

# Dr. Sarah Rajabi

Department of Cell Engineering, Cell Science Research Center, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran

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ORCID iD: <https://orcid.org/0000-0001-9939-1504>

## EDUCATION

- 2009-20014 - Ph.D. in Cell & Developmental Biology, “Kharazmi University, Tehran, Iran. Average Grade: 19.17/20 (3.83/4)
- 2006-2008 - Master of Science in Developmental Biology, “Kharazmi University, Tehran, Iran. Average Grade: 18.99/20 (3.8/4)
- 2001-2005 - Bachelor of Science in Biology, “Payame Noor University, Sari, Iran. Average: Grade: 17.66/20 (3.53/4)



## PROFESSIONAL PROFILE

- A highly qualified and experienced academic with more than ten years of teaching and research experience.
- A well-established researcher with impressive achievements:
  - ✓ 50 Peer-reviewed journal papers
  - ✓ 10 Peer-reviewed conference papers
  - ✓ 4 Provisional patent applications
- A highly innovative researcher, known for a combination of focused stem cell biology and tissue engineering
- Strong background in Project Planning and Research.

## AREAS OF EXPERTISE / RESEARCH INTEREST

- Stem cell biology
- Tissue engineering
- Cardiovascular regeneration
- Wound dressing
- Skeletal muscle tissue engineering
- ECM-based hydrogel
- Natural scaffold synthesis
- Biomaterials
- Bioengineering
- Organoids

## PERSONAL ATTRIBUTES

- Highly innovative in experimental design and fundamental research
- Strong academic leadership
- Exemplary work ethic; diligent and hardworking
- Excellent written and verbal communication skills including presentation skills
- Detail oriented with strong analytical and problem-solving skills
- Ability to work well in a team or independently with minimal supervision
- Dynamic, adaptable, and resourceful

## PROFESSIONAL EMPLOYMENTS

- Associate professor, Department of Cell Engineering, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran, March. 2022-present.

- Assistance professor, Department of Cell Engineering, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran, Feb. 2016-March 2022.
- Postdoctoral Research Fellow on Bioengineering, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran, 2014-2016.
- Research Assistant, Department of Stem Cells and Developmental Biology, Royan Institute for Stem Cell Biology and Technology, ACECR, Tehran, Iran, 2010- 2015.
- Research assistant, Cellular and Molecular Lab of Urology and Nephrology Research Center (UNRC), Shahid Beheshti University of Medical Sciences, Tehran, Iran, 2009-2010.

## ACADEMIC EMPLOYMENT (Research and Teaching)

### Royan Institute// 2014-present

- Teaching courses related to developmental biology, stem cells, and tissue engineering
- Undertake and contribute to research, conducting individual research or collaborating with others in:
  - 3D-Prevascularisation; A Novel Method to Mimic the Organ's Circulatory System (project leader)
  - Controlled and localized delivery of miRNA/anti-miRNA from injectable hydrogel to improvement of myocardial infarction
  - The impact of human fetal pancreatic-derived mesenchymal stem cells contribution to pancreatic organoid-like structure formation and its further development
  - Fabrication of complementary oxygen-generating and angiogenic dual system for heart tissue engineering
  - Design, synthesis, and therapeutic efficacy of a novel full-Interpenetrated thermogelling injectable hydrogel as a scaffold for cardiac tissue engineering.
  - Designing and Fabrication of gelatin/chitosan/chondroitin sulfate nanofibrous scaffolds for skin tissue engineering using an electrospinning process
  - Development of a bioprinting platform for the reconstruction of a human beating heart tube

### Key Achievements

- Successfully published 50 journal papers, 10 conference papers, and 4 provisional patent applications, secured \$1 m research and infrastructure funding both as lead chief investigator or chief investigator and management of > 5 research projects.

## UNIVERSITY LECTURER

The Azad University of Tehran Markaz and Mazandaran University, Iran // 2008 – 2018

- Lectured subject's appropriate teaching, learning support, and assessment methods and technologies; ensured that teaching activity was of high quality.
- Assessed the work and progress of students and provided them with constructive feedback.

