PERSONAL INFORMATION

Fatemeh Asgari

Ph.D in Clinical Biochemistry
Assistant Professor

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EDUCATION BACKGROUND

Doctor of Philosophy- Clinical Biochemistry| Department of Clinical Biochemistry, School of Medicine Shahid Beheshti University of Medical Sciences

2019-2024

GAP: 19.16 (Rank: 1st among all graduated students in the same year- Talented)

Thesis Title: Immunomodulatory and Anti-inflammatory Effects of Vitamin A and Tryptophan on Monocyte-Derived Dendritic Cells Stimulated with Gliadin in Celiac Disease Patients

Master of Science – Biochemistry| Department of Cellular and Molecular Biology, Kashan University

2015-2017

GAP: 18.27

Thesis Title: Investigation of Toxicity effect of some dihydropyrano [g-3,2] Chromene derivation on k562 cell line (Chronic Myeloid Leukemia)

Bachelor of Science- Biology| Department of Basic science. Kharazmi University

2010-2014

GAP: 16.12

ACADEMIC EXPERIENCE

Assistant professor | Department of Laboratory Medicine, School of Allied Medical Sciences, School of Allied Medical Sciences, Shahid Beheshti University of Medical Sciences

Teaching experience:

Under graduated subjects:

- Basic biochemistry practical in Shahid Beheshti University of Medical Sciences
- Basic biochemistry practical in Tehran Islamic Azad University of Medical Science
- Basic biochemistry theory in Tehran Islamic Azad University of Medical Science

JOURNAL PUBLICATION

1. Hadi A, Rastgoo A, Haghighipour N, Bolhassani A, **Asgari F**, Soleymani S. Enhanced gene delivery in tumor cells using chemical carriers and mechanical loadings. Plos one. 2018;13(12):e0209199.

2. **Asgari F**, Mahinpour R, Moradi L, Haghighipour N. The chromene derivative 4-Clpgc inhibits cell proliferation and induces apoptosis in the K562 cell line. Journal of Cell Communication and Signaling. 2020;14(1):77-91.

3. **Asgari F**, Mahinpour R, Haghighipour N, Moradi L. Investigation of toxicity effect of 4-MePgC and 4-No2pgC two derivatives dihydropyrano [2,3-g] chromene on the K562 cell line (chronic myeloid leukaemia). JMBS 2019; 10 (2) :193-200

4. Bolhassani A, Shahbazi S, Agi E, Haghighipour N, Hadi A, **Asgari F**. Modified DCs and MSCs with HPV E7 antigen and small Hsps: Which one is the most potent strategy for eradication of tumors? Molecular immunology. 2019;108:102-10.

5. Soleymani S, Hadi A, **Asgari F**, Haghighipour N, Bolhassani A. Combination of mechanical and chemical methods improves gene delivery in cell-based HIV vaccines. Current Drug Delivery. 2019;16(9):818-28.

6. Iravani M, Mahinpour R, Zahraei Z, Toluei Z, **Asgari F**, Haghighipour N. Comparison of cytotoxic and antioxidant activities and phenol content of four Salvia L. species from Iran. Journal of Medicinal Plants. 2020;19(76):59-68.

7. Noroozi R, Shamekhi MA, Mahmoudi R, Zolfagharian A, **Asgari F**, Mousavizadeh A, et al. In vitro static and dynamic cell culture study of novel bone scaffolds based on 3D-printed PLA and cell-laden alginate hydrogel. Biomedical Materials. 2022;17(4):045024.

8. **Asgari F**, Nikzamir A, Baghaei K, Salami S, Masotti A, Rostami-Nejad M. Immunomodulatory and anti-inflammatory effects of vitamin A and tryptophan on monocyte-derived dendritic cells stimulated with gliadin in celiac disease patients. Inflammation. 2024;47(5):1706-27.

9. Khosravieh ZF, Nekounam H, **Asgari F**, Haghighipour N. Electrospun PAN/PANI/CNT scaffolds and electrical pulses: a pathway to stem cell-derived nerve regeneration. Biomedical Physics & Engineering Express. 2024;10(5):055010.

10. **Asgari F**, Khodadoust M, Nikzamir A, Jahani-Sherafat S, Rezaei Tavirani M, Rostami-Nejad M. The role of tryptophan metabolism and tolerogenic dendritic cells in maintaining immune tolerance: Insights into celiac disease pathogenesis. Immunity, Inflammation and Disease. 2024;12(8):e1354.

11. Mousavinejad SN, Takhshid MA, Salami S, Khorsand M, **Asgari F**, Sirati-Sabet M. The Effect of Quercetin on the Expression of miR-21 and miR-34a-5p on HeLa and Ca Ski Cell Lines. Jundishapur Journal of Natural Pharmaceutical Products. 2024;19(4).

12. **Asgari F**, Nikzamir A, Baghaei K, Masotti A, Rostami-Nejad M. Investigating the therapeutic potential of tryptophan and vitamin A in modulating immune responses in celiac disease: an experimental study. Naunyn-Schmiedeberg's Archives of Pharmacology. 2025:1-14.

