

CURRICULUM VITAE

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Academic Background:

2007-2013: PhD in Nanobiotechnology,
Tarbiat Modares University, Tehran, Iran

Dissertation: The effect of Osteocalcin mimetic peptide on biomineralization process; hydroxyapatite nanocrystal formation and osteogenesis, **GPA: 18.22**

2003- 2006: Master's Degree in Biophysics,
Tarbiat Modares University, Tehran, Iran,

Thesis: Comparative structural study of calmodulin and apocalmodulin purified from bovine brain, **GPA: 18.51**

1999- 2003: Bachelor's Degree in Biology,
Azad University, Mashhad, Iran, **GPA: 18.17**

Work Experience:

2018-present: Assistant professor, Royan Institute for Stem Cell Biology and Technology,
Tehran, Iran

2017-2018: Research Associate; Royan Institute for Stem Cell Biology and Technology, Tehran,
Iran

2014-2017: Post-doc Fellow; Royan Institute for Stem Cell Biology and Technology, Tehran,
Iran

Awards and Honors

2020: My publication "3D Printing in Dentistry" one of the Springer Nature 2020 highlights

2013: Second rank student in PhD, Tarbiat Modares University, Iran

2011: Visiting Scientist, Department of Anatomy and cell biology, McGill University, Canada

2006: Distinguished graduated MSc student, Tarbiat Modares University, Iran

2003: Second rank student in BSc, Azad University, Iran

Teaching experience:

Department of Tissue engineering, Royan Institute, Tehran, 2022-2023 (*Application of nanotechnology in tissue engineering, graduate level*)

Faculty of Sciences and Advanced Technologies in Biology, University of Science and Culture, Tehran, Iran, 2022-2023 (*Nanotechnology in biomedicine, graduate Level*)

Faculty of Sciences and Advanced Technologies in Biology, University of Science and Culture, Tehran, Iran, 2022-2023 (*Nanobiotechnology, undergraduate Level*)

Faculty of Sciences and Advanced Technologies in Biology, University of Science and Culture, Tehran, Iran, 2020-2021 (*Biophysics, undergraduate Level*)

Faculty of Sciences and Advanced Technologies in Biology, University of Science and Culture, Tehran, Iran, 2020-2021 (*Nanobiotechnology, undergraduate Level*)

Faculty of Sciences and Advanced Technologies in Biology, University of Science and Culture, Tehran, Iran, 2019-2020 (*Nanobiotechnology, undergraduate Level*)

Department of Biotechnology, Shahid Beheshti University of Medical Sciences, Tehran, 2019-2020 (*Nanobiotechnology, graduate level*)

Department of Tissue engineering, Royan Institute, Tehran, 2018-2019 (*Application of nanotechnology in tissue engineering, graduate level*)

Department of Biotechnology, Shahid Beheshti University of Medical Sciences, Tehran, 2017-2018 (*Nanobiotechnology, graduate level*)

Faculty of Biological science, Alzahra University, Tehran, 2016-2017 (*Biophysics, undergraduate Level*)

Faculty of Biological science, Alzahra University, Tehran, 2016-2017 (*Bioinformatics, undergraduate Level*)

-Faculty of Basic Science, Biological Department, Islamic Azad University, Tehran, 2007-2009 (*Biophysics, undergraduate Level*)

-Faculty of Basic Science, Biological Department, Islamic Azad University, Tehran, 2007-2009 (*Radiation Biology, undergraduate Level*)

-Theoretical and practical workshop on "Animal cell culture", Tarbiat Modares University, Tehran, *winter* 2014.

-Theoretical and practical workshop on "Peptide synthesis", Tarbiat Modares University, Tehran, *winter* 2014.

- Theoretical and practical workshop on "Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue", Royan Institute, Tehran, *summer* 2016.

- Endnote in "Research tools" course, Royan Institute, Tehran, *autumn* 2016.