### Courses Taught

- |                         |                            |
|-------------------------|----------------------------|
| • Tissue engineering    | • Stem cell culture        |
| • Developmental biology | • Biocompatibility         |
| • 2D and 3D culture     | • Histology and Laboratory |

## SUPERVISION

### Ph.D. Students

- M. Mohammadi: Ph.D. in Tissue Engineering | Thesis: 3D-printing organic/non-organic nanocomposite for cardiac tissue engineering application// 2022-current
- H. Amiri Haydary: Ph.D. in Tissue Engineering | Thesis: Fabrication and evaluation of nanofibrous artificial vessel based on surface-modified polyurethane with alginate sulfate// 2019-current
- S. Erfanian: Ph.D. in Tissue Engineering | Thesis: Decellularized Skeletal Muscle- Sponge Scaffold Modified by Platelet-Rich Plasma (PRP) for Skeletal Muscle Regeneration// 2020-current
- M. Ebadi: Ph.D. in Tissue Engineering | Thesis: Cementum Tissue engineering on titanium surface coated or non-coated with bioactive glass nanoparticles using stem cells derived from human 3rd molar root // 2023.

### Master Students

- M. Niazi: Masters by research in Genetics | Thesis: The study of biocompatibility and myogenesis potential of mesenchymal conditioned medium enriched skeletal muscle-derived injectable hydrogel: an in vitro study (2022 – current), Thesis submitted.
- R. Rafieyan: Masters by research in Genetics | Thesis: the study of safety and angiogenic potential of cardiac hydrogel enriched with hypoxic conditioned medium derived from mesenchymal stem cells (2022-current). Thesis submitted.
- F. Hosseini: Masters by research in Genetics | Thesis: Study of MSC-GFP+ localization and fate in cardiac micro-tissue (2022- current). Thesis submitted.
- SH. Abdi: Masters by research in Developmental Biology | Thesis: The Effect of Hydrogel Derived from Decellularized Murine Renal Papilla on Proliferation and Differentiation of Mouse Renal Clonal Epithelial Stem Cells (2023).
- H. Khodayari: Masters by research in Developmental Biology | Thesis: The study of biocompatibility and angiogenic potential of recombinant G-CSF enriched cardiac muscle-derived injectable hydrogel: an in vitro study (2023).
- M. Parchehbaf Kashani: Masters by coursework in developmental Biology | Thesis: The production of an electroconductive cardiac reconstructive model to investigate electrophysiological behaviors of cardiomyocytes (2020)
- Sh. Rashidi: Masters by research in polymer Engineering | Thesis: Fabrication and characterization of artificial nanofibrous vascular grafts based on polycaprolactone (PCL). 2020.
- Z. Mirza Ahmadi: Masters by research in Developmental Biology | Thesis: Production of decellularized skeletal muscle-derived hydrogel containing 5-azacytidine for skeletal Muscle regeneration (2020).
- S. Hosseini: Masters by research in polymer Engineering | Thesis: Synthesis of Supramolecular Alginate-based Polyurethanes and Investigation of their Application as a Wound Dressing (2018).
- M. Tamimi: Masters by research in Biomedical Engineering | Thesis: The fabrication of porous scaffold from decellularized ECM, Alginate, and chitosan for cardiac tissue engineering.2018
- Kh. Baaji: Masters by research in Material Engineering Thesis: Fabrication and characterization of scaffold based on aorta ECM for tissue engineering application. 2018.
- A. Mostafavi: Masters by research in Developmental Biology| Thesis: Synthesis and characterization of polyurethane elastomers modified with sulfated alginate for vascular tissue engineering. 2017

### University Staff

- Roghayeh Hamidi: Research associate (2022-current)

### REGISTERED PATENTS

- Aorta extracellular matrix-derived hydrogel and preparation methods. I. R. I. Patent # 100098, 2020.
- Preparation of alginate-based polyurethane scaffolds in tissue engineering applications. I. R. I. Patent # 86767, 2016.