CONFERENCE PUBLICATION

1. **Asgari F**, Mahinpour R, Haghighipour N, Moradi L. Investigation of toxicity effect of 4-MePgC and 4-No2pgC two derivatives dihydropyrano [2,3-g] chromene on the K562 cell line (chronic myeloid leukaemia). First International Congress on Biomedicin (ICB2017), Milad Tower,Tehran, 2017

2. Milani A , Haghighipour N, Hadi A, **Asgari F** , Bolhassani A. Enhancing the transfection potency of mesenchymal stem cell using heat shock method 3rd international and 11th national Biotechnology congress of Iran. Razi International Conference Center , 2019

3. **Asgari F**, Rostami-Nejad M, Nikzamir A, Salami S, Baghaee K. PT-Gliadin Induce Phenotypic and Functional Maturation of DCs Derived from Peripheral Blood Mononuclear Cells of Celiac Disease. 17th National and 8th International Congress of Biochemistry and Molecular Biology. Tehran University of Medical Sciences, 2022

4. **Asgari F**, Rostami-Nejad M, Nikzamir A, Salami S, Baghaee K. Synergistic Effect of Vitamin A and Tryptophan to Induces Tolergenic Dendritic cells in Celiac Disease Patient. 18th National and 9th International Congress of Biochemistry and Molecular Biology. Tehran-Iran University of Medical Sciences, 2024

5. **Asgari F,** Nikzamir A, Taebi R, Rostami-Nejad M . The effect of probiotics on tryptophan metabolism in the behavioral aspects of phenylketonuria in the 18th National and 9th International Congress of Biochemistry and Molecular Biology. Tehran-Iran University of Medical Sciences, 2024

6. Taebi R, Yousefi T, Mohammadi Jobani B, **Asgari F**. The Role of nuclear factor erythroid 2–related factor 2 (Nrf2) Pathway in polycystic ovary syndrome: A systematic review in the 18th National and 9th International Congress of Biochemistry and Molecular Biology. Tehran-Iran University of Medical Sciences, 2024

RESEARCH PLAN

1. The effect of hemodynamic forces on differentiation of mesenchymal stem cells into endothelial cells in blood, Pasteur Institute of Iran (2017-2019)

2. Comparison of mechanical and chemical HIV-1 Nef gene transfection in mesenchymal stem cells and evaluation of the transfected cells' immunity in BALB/c mice model, Pasteur Institute of Iran (2017-2019)

3. Evaluating the effect of Tryptophan and Vitamin A in regulating the phenotypic maturity of human derived dendritic cells stimulated with gliadin in celiac disease, Research Institute for Gastroenterology and Liver Diseases, (2020-2022)

4. Evaluating the effect of photobiomodulation in regulating the phenotypic maturity of human derived dendritic cells stimulated with gliadin in celiac disease in Laser application research center in medical sciences (2020-2022)

5. The effect of mechanical loading on the amount of secretion of Transforming Growth Factor β1 from HCT-116 cells using microfluidic system. Pasteur Institute of Iran (2021-2023)

6. Investigation of dendritic cells maturation markers using mechanical loading by microfluidic system. Yasouj Molecular Cell Research Center (2021-2023)

7. Fabrication and investigation of the physical and mechanical properties of functionally graded scaffolds for osteochondral tissue engineering in specialized bioreactors and pre-clinical assessment. Yasouj Molecular Cell Research Center (2021-2023)

8. Investigating the expression profile of key genes in non-alcoholic fatty liver disease and prostate cancer and identifying the molecular relationship between both diseases using a systems biology approach. Shahid Beheshti University of Medical Sciences

9. Investigation of antioxidant genes Nrf2, FOXO3a, and inflammatory genes TRPV1, and TNFa on acute itching induced by histamine in NMRI mice treated with cinnamic acid. Shahid Beheshti University of Medical Sciences

10. Investigation of the effect of cinnamic acid on carbon tetrachloride-induced hepatotoxicity. Shahid Beheshti University of Medical Sciences

PROFESSIONAL ACTIVITIES

Reviewer for:

- Biomedical Physics & Engineering Express
- Archives of Advances in Biosciences (AAB)
- Gastroenterology and Hepatology from Bed to Bench

Held of

- GraphPad Prism workshop at Tehran and Shahid beheshti University

Member of

- Iranian Biochemistry Association

RESEARCH INTERESTS

Biochemistry, Dendritic Cells, Stem Cells, Transfection, Drug delivery systems, Biomechanical engineering

SKILLS

Computer skills

- SPSS statistics
- Graphpad prism
- Flowjo
- Primer Design

Other Skills

- Extraction of Mesenchyme stem cell from bone marrow and adipose tissue
- Monocyte isolation and differentiation into DCs
- Transfection
- Cell culture
- MTT assay
- Molecular and cellular technique
- Flow Cytometry
- PI Station
- ELISA assay
- Electrophoresis assay