- Endnote in "Research tools" course, Royan Institute, Tehran, Iran, *spring* 2016.
- Bone and cartilage tissue engineering, Royan Institute, Tehran, Iran, *spring* 2016

Conference organization and Services:

- 15th Royan International Congress on Stem Cell Biology & Technology, Razi Conference Hall *Summer 2019*, Scientific Chairperson.
- 1st National and 3rd Royan Scientific Presentation Contest, Royan Institute, *Winter 2017*, Executive Director.
- 2nd Annual Royan Scientific Presentation Contest, Royan Institute, *Winter 2016*, Executive Director.
- Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue workshop, *Summer 2015*, Executive member.
- Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue workshop, *Summer 2016*, Executive member.
- Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue workshop, *Summer 2017*, Executive member.
- Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue workshop, *Summer 2018*, Executive member.
- Isolation, and purification of mesenchymal stem cell from various references; Bone Marrow, Dental Pulp and Adipose Tissue workshop, *Summer 2019*, Executive member.

Supervisory Experience:

Hoda Nasiri, PhD, Advisor, 2015-2022

Maryam Hosseinzadeh, Master's, Advisor, 2017-2019

Noloofar Kalantari, Master's, Supervisor, 2017-2020

Sara Farahi, PhD, Co-supervisor, 2018-2021

Amin Ebrahimi, PhD, Co-supervisor, 2018-present

Abazar Esmaeili, PhD, Advisor, 2018-present

Farnoosh Ebrahimi, Master's, Advisor, 2020-2021

Yalda Alibeigian, Master's, Supervisor, 2021-present

Maryam Hatami, Master's, Supervisor, 2021-present

Farzaneh Mirzaeian, PhD, Co-supervisor, 2021-present

Fatemeh Leisi, Master's, Advisor, 2021-present

Workshops:

- Certificate on Good Clinical Practice (Clinical Trial Center of Tehran University)
- Certificate on Functional Nanoporous Biomaterials: Modeling, Design and Application
- Certificate on Solid phase peptide synthesis
- Certificate on Iran-Korea nanotechnology workshop

Patent:

-Design and synthesis of amidic nanostructured osteocalcin derived peptide for the improvement of hydroxyapatite formation and osteogenesis

Chapter Books:

- Soleymani-Goloujeh M, **Hosseini S**, Baghaban Eslaminejad MR, "**Advanced nanotechnology Approaches as Emerging Tools in Cellular-based Technologies**" in the book "Advances in Experimental Medicine and Biology" Edited by Kursad Turksen, 2022, Springer Cham.
- Nasiri N, Natghi R, Zarei F, **Hosseini S**, Baghaban Eslaminejad MR, "**Mesenchymal Stem Cell Therapy for Osteoarthritis: Practice and Possible Promises**" in the book "Advances in Experimental Medicine and Biology" Edited by Kursad Turksen, pp 1-19, 2022, Springer Cham.
- Khademi-Shirvan M, Ghorbaninejad M, **Hosseini S**, Baghaban Eslaminejad MR, "**The Importance of Stem Cell Senescence in Regenerative Medicine**" in the book "Cell Biology and Translational Medicine," Edited by Kursad Turksen, Volume 9 pp 87-102, 2020, Springer Cham.
- Adibfar A, **Hosseini S**, Eslaminejad MR, "**Smart Polymeric Systems: A Biomedical Viewpoint**" in the book "Cell Biology and Translational Medicine," Edited by Kursad Turksen, Volume 10 pp 133-148, 2020, Springer Cham.
- Ebrahimi A, Baei P, **Hosseini S**, Eslaminejad MR, "**Decellularized Extracellular Matrix as a Potent Natural Biomaterial for Regenerative Medicine**" in the book "Advances in Experimental Medicine and Biology" Edited by Kursad Turksen, pp 1-17, 2020, Springer Cham.
- **Hosseini S**, Halvaei M, Ebrahimi A, Shamekhi MA, Baghaban Eslaminejad MR "**3D-printing in Dentistry**" in the book "Application of Biomedical Engineering in Dentistry " Edited by Lobat Tayebi, 2019, Springer (Humana Press).
- **Hosseini S**, Taghiyar L, Safari F, Baghaban Eslaminejad MR, "**Regenerative Medicine Application of Mesenchymal Stem Cells**" in the book "Advances in Experimental Medicine and Biology – Cell Biology and Translational Medicine" Edited by Kursad Turksen, 2018, Springer International Publishing AG, part of Springer Nature.
- **Hosseini S**, Shamekhi MA, Jahangir Sh, Bagheri F, Baghaban Eslaminejad MR, "**The Robust Potential of Mesenchymal Stem Cell-Loaded Constructs for Hard Tissue Regeneration after Cancer Removal**" in the book "Advances in Experimental Medicine and Biology" Edited by Phuc Van Pham, 2018, Springer (Humana Press).

