CURRICULUM Vitae



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Mostafa Akbarzadeh-Khiavi

Molecular Medicine (Doctor of Philosophy)

Tabriz University of Medical Science, Iran

Assistant Professor of Liver and Gastrointestinal Diseases Research Center (LGDRC)

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**PERSONAL INFORMATION**

Date of Birth: 12 Jul. 1981

Nationality: Iranian

Marital Status: Married

Ph. D., Molecular Medicine

**Thesis**

**Thesis Topic (Ph. D)** “Targeted Nanosystem Enzyme Therapy of Colon Cancer”, Supervisor: Professor Mohammad Hosein Somi, Professor Yadollah Omidi. Date: 2019-06-22

**Outcomes of Ph. D Thesis**

* Patent
* Publications
* Product

**Awards**

* Top national research student (2020)
* Top Inventor of Tabriz University of Medical Sciences (2017)

**Patents**

* 1402 Production of staphylococcal recombinant protein A for purifying antibodies and immunoglobulin G
* 1401 Manufacturing and nanoformulation of recombinant asparaginase anticancer enzyme without harmful glutaminase activity from the native bacterium Bacillus licheniformis SL1 (No.107765)
* 1401 Development of triazine chromatography column for separation of immunoglobulins (No. 10739)
* 1396 Syntheses and production of targeted enzymatic nano drug against colon cancer (No.93309)
* 1396 Engineering and Improved Production of Salt Resistant multicopper oxidase enzyme from local Bacillus sp. SL-1 as recombinant (No. 93297)
* 1395 Using of halothermophile Bacillus sp. SL-1 to production of salt-resistant hydrolytic enzymes (No. 89798)

**Grants**

**Targeted nanosystem enzyme therapy of colon cancer**

Role: Co-PI

Funder: Liver and Gastrointestinal Diseases Research Center (LGDRC), Tabriz, Iran

Status: Finished. 2016-4-21/2019-10-28.

**Targeted nan-enzyme therapy of CRC**

Role: Co-PI

Funder: Iran National Science Foundation (INSF), Tehran, Iran

Status: Finished. 2018-1-25/2020-4-4.

**RESEARCH INTERESTS**

Therapeutic enzmes

Targeted Drug Delivery

Molecular medicine

Antibody drug conjugate (ADC)

Molecular biomarker

Non-coding RNAs (ncRNAs)

Nanomedicine

**Employments**

**Liver and Gastrointestinal Diseases Research Center(LGDRC), Tabriz University of Medical Sciences,**

**Tabriz, Iran.**

Jun 2020 – Present

Assistant professor

**Ardabil University of Medical Sciences,**

**Ardabil, Iran**

2018-2020

Lecturer (Immunogenetics)

