

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 Omid. 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 enzymes

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

Journal publications

- K Javidi-Aghdam, Eghbaki, M Jafarpour, **Mostafa Akbarzadeh-Khiavi**, et.al. (2025). Role of NEAT1 and HOTAIR Long Non-Coding RNAs in Behcet's Disease Pathogenesis and Their Correlation with Target Inflammatory Cytokines. *Molecular Biology Reports*.
- E Rasuli, K Javidi-Aghdam, **M Akbarzadeh-Khiavi**, A Abdshah, et.al (2024). Immunoregulatory role of AC007278. 3 and HOTAIR long non-coding RNAs in lupus nephritis: potential biomarkers and therapeutic targets. *Molecular Biology Reports* 51 (1), 1-9.
- AH Olfati, **M Akbarzadeh-Khiavi**, A Safary, MM Pourseif, K Adibkia (2024). Biological characterisation and computational conformation dynamics of putative L-glutaminase YLaM identified from *Bacillus licheniformis*. *Molecular Simulation* 50 (16), 1367-1378
- S Toraby, H Farzi-Khajeh, L Rahbarnia, A Safary, **M Akbarzadeh-Khiavi** (2024). Immobilized recombinant laccase over PEGylated silica-coated magnetic nanoparticles for anti-inflammatory modulation in pro-monocytic model cell line. *Process Biochemistry* 146, 56-67.
- SK Mirinezhad, **M Akbarzadeh-Khiavi**, F Seyednejad, MH Somi (2024). Rectal cancer survival and prognostic factors in Iranian population: A retrospective cohort study. *Cancer Treatment and Research Communications*, 100810
- M Yousefi, H Farzi-Khajeh, **M Akbarzadeh-Khiavi**, A Safary, K Adibkia (2024). Improved Biological Impacts of anti-EGFR Monoclonal Antibody in KRAS-Mutant Colorectal Cancer Cells by Silica-Coated Magnetic Nanoparticle Conjugation. *Pharmaceutical Sciences*.
- M Akbarzadeh-Khiavi, A Safary, Y Omid (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 Omid (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 Omid (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 Omid (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 Omid, 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 Omid, 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., Roayaye 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 Omid. "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 Omid. "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, Zanzan university of medical sciences, Zanzan, 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 Omid, Mohammad Hossein Somi "Oxidative stress-induced antiproliferative and apoptotic effects of nanoformulated RNase A in colorectal cancer cells" 19th Iranian Congress of Gastroenterology and Hepatology (ICGH 2019), Razi International Convention Center, 2019-11-8, Tehran, Iran.
- **Mostafa Akbarzadeh Khiavi**, Azam Safary, Jaleh Barar, Yadollah Omid, Mohammad Hossein Somi "Designing and synthesis Enzyme-based nanobiosystem against colon cancer" 18th Iranian Congress of Gastroenterology and Hepatology (ICGH 2019), Razi International 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,