- **Hosseini S**, Bagheri F, Shamekhi MA, Baghaban Eslaminejad MR, "**Polymeric Scaffolds for MSC-based Cartilage Tissue Engineering**" in the book "Encyclopedia of polymer application". 2018, Taylor & Francis.
- **Hosseini S**, Jahangir Sh, Baghaban Eslaminejad MR, "**Tooth Tissue Engineering**" in the book "Biomaterials for Oral and Dental Tissue Engineering, Materials and Strategies" Edited by Lobat Tayebi and Keyvan Moharamzadeh, 2017, Elsevier.
- **Hosseini S**, Baghaban Eslaminejad MR, "**Mesenchymal Stem cells: An Optimistic Cell Source in Tissue Engineering for Bone Regeneration**" in the book "Cartilage and Bone Regeneration (Stem Cells in Clinical Application)" Edited by Phuc Van Pham, 2017, Springer (Humana Press).

Papers:

- Nasiri N, **Hosseini S**, Reihani-Sabet F, Baghaban Eslaminejad M. Targeted Mesenchymal Stem Cell Therapy Equipped with Cell-tissue Nanomatchmaker Stops Osteoarthritis Progression, **Scientific reports**, 2022.
- Hosseinzadeh M, Kamali A, **Hosseini S**, Baghaban Eslaminejad MR. Extracellular Vesicles Derived from Chondrocyte/MSC Co-Culture Alleviate Osteoarthritis in Rat, (Under review)
- Ghorbaninejad M, Khademi-Shirvan M, **Hosseini S**, Meyfour M, Shahhoseini M, Baghaban Eslaminejad MR. Effective Role of Curcumin on Expression Regulation of EZH2 Histone Methyltransferase as a Dynamic Epigenetic Factor in Osteogenic Differentiation of Human Mesenchymal Stem Cells, (Under review)
- Esmaeili A, Alini M, Baghaban Eslaminejad MR, **Hosseini S**. Engineering Strategies for Customizing Extracellular Vesicle Uptake in a Therapeutic Context, **Stem Cell Research and Therapy**, 2022,
- Jelodari S, Ebrahimi Sadrabadi A, Zarei F, Jahangir S, Azami M, Sheykh Hassan M, Hosseini S. New Insights into Cartilage Tissue Engineering: Improvement of Tissue-Scaffold Integration to Enhance Cartilage Regeneration, **BioMed Research International**, 2022, 2022: 1-13.
- Farahi S, Hosseini S, Hashemi S, Ghanbarian H, Salehi M, **Hosseini S**. The Use of Trichostatin A during Pluripotent Stem Cell Generation Does Not Affect MHC Expression Level, **Stem Cells International**, 2022, 2022: 1-12.
- Hosseinzadeh M, Kamali A, **Hosseini S**, Baghaban Eslaminejad MR. Higher Chondrogenic Potential of Extracellular Vesicles Derived from Mesenchymal Stem Cells Compared to Chondrocytes-EVs in Vitro, **BioMed Research International**, 2021, 2021: 1-12.