- Fabrication of muscle sponge scaffold from muscle tissue for tissue engineering applications. I.R.I. Patent # 84145, 2014.
- Fabrication of pericardium sponge scaffold from human pericardium membrane. I. R.I. Patent # 80008, 2013.

## PUBLICATIONS

More than 40 journal Papers in leading international peer-reviewed journals and 10 peer-reviewed conference papers, h-index = 20, & i10-index = 25 ( <https://scholar.google.com/citations?user=kqqQJ1gAAAAJ&hl=en>).

## JOURNAL PAPERS

- Isolation and characterization of apical papilla cells from root end of human third molar and their differentiation into cementoblast cells: an in vitro study. Morvarid Ebadi, Amirfarhang Miresmaeili, Shahrokh Shojaei, Sareh Farhadi, **Sarah Rajabi**. Biological Procedures Online. 2023. V:52:2. P:1-11.
- 5-Azacytidine incorporated skeletal muscle-derived hydrogel promotes rat skeletal muscle regeneration. Behnaz Mirza Ahmadi, Afshin Noori, Mohammad Kazemi Ashtiani, **Sarah Rajabi**, Mahmood Talkhabi. Cells & Development. 2023. V:173. P: 203826.
- Hybrid gelatin-sulfated alginate scaffolds as dermal substitutes can dramatically accelerate the healing of full-thickness diabetic wounds. Amin Sadeghi, Maryam Zare-Gachi, Mostafa Najjar-Asl, **Sarah Rajabi**, Mohammad Javad Fatemi, Siamak Farokh Forghani, Hamed Daemi, Mohamad Pezeshki-Modaress. Carbohydrate Polymers. 2023. V:302. P: 120404.
- Three-dimensional biomimetic reinforced chitosan/gelatin composite scaffolds containing PLA nano/microfibers for soft tissue engineering application .Fatemeh Eftekhari-Pournigjeh, Mahdi Saeed, **Sarah Rajabi**, Maryam Tamimi, Mohamad Pezeshki-Modaress. International Journal of Biological Macromolecules. 2023. V:225. P:1028-1037.
- An aorta ECM extracted hydrogel as a biomaterial in vascular tissue engineering application. Khadijeh Baaji, Mohamad Pezeshki-Modaress, **Sarah Rajabi**. Progress in Biomaterials. 2022.V:11. P:207-211.
- SDF-1 $\alpha$  loaded bioengineered human amniotic membrane-derived scaffold transplantation in combination with hyperbaric oxygen improved diabetic wound healing. Davood Nasiry, Ali Reza Khalatbary, Mohammad-Amin Abdollahifar, Mohammad Bayat, Abdollah Amini, Mohammad Kazemi Ashtiani, **Sarah Rajabi**, Afshin Noori, Abbas Piryaee. Journal of Bioscience and Bioengineering. 2022. V:133. P:489-501.
- Human amniotic membrane extracellular matrix scaffold for dental pulp regeneration in vitro and in vivo. Hengameh Bakhtiar, Azin Ashoori, **Sarah Rajabi**, Mohamad Pezeshki-Modaress, Alireza Ayati, Mohammad Reza Mousavi, Mohammad Reza Ellini, Amir Kamali, Amir Azarpazhooh, Anil Kishen. International Endodontic Journal. 2022. V:55. P:374-390.
- Shape memory injectable cryogel based on carboxymethyl chitosan/gelatin for minimally invasive tissue engineering: In vitro and in vivo assays. Shadab Bagheri-Khoulenjani Nafiseh Olov, Hamid Mirzadeh, Roshanak Moradi, **Sarah Rajabi**. Journal of Biomedical Materials Research Part B: Applied Biomaterials. 2022. V:110. P: 2438-2451.
- Fabrication and In Vitro Evaluation of A Chondroitin Sulphate-Polycaprolactone Composite Nanofibrous Scaffold for Potential Use in Dermal Tissue Engineering. Mohamad Pezeshki-Modaress, Mohadeseh Akbarzadeh, Dariush Ebrahimibagha, Mojgan Zandi, Tayyeb Ghadimi, Amin Sadeghi, **Sarah Rajabi**. Cell Journal (Yakhteh). 2022. V: 24(1). P:36–43.
- Heart Repair Induced by Cardiac Progenitor Cell Delivery within Polypyrrole-Loaded Cardiogel Post-ischemia. Melika Parchehbaf-Kashani, Hassan Ansari, Elena Mahmoudi, Maryam Barekat, Mohammadmajid Sepantafar, **Sarah Rajabi\***, Sara Pahlavan. ACS Applied Bio Materials. 2021. V:4. P: 4849–4861.
- Oxygen-rich Environment Ameliorates Cell Therapy Outcomes of Cardiac Progenitor Cells for Myocardial Infarction. Leila Montazeri, Reza Kowsari-Esfahan, Sara Pahlavan, Motahareh Sobat, Shahram Rabbani, Hassan Ansari, Fahimeh Varzideh, Maryam Barekat, **Sarah Rajabi**, Fatemeh Navaee, Shahin Bonakdar, Philippe Renaud, Thomas Braun, Hossein Baharvand. Materials Science and Engineering: C. 2021. V:121. P: 111836.
- Highly tough and ultrafast self-healable dual, crosslinked sulfated alginate-based polyurethane elastomers for engineering vascular tissue. Azadeh Mostafavi, Hamed Daemi, **Sarah Rajabi**, Hossein Baharvand. Carbohydrate Polymers. 2021. V:257. P: 117632.
- Bioinspired Device Improves the Cardiogenic Potential of Cardiac Progenitor Cells. Zahra Shams, Babak Akbari, **Sarah Rajabi**, Nasser Aghdami. Cell Journal (Yakhteh). 2021. V:23. P: 129–136.
- A simple, green chemistry technology for the fabrication of tissue-engineered scaffolds based on mussel-inspired 3D centrifugal spun. Mahdi Saeed, Saeed Beigi-Boroujeni, **Sarah Rajabi**, Golnaz Rafati Ashtieani, Maryam Dolatfarahi, Mutlu Özcan. Materials Science and Engineering: C. 2021. V:121. P: 111849.

