Parinaz Sadat Alemi, PhD
Department of Biological Sciences, University of Texas at Dallas
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Education

University of Texas at Dallas August 2019 - December 2024
Doctor of Philosophy in Molecular and Cell Biology
Advisor: Dr. Joseph M. Boll

University of Texas at Dallas August 2019 - May 2021
Master of Science in Molecular and Cell Biology

Azad University of Science and Research, Tehran, Iran September 2015 - December 2017
Master of Science in Molecular and Cell Biology
Advisor: Dr. Shiva Irani

Azad Medical Sciences University, Tehran, Iran September 2010 - February 2015
Bachelor of Science in Molecular and Cell Biology

Graduate Education Awards

Betty and Gifford Johnson Travel Award
University of Texas at Dallas
2023 - $1500

Society of Iranian-American Women for Education Scholarship
University of Texas at Dallas
2019 - $1000

Publications

1. Ashrafi, A.**,** Akter, Z., Modareszadeh, P., Modareszadeh, P., Berisha, E., **Alemi, P. S.,** Chacon Castro, M. D., Deese, A. R., & Zhang, L. (2022). Current Landscape of Therapeutic Resistance in Lung Cancer and Promising Strategies to Overcome Resistance. *Cancers*, 14(19), 4562. https://doi.org/10.3390/cancers14194562
2. Dey, S**.**, Ashrafi, A., Vidal, C., Jain, N., Kalainayakan, S. P., Ghosh, P., **Alemi, P. S.,** Salamat, N., Konduri, P. C., Kim, J.-W., & Zhang, L.. (2022). Heme Sequestration Effectively Suppresses the Development and Progression of Both Lung Adenocarcinoma and Squamous Cell Carcinoma. *Molecular Cancer Research*, 20(1), 139–149. https://doi.org/10.1158/1541-7786.mcr-21-0385

3. Wang, T.**,** Ashrafi, A., Modareszadeh, P., Deese, A. R., Chacon Castro, M. D., **Alemi, P. S.,** & Zhang, L. (2021). An Analysis of the Multifaceted Roles of Heme in the Pathogenesis of Cancer and Related Diseases. *Cancers*, 13(16), 4142. https://doi.org/10.3390/cancers13164142
4. Wang, T.**,** Ashrafi, A., Konduri, P. C., Ghosh, P., Dey, S., Modareszadeh, P., Salamat, N., **Alemi, P. S.,** Berisha, E., & Zhang, L. (2021). Heme Sequestration as an Effective Strategy for the Suppression of Tumor Growth and Progression. *Molecular Cancer Therapeutics*, 20(12), 2506–2518. https://doi.org/10.1158/1535-7163.mct-21-0033
5. **Alemi, P. S.**, Atyabi, S. A., Sharifi, F., Mohamadali, M., Irani, S., & Bakhshi, H. (2019). Synergistic effect of pressure cold atmospheric plasma and carboxymethyl chitosan to mesenchymal stem cell nanofibers for cartilage tissue engineering. *Polymers for Advanced Technologies*, 30(6), 1356-1364. https://doi.org/10.1002/pat.4568
6. **Alemi, P.S**., Ahmed, Feroz, Boll, Joseph M. (2024). The BaeSR two-component system regulates antibiotic and oxidative stress through the phenylacetic acid catabolic pathway (In preparation)

Academic Appointments

Graduate Research Assistant January 2024-December 2024
Department of Biological Sciences, University of Texas at Dallas
Advisor: Dr. Joseph M. Boll
Graduate Teaching Assistant August 2019 - December 2023
Department of Biological Sciences, University of Texas at Dallas

Research Experience

Graduate Research Assistant
University of Texas at Dallas, August 2019 - Present

Project 2024-Present:

- Investigating how the two-component system regulates antibiotic resistance.
- Created site-directed mutations in the BaeR gene.
- Performed RNA sequencing analysis using CLC Genomics, GraphPad Prism

Project 2019-2023:

- Developed novel therapeutic HeSP agents through neutral mutations in heme-binding pockets and by creating hybrid sequences from hemophores of various bacteria.
- HeSP2 modulates tumor oxygen levels, inhibits blood vessel growth, and reduces OXPHOS.
- HeSP2 has been patented in the US.

Azad University of Science and Research, Tehran, Iran, September 2015 - December 2017

Project 2015-2017:

- Developed a novel scaffold for cartilage tissue engineering.
- Enhanced interaction between stem cells and materials using pressure-assisted cold atmospheric plasma (CAP).
- Demonstrated successful chondrogenic differentiation via SOX9 and COL2 expression.

Areas of Expertise:

- **Skills** :PCR, RNA sequencing, Cell culture, Gene cloning, Gene transformation, Mass spectrometry, IHC,Protein purification, Chromatography, Western Blot, ELISA, Flow Cytometry, Mouse work

- **Bioinformatic Tools:** SnapGene, Graph Pad Prism, CLC Genomic workbench, Excel

- **Programming :**Python (Pandas, Biopython, PyGenomeTracks, Matplotlib and Seaborn)

Teaching Experience

Graduate Teaching Assistant
University of Texas at Dallas

Courses:

- BIOL2281 - Introductory Biology Laboratory (2022-2023)
    - Supervisors: Dr. Wen Lin and Dr. Anne Davenport
- BIOL2312 - Introduction to Modern Biology II (2022-2023)
    - Supervisor: Michael Wilson
- BIOL2311 - Introduction to Modern Biology I (2019-2021)
    - Supervisor: Uma Srikanth

Contributed Talks and Posters

American Society for Microbiology (ASM), Atlanta, Georgia, 2024

- "BaeSR Regulates Antibiotic and Oxidative Stress through Phenylacetic Acid Catabolism"

Contributed Posters

- "Combination Therapy of Heme Inhibitory Protein (HeSP2) and Cyclopamine Tartrate (CycT) with Chemotherapeutic Drugs as an Effective Strategy for Treatment of TNBC" (2023)
- "Heme Sequestration as an Effective Strategy for the Suppression of Tumor Growth and Progression of SCLC" (2023)
- "Heme Targeting and Its Mechanistic Role in Triple-Negative Breast Cancer Suppression" (2023)

Certificates:

- Python for Genomic Science (John Hopkins University)
- Bioinformatics Specialization (University of California San Diego)

Professional Memberships

- American Society for Microbiology (ASM)
- The American Association for Cancer Research (AACR)

- **LinkedIn**: linkedin.com/in/parinaz-alemi-05402410a
- **Google Scholar**: scholar.google.com/citations?user=NazjbccAAAAJ&hl=en