- Esmaeili A, **Hosseini S**, Baghaban Eslaminejad MR. Engineered-extracellular vesicles as an optimistic tool for microRNA delivery for osteoarthritis treatment, **Cellular and Molecular Life Sciences**, 2020, 78 (1): 79-91.
- Ghorbaninejad M, Khademi-Shirvan M, Hosseini S, Eslaminejad MB, Epidrugs: novel epigenetic regulators that open a new window for targeting osteoblast differentiation, **Stem Cell Research and Therapy**, 2020, 11 (1): 1-14.
- Nasiri N, **Hosseini S**, Alini M, Khademhosseini A, Baghaban Eslaminejad MR. Targeted cell delivery for articular cartilage regeneration and osteoarthritis treatment, **Drug Discovery Today**, 2019, 24 (11), 2212-2224.
- **Hosseini S**, Naderi-Manesh H, Vali H, Baghaban Eslaminejad MR, Sayahpour FA, Faghihi S. Contribution of osteocalcin mimetic peptide enhances osteogenic activity and extracellular matrix mineralization of human osteoblast-like cells, **Colloid and Surface B**. 2018, 173: 662-671.
- Kamali A, Oryan A, **Hosseini S**, Ghanian MH, Alizadeh M, Baghaban Eslaminejad MR, Baharvand H. Cannabidiol-loaded microspheres incorporated into osteoconductive scaffold enhance mesenchymal stem cell recruitment and regeneration of critical-sized bone defects, **Material Science and Engineering C**. 2019; 101: 64-75.
- Jahangir Sh, **Hosseini S**, Sayahpour FA, Mostafaei F, Baghaban Eslaminejad MR. 3D-porous β -tricalcium phosphate–alginate–gelatin scaffold with DMOG delivery promotes angiogenesis and bone formation in rat calvarial defects, **Journal Materials Science; Materials in Medicine**, 2018, 30(1):1.
- Oryan A, Baghaban Eslaminejad MR, Kamali A, **Hosseini S**, Sayahpour FA, Baharvand H, Synergistic effect of strontium, bioactive glass and nano-hydroxyapatite promotes bone regeneration of critical-sized radial bone defects, **Journal of Biomedical Materials Research Part B**, 2019, 107(1):50-64.
- Khalilifar MA, Mohamadreza Baghban Eslaminejad MR, Ghasemzadeh M , **Hosseini S**, Baharvand H, In vitro and in vivo Comparison of Different Types of Rabbit mesenchymal Stem Cells for Cartilage Repair, **Cell Journal**, 2019, 21 (2).
- Taghiyar L, **Hosseini S**, Safari F, Bagheri F, Fani N, Stoddart M. J., Alini M, Baghaban Eslaminejad MR. New insight into functional limb regeneration: A to Z approaches, **Journal of Tissue Engineering and Regenerative Medicine**, 2018, 12(9): 1925-1943.
- Taghiyar L, Hesaraki M, Azam Sayahpour F, Satarian L, **Hosseini S**, Aghdami N, Baghaban Eslaminejad MR, Msh homeobox 1 (Msx1)- and Msx2-overexpressing bone

marrow-derived mesenchymal stem cells resemble blastema cells and enhance regeneration in mice, **Journal of Biological Chemistry**, 2017, 292(25):10520-10533.

- Taghiyar L, **Hosseini S**, Hesaraki M, Azam Sayahpour F, Aghdami N, Baghaban Eslaminejad MR, Isolation, characterization and osteogenic potential of mouse digit tip blastema cells in comparison with bone marrow-derived mesenchymal stem cells in vitro, **Cell Journal**, 2018, 19 (4): 585-598.
- Kheirabadi M, Maleki J, Soufian S, **Hosseini S**. Design of new potent HTLV-1 protease inhibitors: in silico study. **Molecular Biology Research Communications**, 2016; 5(1): 19-30
- **Hosseini S**, Naderi-Manesh H, Vali H, Faghihi S. Improved surface bioactivity of stainless steel substrates using osteocalcin mimetic peptide. **Material chemistry and physics**, 2014, 143: 1364-1371.
- **Hosseini S**, Naderi-Manesh H, Mountassif D, Cerruti M, Vali H, Faghihi S. C-terminal amidation of an osteocalcin-derived peptide promotes hydroxyapatite crystallization. **Journal of biological chemistry**, 2013, 288: 7885-7893.
- **Hosseini S**, Naderi-Manesh H, Faghihi S. The effect of acidic and amidic osteocalcin derived peptides on the formation of hydroxyapatite nanocrystals. **Biotechnology Tarbiat Modares University**, 2013, 4(1): 65-74.