- Optimizing methods for bovine dental pulp decellularization. Hengameh Bakhtiar, **Sarah Rajabi**, Mohammad Pezeshki-Modaress, Mohammad Reza Ellini, Mahsa Panahinia, Solmaz Alijani, Amir Mazidi, Amir Kamali, Amir Azarpazhooh, Anil Kishen. *Journal of Endodontics*. 2021. V:47. P: 62-68.
- Cardiac ECM/chitosan/alginate ternary scaffolds for cardiac tissue engineering application. Maryam Tamimi, **Sarah Rajabi**, Mohammad Pezeshki-Modarres. *International Journal of Biological Macromolecules*. 2020. V:164. P: 389-402.
- Decellularized muscle-derived hydrogels support *in vitro* cardiac microtissue fabrication. **Sarah Rajabi\***, Nasser Aghdami, Fahimeh Varzideh, Melika Parchehbaf-Kashani, Fatemeh Nobakht Lahrood. *Journal of Biomedical Materials Research Part B: Applied Biomaterials*. 2020. V:108. P: 3302-3310.
- Design and characterization of an electroconductive scaffold for cardiomyocytes-based biomedical assays. Melika Parchehbaf-Kashani, Mohammadmajid Sepantafar, Mahmood Talkhabi, Forough Azam Sayahpour, Hossein Baharvand, Sara Pahlavan, **Sarah Rajabi\***. *Materials Science & Engineering C*. 2020. V:109. P: 110603.
- Pulp ECM-derived macroporous scaffolds for stimulation of the dental-pulp regeneration process. Hengameh Bakhtiar, Mohammad Pezeshki-Modaress, Zahra Kiaipour, Mahdiah Shafiee, Mohammad Reza Ellini, Amir Mazidi, **Sarah Rajabi**, Soheila Zamanlui Benisi, Seyed Naser Ostad, Kerstin Galler, Pardis Pakshir, Amir Azarpazhooh, Anil Kishen. *Dental Materials*. 2020. V:36(1). P: 76-87.
- Assessment of the Efficacy of Tributylammonium Alginate Surface-Modified Polyurethane as an Antibacterial Elastomeric Wound Dressing for both Non-Infected and Infected Full Thickness Wounds. Seyyede Sahar Hosseini Salekdeh, Hamed Daemi, Maryam Zare-Gachi, **Sarah Rajabi**, Farhad Bazgir, Nasser Aghdami, Mohammad Sadegh Nourbakhsh, and Hossein Baharvand. *ACS Applied Materials & Interfaces*. 2020. V:12(3). P: 3393-3406.
- Tough, hybrid chondroitin sulfate nanofibers as a promising scaffold for skin tissue engineering. Amin Sadeghi, Mojgan Zandi, Mohamad Pezeshki-Modaress, **Sarah Rajabi**. *International journal of biological macromolecules*. 2019. V:132. P: 63-75.
- Optimization of miRNA delivery by using a polymeric conjugate based on deoxycholic acid-modified polyethyleneimine. Fatemeh Radmanesh, Hamid Sadeghi Abandansari, Sara Pahlavan, Mehdi Alikhani, Mahdi Karimi, **Sarah Rajabi**, Bahram Kazemi, Hossein Baharvand. *International Journal of Pharmaceutics*. 2019. V:565. P: 391-408.
- Cardioprotective effects of omega-3 fatty acids and ascorbic acid improve the regenerative capacity of embryonic stem cell-derived cardiac lineage cells. Parisa Shabani, Zaniar Ghazizadeh, Sattar Gorgani-Firuzjaee, Mohammad Molazem, **Sarah Rajabi**, Sadaf Vahdat, Yaser Azizi, Mahmood Doosti, Nasser Aghdami, Hossein Baharvand. *BioFactors*. 2019. V: 45(3). P: 427-438.