**Journal publications**

* M Akbarzadeh-Khiavi, A Safary, Y Omidi (2024). Targeting long non-coding RNAs as new modulators in anti-EGFR resistance mechanisms. *BioImpacts*
* TK Gill, MM Mittinty, LM March, JD Steinmetz, GT Culbreth, M Cross, **M Akbarzadeh-Khiavi**, et al. (2023). Global, regional, and national burden of other musculoskeletal disorders, 1990–2020, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. *The Lancet Rheumatology*
* D Wu, Y Jin, Y Xing, MD Abate, M Abbasian, M Abbasi-Kangevari, **M Akbarzadeh-Khiavi**, et al. (2023). Global, regional, and national incidence of six major immune-mediated inflammatory diseases: findings from the global burden of disease study 2019. *EClinicalMedicine*
* AH Olfati, A Safary, M Akbarzadeh-Khiavi, K Adibkia (2023). Recent advances in protein corona and practical application of nanoparticle-based therapeutic agents. *Journal of Drug Delivery Science and Technology*
* S Azadnajafabad, S Saeedi Moghaddam, E Mohammadi, N Rezaei, **M Akbarzadeh-Khiavi**, et al. (2023). Burden of breast cancer and attributable risk factors in the North Africa and Middle East region, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Frontiers in Oncology*
* Y Wang, PS Azzopardi, JA Kerr, KL Francis, SM Sawyer, EC Kennedy, **M Akbarzadeh-Khiavi**, et al. (2023). The unfinished agenda of communicable diseases among children and adolescents before the COVID-19 pandemic, 1990–2019: a systematic analysis of the Global Burden of Disease. *The Lancet*
* MR Malekpour, M Abbasi-Kangevari, SH Ghamari, J Khanali, **M Akbarzadeh-Khiavi**, et al. (2023). The burden of metabolic risk factors in North Africa and the Middle East, 1990–2019: findings from the Global Burden of Disease Study. *EClinicalMedicine*
* A Safary, **M Akbarzadeh-Khiavi**, J Barar, Y Omidi (2023). SARS-CoV-2 vaccine-triggered autoimmunity: Molecular mimicry and/or bystander activation of the immune system. *BioImpacts*
* KS Ikuta, LR Swetschinski, GR Aguilar, F Sharara, T Mestrovic, AP Gray, **M Akbarzadeh-Khiavi** ,et al. (2022). Global mortality associated with 33 bacterial pathogens in 2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*
* H Farzi-Khajeh, S Toraby, **M Akbarzadeh-Khiavi**, A Safary, MH Somi (2022). Development of biomimetic triazine-based affinity ligands for efficient immunoglobulin G purification from human and rabbit plasma. *Journal of Chromatography A*
* **M Akbarzadeh-Khiavi**, H Farzi-Khajeh, MH Somi, A Safary, J Barar (2022). Eradication of KRAS mutant colorectal adenocarcinoma by PEGylated gold nanoparticles-cetuximab conjugates through ROS-dependent apoptosis. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*
* HH Kyu, A Vongpradith, SB Sirota, A Novotney, CE Troeger, MC Doxey, **M Akbarzadeh-Khiavi**, et al.(2022). Age–sex differences in the global burden of lower respiratory infections and risk factors, 1990–2019: results from the Global Burden of Disease Study 2019. *The Lancet infectious diseases*
* M Abbasi-Kangevari, S Saeedi Moghaddam, SH Ghamari, **M Akbarzadeh-Khiavi**, et al.(2022). The burden of prostate cancer in North Africa and Middle East, 1990–2019: Findings from the global burden of disease study. *Frontiers in Oncology*
* S Simay, **M Akbarzadeh-Khiavi**, MM Pourseif, J Barar, A Safary, Y Omidi (2022). Recombinant production and characterization of L-glutaminase (glsA) as a promiscuity therapeutic enzyme. *Applied Microbiology and Biotechnology*
* KB Tran, JJ Lang, K Compton, R Xu, AR Acheson, HJ Henrikson, **M Akbarzadeh-Khiavi**, et al (2022). The global burden of cancer attributable to risk factors, 2010–19: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*
* **M Akbarzadeh-Khiavi**, M Torabi, AH Olfati, L Rahbarnia, A Safary (2022).Bio-nano scale modifications of melittin for improving therapeutic efficacy. *Expert Opinion on Biological Therapy*
* **M Akbarzadeh-Khiavi**, M Torabi, L Rahbarnia, A Safary (2022). Baricitinib combination therapy: a narrative review of repurposed Janus kinase inhibitor against severe SARS-CoV-2 infection. *Infection*
* F Lotfi, **M Akbarzadeh-Khiavi**, Z Lotfi, L Rahbarnia, A Safary, H Zarredar, et al (2021). Micronutrient therapy and effective immune response: a promising approach for management of COVID-19. *Infection*.
* A Safary, H Moghaddas-Sani**, M Akbarzadeh-Khiavi**, A Khabbazzi, et al (2021). Enzyme replacement combinational therapy: effective treatments for mucopolysaccharidoses. *Expert Opinion on Biological Therapy*.
* **KM Akbarzadeh**, A Safary, J Barar, A Ajoolabady, MH Somi, Y Omidi (2020). Multifunctional nanomedicines for targeting epidermal growth factor receptor in colorectal cancer. *Cellular and molecular life sciences: CMLS* 77 (6), 997-1019
* **MA Khiavi**, A Safary, J Barar, H Farzi-Khajeh, A Barzegari, R Mousavi, et al (2020). PEGylated gold nanoparticles-ribonuclease induced oxidative stress and apoptosis in colorectal cancer cells .*BioImpacts* 10 (1), 27-36
* **M Akbarzadeh Khiavi**, A Jalili, A Safary, Z Gharedaghchi, SK Mirinezhad, et al (2020). Karyotypic abnormalities and molecular analysis of Y chromosome microdeletion in Iranian Azeri Turkish population infertile men. *Systems biology in reproductive medicine* 66 (2), 140-146.
* A Safary, **MA Khiavi**, Y Omidi, MA Rafi.Targeted enzyme delivery systems in lysosomal disorders: an innovative form of therapy for mucopolysaccharidosis (2019). Cellular and Molecular Life Sciences 76 (17), 3363-3381
* **MA Khiavi**, A Safary, A Aghanejad, J Barar, SH Rasta, A Golchin, Y Omidi, et al (2019). Enzyme-conjugated gold nanoparticles for combined enzyme and photothermal therapy of colon cancer cells. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 572, 333-344
* **M Akbarzadeh Khiavi**, A Safary, MH Somi (2019). Recent advances in targeted therapy of colorectal cancer: impacts of monoclonal antibodies nanoconjugates. *BioImpacts* 9 (3), 123-127
* A Safary, **MA Khiavi**, R Mousavi, J Barar, MA Rafi (2018). Enzyme replacement therapies: what is the best option? *BioImpacts*: BI 8 (3), 153
* **Mostafa Akbarzadeh-Khiavi**, Seyyed Ali Rahmani, Tajedin Akbarzadeh-Khiavi. Molecular screening of Y chromosome microdeletions in AZFc and AZFd regions of the non-obstructive azoospermic patients referred to Alzahra hospital in Tabriz (2014). *Journal of Kashan University of Medical Sciences* 18 (2), 122-127
* A Safary, R Moniri, SM Mirhashemi, H Nikzad, **MA Khiavi** (2013). Phylogenetic and Biochemical Characterization of a New Halo-Thermotolerant, Biofilm-Forming Bacillus from Saline Lake of Iran