Conferences:

- Hosseinzadeh M, **Hosseini S**, Baghaban Eslaminejad MR. Improvement of chondrogenic potential of exosomes for treatment of osteoarthritis. **Nature conferences; Innovative tissue therapies from bench to bedside**, November 2021, Virtual.
- Kalantari N, **Hosseini S**, Baghaban Eslaminejad MR. Development of 3d- scaffold using bioink derived from decellularized bone with calcium phosphate cement for bone tissue regeneration. **6th World Congress of the Tissue Engineering and Regenerative Medicine International Society (TERMIS)**, November 2021, Maastricht, The Netherlands.
- Hosseinzadeh M, **Hosseini S**, Baghaban Eslaminejad MR. The effect of extracellular vesicles derived from chondrocytes and mesenchymal stem cells on chondrogenesis: an in vitro study. **15th Royan International Congress on Stem Cell Biology & Technology**, August 2019, Tehran, Iran.

- Ghorbaninejad M, **Hosseini S**, Baghaban Eslaminejad MR, Shahhoseini M. Curcumin promote osteogenic differentiation of human bone marrow-derived MSCs through Ezh2-mediated histone modification, **3rd International and 15th Iranian Genetics Congress**, May 2018, Tehran, Iran.
- Khademi Shirvan M, **Hosseini S**, Baghaban Eslaminejad MR, Shahhoseini M. Curcumin stimulate osteoblast differentiation through regulating p300 Histone acetyltransferase. **3rd International and 15th Iranian Genetics Congress**, May 2018, Tehran, Iran.
- **Hosseini S**, Baghaban Eslaminejad M, Faghihi S. Novel bone scaffold containing biomimetic peptide for bone tissue engineering, **10th World Biomaterial Congress**, May 2016, Montreal, Canada.
- Jahangir Sh, Sayahpour FA, Mostafaei F, **Hosseini S**, Baghaban Eslaminejad MR, Spongy scaffold containing dimethyloxallylglycin accelerates angiogenesis and osteogenesis in Rat calvarial defect, **European Chapter Meeting of the Tissue Engineering and Regenerative Medicine International Society**, June 2017, Davos, Switzerland.
- Kamali A, Oryan A, Baghaban Eslaminejad MR, **Hossieni S**, Moshiri A. Osteoinductive porous scaffolds pre-seeded with mesenchymal stem cells enhance healing of critical-sized radial bone defects in rats. **Stem Cells and Regenerative Medicine Congress**, April 2017, Mashhad, Iran
- **Hosseini S**, Naderi-Manesh H, Faghihi S. “The effect of biomimetic apatite nanocrystal on osteogenic activity of osteoblast like cells”, **5th International Conference on the Nano-Structures**, March 2014, Kish Island, Iran.
- **Hosseini S**, Naderi-Manesh H, Moutassif D, Cerruti M, Vali H, Faghihi S. “The effect of osteocalcin derived peptides on the apatite nanocrystal formation”, **3rd International Conference on Nanotechnology: Fundamentals and Applications**, August 2012, Montreal, Canada.
- **Hosseini S**, Naderi Gh, Naderi-Manesh H, Hassani L, Hadizade shirazi N, Ranjbar B. “Comparative structural study of Calmodulin and ApoCalmodulin purified from bovine brain”, **14th National and 2nd International Conference of Biology**, August 2006, Tehran, Iran.
- **Hosseini S**, Khalife k, Hassani L, Hadizade Shirazi N, Ranjbar B. “Kinetics and thermodynamics study of hemoglobin refolding in the presence of α -dioxime derivatives”, **7th Iranian Biophysical Chemistry Conference**, July 2006, Tabriz, Iran
- **Hosseini S**, Hassani L, Khalife K, Ranjbar B. “Comparative structural study of hemoglobin and Apo-hemoglobin upon α -dioxime derivatives”, **13th Iranian Biology Conference and 1st International Conference of Biology**, August 2005, Rasht, Iran