- Tailoring the gelatin/chitosan electrospun scaffold for application in skin tissue engineering: an *in vitro* study. Mohamad Pezeshki-Modaress, Mojgan Zandi, **Sarah Rajabi**. *Progress in biomaterials*. 2018. V:7. P: 207-218.
- Exosomes secreted by hypoxic cardiosphere-derived cells enhance tube formation and increase pro-angiogenic miRNA. Helia Namazi, Elham Mohit, Iman Namazi, **Sarah Rajabi**, Azam Samadian, Ensiyeh Hajizadeh-Saffar, Nasser Aghdami, Hossein Baharvand. *Journal of cellular biochemistry*. 2018. V: 119(5). P: 4150-4160.
- In situ formation of interpenetrating polymer network using sequential thermal and click crosslinking for enhanced retention of transplanted cells. Hamid Sadeghi Abandansari, Mohammad Hossein Ghanian, Fahimeh Varzideh, Elena Mahmoudi, **Sarah Rajabi**, Payam Taheri, Mohammad Reza Nabid, Hossein Baharvand. *Biomaterials*. 2018. V: 170. P: 12-25.
- Human embryonic stem cell-derived cardiovascular progenitor cells efficiently colonize in the bFGF-tethered natural matrix to construct contracting humanized rat hearts. **Sarah Rajabi**, Sara Pahlavan, Hassan Ansari, Saeed Abbasalazadeh, Mohammad Kazemi Ashtiani, Forough Azam Sayahpour, Fahimeh Varzideh, Seyed-Ali Ossia, Sawa Kostin, Thomas Braun, Nasser Aghdami, Hossein Baharvand. *Biomaterials*. 2018. V: 154. P: 99-112.
- Effect of chemical immobilization of SDF-1 $\alpha$  into muscle-derived scaffolds on angiogenesis and muscle progenitors recruitment. **Sarah Rajabi**<sup>#</sup>, Sasan Jalili-Firoozinezhad<sup>#</sup>, Mohammad Kazemi Ashtiani, Shahrageim Tajbakhsh, Hossein Baharvand. *J Tissue Eng Regen Med*. 2017. V: 12(1). P: e438-e450. <sup>#</sup>: authors contributed equally.
- Fabrication and characterization of heparin/collagen sponge for *in vitro* differentiation of Wharton's jelly-derived mesenchymal stem cells into hepatocytes. Fatemeh Aleahmad, Tahereh Talaei-Khozani, **Sareh Rajabi-Zeleti**, Mahsa Sani, Sasan Jalili-Firoozinezhad, Shahin Bonakdar, Sanaz Heshmat-Azad, Mahnaz Azarnia, Mansoureh Jaberipour. 2017. V: 17(2). P: e58724.
- Electrically conductive gold nanoparticle-chitosan thermosensitive hydrogels for cardiac tissue engineering. Payam Baei, Sasan Jalili-Firoozinezhad, **Sareh Rajabi-Zeleti**, Mohammad Tafazzoli-Shadpour, Hossein Baharvand, Nasser Aghdami. *Materials Science and Engineering: C*. 2016. V: 63. P: 131-141.
- Stem Cells and Injectable Hydrogels: Synergistic Therapeutics in Myocardial Repair. Mohammad Majid Sepantafar, Reihaneh Maheronnaghsh, Hossein Mohammadi, **Sareh Rajabi-Zeleti**, Nasser Aghdami, Hossein Baharvand. *Biotechnology Advances*. 2016. V: 34(4). P: 362-379.

