. Bahrami AR (2018). Augmented migration of mesenchymal stem cells correlates with the subsidiary CXCR4 variant. *Cell Adhesion & Migration journal*. Feb 22:1-9. doi: 10.1080/19336918.2016.1243643.
23. Heirani-Tabasi A., Toosi S., Mirahmadi M., Mishan M.A., Bidkhorji H.R., Bahrami A.R., Behravan J., Naderi-Meshkin H. (2017). Chemokine Receptors Expression in MSCs: Comparative Analysis in Different Sources and Passages. *Tissue Engineering and Regenerative Medicine (TERM) journal*. Oct;14(5):605-615. doi: 10.1007/s13770-017-0069-7
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25. Naderi-Meshkin, H., Matin, M.M., Heirani-Tabasi, A., Mirahmadi, M., Irfan-Maqsood, M., Edalatmanesh, M.A., Shahriyari, M., Ahmadiankia, N., Moussavi, N.S., Bidkhorji, H.R. and Bahrami, A.R., (2016). Injectable hydrogel delivery plus preconditioning of mesenchymal stem cells: exploitation of SDF-1/CXCR4 axis toward enhancing the efficacy of stem cells' homing. *Cell biology international*, 40(7), pp.730-741.

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28. Toosi, S., Naderi-Meshkin, H., Kalalinia, F., Peyvandi, M. T., HosseinKhani, H., Bahrami, A. R., Heirani-Tabasi, A., Mirahmadi, M. and Behravan, J. (2016). Comparative Characteristics of Mesenchymal Stem Cells Derived From Reamer-Irrigator-Aspirator, Iliac Crest Bone Marrow, and Adipose Tissue. *Cellular & Molecular Biology*, 62 (10): 68-74.
29. Bidkhorji, H.R., Ahmadiankia, N., Matin, M.M., Heirani-tabasi, A., Farshchian, M., Naderi-meshkin, H., Shahriyari, M., Dastpak, M. and Bahrami, A.R., (2016). Chemically primed bone-marrow derived mesenchymal stem cells show enhanced expression of chemokine receptors contributed to their migration capability. *Iranian journal of basic medical sciences*, 19(1), p.14.
30. Toosi, S., Naderi-Meshkin, H., Kalalinia, F., Peivandi, M.T., HosseinKhani, H., Bahrami, A.R., Heirani-Tabasi, A., Mirahmadi, M. and Behravan, J., (2016). PGA-incorporated collagen: Toward a biodegradable composite scaffold for bone-tissue engineering. *Journal of Biomedical Materials Research Part A*, 104(8), pp.2020-2028.
31. Boozarpour, S., Matin, M.M., Momeni-Moghaddam, M., Dehghani, H., Mahdavi-Shahri, N., Sisakhtnezhad, S., Heirani-Tabasi, A., Irfan-Maqsood, M. and Bahrami, A.R., (2016). Glial cell derived neurotrophic factor induces spermatogonial stem cell marker genes in chicken mesenchymal stem cells. *Tissue and Cell*, 48(3), pp.235-241.
32. Mishan, M. A., Heirani-Tabasi, A., Mokhberian, N., Hassanzade, M., Moghaddam, H. K., Bahrami, A. R. and Ahmadiankia, N. (2015). Analysis of Chemokine Receptor Gene Expression in Esophageal Cancer Cells Compared with Breast Cancer with Insights into Metastasis. *Iranian Journal of public health*, 44(10): 1353.
33. Mishan, M. A., Ahmadiankia, N., Matin, M. M., Heirani-Tabasi, A., Shahriyari, M., Bidkhorji, H. R., Naderi-Meshkin, H. and Bahrami, A. R. (2015). Role of Berberine on molecular markers involved in migration of esophageal cancer cells. *Cellular & Molecular Biology*, 61(8): 37-43.