*Polish journal of microbiology* 62 (4), 419

* A Safari, **M Akbarzadeh-Khayavi**, M Roayaei-Ardakani, H Motamedi (2012). Isolation of biosurfactant-producing bacteria from the Caspian Sea and determination of their biosurfactant activity. Feyz Journal of Kashan University of Medical Sciences 16 (1)
* Safary A., Roayayei M., Abolhasani A., **Akbarzadeh M**., Motamedi H.(2010). Isolation and characterization of biosurfactant producing bacteria from Caspian Sea. Biotechnology 9 (3): 378-382.

**Selected Conference Proceedings**

* Hamieh Goshtasbi, **Mostafa Akbarzadeh-Khiavi**, Azam Safary, Ali Movafeghi, Yadollah Omidi. “In vitro anticancer activity of methanolic extract of Chroococcus sp., from Kani Barazan International Wetland” 3rd international congress 4th national conference of biotechnology of medicinal plant and mushrooms, 2021-05-17, University of Zanjan, Zanjan, Iran
* Hamieh Goshtasbi, Azam Safary, **Mostafa Akbarzadeh-Khiavi**, Ali Movafeghi, Yadollah Omidi. “Antimicrobial impacts of methanolic extract of Cyanobacteria isolated from Iran's Lake Urmia” 3rd international congress 4th national conference of biotechnology of medicinal plant and mushrooms, 2021-05-17, University of Zanjan, Zanjan, Iran
* Seyed Kazem Mirinezhad, **Mostafa Akbarzadeh-Khiavi**, Azam Safary, Aziz Eftekhari, Mohammad Hossein Somi. “Covid-19 pandemic status and the human microbiome pattern: Real Challenges and future perspective” International E-Conference on COVID-19 & Health System: The Lessons Learned, 2021-05-25, Zanjan university of medical sciences, Zanjan, Iran
* **Mostafa Akbarzadeh-Khiavi**, Azam Safary, Seyed Kazem Mirinezhad, Mohammad Hossein Somi “The survey of the effect of ribonuclease A conjugated to PEGylated gold nanoparticles on the expression of ERK1 / ERK2” Third International Conference on Biology and Earth Sciences, 2021-03-10, Hamadan, Iran
* Seyed Kazem Mirinezhad, **Mostafa Akbarzadeh-Khiavi**, Azam Safary, Mohammad Hossein Somi “Evaluation of APC gene mutations in patients with the classic form of familial adenomatous polyposis” Third International Conference on Biology and Earth Sciences, 2021-03-10, Hamadan, Iran
* **Mostafa Akbarzadeh Khiavi**, Azam Safary, Jaleh Barar, Seyyed Kazem Mirinezhad, Yadollah Omidi, Mohammad Hossein Somi “Oxidative stress-induced antiproliferative and apoptotic effects of nanoformulated RNase A in colorectal cancer cells”19thIranian Congress of Gastroenterology and Hepatology (ICGH 2019), [Razi International Convention Center](http://www.amicoyasnapars.com/en/event-location/razi-convention-center/), 2019-11-8, Tehran, Iran.
* **Mostafa Akbarzadeh Khiavi**, Azam Safary, Jaleh Barar, Yadollah Omidi, Mohammad Hossein Somi “Designing and synthesis Enzyme-based nanobiosystem against colon cancer” 18thIranian Congress of Gastroenterology and Hepatology (ICGH 2019), [Razi International Convention Center](http://www.amicoyasnapars.com/en/event-location/razi-convention-center/), 2018-11-2, Tehran, Iran

**Professional Experiences**

* Standard molecular biology techniques including: DNA and RNA extraction, PCR, Real Time PCR, microRNA, Cloning, Gene Expression,…
* Cancer Biology, Cancer Genetics, Cancer Biomarkers, Apoptosis detection, Cell Culture, Comet Assay, MTT Assay, Cell Biology, Cell cycle assay,…
* Nanomedicine techniques: Targeted Drug delivery nanosystems, nanoparticles synthesis, PEGylated nanoparticles synthesis, Photo thermal therapy (NIR),…
* Biochemistry techniques: PAGE, SDS-PAGE, purification techniques including: affinity

chromatography, Gel filtration,…

* Microbiology techniques including: Biotransformation, culture of bacteria,