- A robust super-tough biodegradable elastomer engineered by supramolecular ionic interactions. Hamed Daemi, **Sareh Rajabi-Zeleti**, Harits Sardon, Mehdi Barikani, Ali khademhosseini, Hossein Baharvand. *Biomaterials*. 2016. V:84. P: 54-63.
- Facile Fabrication of Egg White Macroporous Sponges for Tissue Regeneration. Sasan JaliliFiroozinezhad, **Sareh Rajabi-Zeleti**, Parvaneh Mohammadi, Emanuele Gaudiello, Shahin Bonakdar, Mehran Solati-Hashjin, Anna Marsano, Nasser Aghdami, Arnaud Scherberich, and Hossein Baharvand, Ivan Martin. *Advanced Healthcare Materials*. 2015. V:4(15). P: 2281-2290.
- The behavior of cardiac progenitor cells on macroporous pericardium-derived scaffolds. **Rajabi-Zeleti S**, Jalili-Firoozinezhad S, Azaria M, Khayyatan F, Vahdat S, Nikeghbalian S, Khademhosseini A, Baharvand H, Aghdami N. *Biomaterials*. 2014. V:35(3). P: 970-982.
- Cell-loaded gelatin/chitosan scaffolds fabricated by salt-leaching/lyophilization for skin tissue engineering: In vitro and in vivo study. Mohamad Pezeshki-Modaress, **Sareh Rajabi-Zeleti**, Mojgan Zandi, Hamid Mirzadeh, Niloufar Sodeifi, Abdolhosein Nekookar, Nasser Aghdami. 2014. V: 102(11). P: 3908-3917.
- Functionalisation and surface modification of electrospun polylactic acid scaffold for tissue engineering. Elham Hoveizi, Mohammad Nabuini, Kazem Parivar, **Sareh Rajabi-Zeleti**, Shima Tavakol. 2014. V: 38(1). P: 41-49.

## SELECTED INTERNATIONAL CONFERENCE PAPERS

- Behnaz Mirza Ahmadi, Mahmood Tlkhabi, **Sarah Rajabi**. *In vitro* evaluation of acellular skeletal muscle-derived hydrogel containing 5-azacytidine on the behavior of muscle-derived stem cells. 16<sup>th</sup> Royan international twin congress, Tehran, Iran. 2020
- Shima Rashidi, Maryam Yousefzadeh, **Sarah Rajabi**. Electrospun multi-layer micro/nanofibrous PCL scaffold for vascular tissue engineering. 8th International Conference on the Nanostructure. Tehran, Iran. 2020
- Zahra Shams, **Sarah Rajabi**, Akbari, Aghdami. *In vitro* simulation of the native biological condition of the cardiomyocyte. 15<sup>th</sup> Royan international twin congress, Tehran, Iran. 2019
- Maryam Tami, **Sarah Rajabi**. Fabrication of a polysaccharide-based porous substrate for myocardial tissue engineering. 15<sup>th</sup> Royan international twin congress, Tehran, Iran. 2019
- Maryam Tamimi, **Sarah Rajabi**, Mohammad Pezeshki-Modares. Cardiac ECM-based scaffolds for tissue engineering applications. PTERM. Tehran. Iran. 2018.
- Khadijeh baaji, Mohammad Pezeshki-Modares, **Sarah Rajabi**. Biological scaafolds in heart tissue engineering. PTERM. Tehran. Iran. 2018.
- **Sarah Rajabi**, Sasan Jalili-Firoozinezhad, Mohammad Kazemi Ashtiani, Gilles Le Carrou, Shhahragim Tajbakhsh, and Hossein Baharvand. An SDF-1 tethered 3D ECM –based scaffold improved muscle progenitor cell migration. TERMIS, Davous. Swiss. 25-30 June. 2017.
- **Sareh Rajabi-Zeleti**, A.M. Ghafari, Mohammad Naji, M.H. Ghanian, Hossein Baharvand. Mechanical reinforcement of urinary bladder matrix by electrospun polycaprolactone nanofibers. 6th International Conference on the Nanostructure. Kish Island, Iran. 7-10 March 2016.
- Hamid Mirzadeh, Mohamad Pezeshki Modaress, **Sareh Rajabi**, Mojgan Zandi, Nasser Aghdami. Skin tissue engineering using highly interconnected porous scaffold comprising chitosan/gelatin: in vivo assay. ESAO, Glasgow. Scotland, 2013.
- **Sareh Rajabizeleti**, Sasan Jalilifiroozinezhad, Fahimeh Khayyatan, Sadaf Vahdat, Mahnaz Azarnia, Hossein Baharvand, Nasser Aghdami. Decellularization and characterization of human pericardium membrane as a scaffold for cardiac tissue engineering, 11<sup>th</sup> ISSCR, Boston, USA, 2013.
- Sasan Jalilifiroozinezhad, **S. Rajabizeleti**, S. Bonakdar, M. Solati-Hashjin, N. Aghdami, H. Baharvand. Fabrication of Albumin-Based Scaffold via Freeze-Drying Method for Skin Tissue Engineering Applications. 10<sup>th</sup> International Seminar on Polymer Science and Technology (ISPST), Tehran, Iran, 2012.

## BOOKS

- Tissue Engineering (Stem Cells and Regenerative Medicine Book Series). Royan institute. 2020.
- Natural and Synthetic Hydrogels. (Three chapters, 12. Extracellular Matrix (ECM) based Hydrogels, 25. Hydrogels for Wound Dressing and 20. Hydrogels in Cell and Tissue Engineering). Elsevier publication.

## THESIS

- **Generation of a humanized heart through seeding of hiPSC-derived cardiovascular progenitor cells into growth factor-tethered mouse heart matrix.** Under the supervision of Prof. Baharvand at Royan Institute. Postdoc project. 2014-2017.
- **The differentiation of cardiac progenitor cells to cardiomyocytes on the human pericardium-derived scaffold.** Under the supervision of Dr. Aghdami and Prof. Baharvand at Royan Institute – Dr. Azarnia at Kharazmi University. Ph.D. dissertation. 2009-2014.
- **Effect of honeybee venom on remyelination in *Wistar* rats experimentally demyelinated with ethidium bromide.** Under the supervision of Dr. Azarnia at Kharazmi University, MSc. Thesis, Kharazmi University, 2006-2008.

## SKILLS & PROFICIENCIES

- Experienced in various tissues and whole organ decellularization and evaluations (static and dynamic decellularization methods)
- Experienced in the fabrication and evaluation of hydrogels and 3D microporous scaffolds via common methods, like; freeze-drying. **(Biomaterials)**
- Experienced in Embryonic Stem Cells (ESC) and induced-Pluripotent Stem cells (iPSCs) and organoid culture, cardiogenic differentiation, and characterization.
- Experienced in isolation and primary culture of cardiac progenitors and neonatal cardiomyocytes from native heart tissue, human umbilical vein endothelial cells (HUVECs), muscle-derived stem cells (MDSCs), and dental pulp stem cells from the tooth. **(Cell Culture)**
- Experienced in Immunocytochemistry, Immunohistochemistry, and Flow cytometry assessments **(Immunology)**
- Experienced in all methods of Electrophoresis, Polyacrylamide Gel Electrophoresis, Q-PCR, RT-PCR, and Western blot. **(Molecular Biology)**
- Experienced in working with Stereo microscopes, Fluorescence microscopes, and Light microscopes. **(Microscopy)**
- Experienced in cytotoxicity, scratch assay, cell proliferation, and migration evaluations of tissue engineering scaffolds. **(Biomaterials)**
- Experienced in performing histological assays for tissue engineering scaffolds. **(Tissue Engineering)**
- Familiar with performing dynamic culture systems in perfusion bioreactors. **(Bioreactors)**
- Familiar with *in vivo* assessments, mice, and rats. **(*in vivo*)**

## ACHIEVEMENTS

- National winner in 14<sup>th</sup> Royan stem cell congress. 2018
- Ranked 3<sup>rd</sup> in the graduating class of Cell and Developmental Biology at Kharazmi University, Ph.D., 2013.
- Ranked 2<sup>nd</sup> in the graduating class of Developmental Biology at Kharazmi University, MSc, 2008. ▪ Ranked 2<sup>nd</sup> in the graduating class of Biology at Payame Noor University, BSc, 2005.

## WORKSHOPS, SEMINARS & CERTIFICATIONS

- 13<sup>th</sup> -14<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2017, 2018, and 2019.
- Tissue Engineering and regenerative medicine congress (TERMIS). Davos. Switzerland. Jun 2017
- 12<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2016
- 6<sup>th</sup> international conference on Nanostructure (ICNS6). Kish Island. Iran. March 2016
- 2nd Biomedical Engineering Congress on Cardiovascular Disease, Baghiyatallah University, Tehran, Iran, Jan. 2016
- 4<sup>th</sup> International Prevention of cardiovascular disease. Shiraz University. Shiraz, Iran. September 2015.
- 1st Biomedical Engineering Congress on Cardiovascular Disease, Baghiyatallah University, Tehran, Iran, Jan. 2015
- 11<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2015.
- 6<sup>th</sup> International Royan Summer School, Royan Institute, Tehran, Iran, 2015.
- 10<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2014.
- 9<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2013.
- 4<sup>th</sup> International Royan Summer School, Royan Institute, Tehran Iran, 2013.

- 10<sup>th</sup> International Seminar on Polymer Science and Technology (ISPST), Amirkabir University, Tehran, Iran, 2012.
- 8<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2012.
- 3<sup>rd</sup> International Royan Summer School, Royan Institute, Tehran Iran, 2012.
- 7<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2011.
- 2<sup>nd</sup> International Royan Summer School, Royan Institute, Tehran, Iran, 2011.
- 6<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2010.
- 5<sup>th</sup> International Stem Cell and Regenerative Medicine Congress, Royan Institute, Tehran, Iran, 2009.

## **JOURNAL REVIEWER**

- Cell Journal
- International Journal of Biomedical Materials Research

## **REFERENCES**

### **Hossein Baharvand (Professor)**

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### **Sara Pahlavan (Ph.D.) (Assistant professor)**

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