SEYED ABBAS MIRZAEI

Curriculum Vitae

Profession: Associate Professor, School of Advanced Technologies
Department of Medical Biotechnology, SKUMS,
Chaharmahal and Bakhtiari, 88138-33435, Iran.

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----------RESEARCH & WORK INTERESTS----------

I would like to extend my experiences is cancer gene therapy as new clinical methods for cancer treatment. I have also acquired good experiences in tracking cancer signals through my post-doctoral fellow in Germany. I would really like to continue my researches in finding of genetic/epigenetic modifications and mutagenesis leading in cancers and screening small molecules and construction of nanostructured vehicles to target the cancer cells as well.

----------EDUCATION----------

09/2006-08/2010	PhD degree, *Tehran University of Medical Sciences*, Iran.
	GPA= 19.26 (96.30%)
09/1996-01/2002	PharmD degree, *Kerman University of Medical Sciences*, Iran.
	GPA= 18.00 (90%)

----------PROFESSIONAL EXPERIENCES----------

Post-PhD Experiences

School of Advanced Technologies, Shahrekord University of Medical Sciences — Shahrekord, Iran

Dean of Cellular & Molecular Research Center	**Jul '25-Present**
Dean of Cellular & Molecular Research Center	**Apr '20-Apr '22**
Associate Professor of Pharmaceutical Biotechnology	**Mar '18-Present**
Dean of Basic health Sciences Institute	**May '16-May '17**
Head of Medical Biotechnology Department	**Sep '14-Present**
Assistant Professor of Pharmaceutical Biotechnology	**Sep '14-Mar '18**

Engaging in scholarly activities and creative endeavors that advanced research supervision, innovation, and academic excellence at the University, including:

- Providing strategic leadership in faculty recruitment, academic resource allocation, and procurement of laboratory equipment and supplies.
- Directing student recruitment and retention initiatives, while leading curriculum design and program development across undergraduate and graduate levels.

- Establishing and maintaining academic policies, ensuring compliance with institutional rules and standards.
- Designing and delivering university-level courses, supervising graduate and undergraduate research, and mentoring teaching assistants.
- Conducting and supervising research projects, authoring peer-reviewed publications, securing competitive research grants, and presenting at international conferences.
- Implementing procedures for laboratory management, including maintenance, repair, and inventory systems.
- Fostering academic collaborations and building partnerships with national and international institutions.

School of Pharmacy, Zanjan University of Medical Sciences — Zanjan, Iran

Head of Medical Biotechnology Department **Aug '09- Sep '14**

Assistant Professor of Pharmaceutical Biotechnology **Aug '09- Sep '14**

Led academic, research, and administrative initiatives as Assistant Professor and Department Head, including:

- Taught and supervised undergraduate and graduate students across pharmacy and related disciplines.
- Designed and submitted research proposals, successfully securing funding for departmental and independent projects.
- Conducted original research and published findings in peer-reviewed academic journals.
- Coordinated departmental operations, including scheduling meetings, organizing training sessions, and engaging with faculty, students, and external stakeholders.
- Prepared and presented research reports and findings to academic and professional audiences.
- Initiated and supported strategies for organizational growth and collaboration within and beyond the university.

Andia Avicenna Biopharmaceutical, Knowledge-Based Company — Zanjan, Iran

Quality Assurance Manager **Aug '11 – Sep '20**

Led quality assurance initiatives, including:

- Contributed to the design and implementation of quality control programs, ensuring compliance with GMP, GLP, and safety standards.
- Delivered training courses for staff on QC procedures, GMP, GLP, and safety protocols.
- Reviewed quality control reports and approved or rejected final drug products based on quality standards.
- Developed and improved quality management processes to enhance operational efficiency and ensure regulatory compliance.

Leibniz Research Institute for Molecular Pharmacology (FMP) — Berlin, Germany

Postdoctoral Researcher **May '09 – Dec '09**

Led advanced research initiatives, including:

- Designed, organized, and conducted highly specialized experiments in gene cloning in eukaryotes and protein purification using FPLC, affinity chromatography, ion exchange, and gel filtration.
- Applied established scientific protocols and developed new experimental procedures as required.
- Analyzed and interpreted complex data to support research objectives and publications.
- Contributed to collaborative projects, ensuring scientific rigor and accuracy in experimental design.

Pre-PhD Experiences

TEMAD Pharmaceutical Company — Mashhad, Iran

Quality Control and R&D Manager **Nov '04 – May '06**

Led quality assurance and research initiatives, including:

- Guided and monitored quality control processes to ensure raw materials and finished pharmaceuticals met USP, EP, and BP standards.
- Supervised manufacturing lines to ensure compliance with GMP and cGMP regulations for efficiency and quality.
- Maintained and updated quality control manuals, safety protocols, and standard operating procedures (SOPs).

Clinical pharmacist

Imam Khomeini Hospital — Bam, Kerman, Iran **Nov '02-Nov '04**

Sina Hospital — Zarand, Kerman, Iran **Jun '02-Nov '02**

Led clinical and pharmacy operations, including:

- Dispensed prescriptions in accordance with standard operating procedures (SOPs), ensuring accuracy and patient safety.
- Addressed patient inquiries and provided counseling on medication use.
- Recruited, trained, and supervised pharmacy technicians and staff.
- Liaised with suppliers, maintained drug inventories, and managed the departmental budget.
- Supported overall pharmacy workflow and contributed to efficient hospital operations.

----------EDUCATION & RESEARCH----------

Teaching

I have delivered lectures and supervised courses for Pharm.D., M.Sc., and Ph.D. students across a wide range of subjects. I have created teaching materials and video lectures, some of which have been published online (Teaching Videos). I have designed and developed curriculum content for undergraduate and graduate programs, supervised, advised, and mentored graduate students, research assistants, and teaching assistants. I have evaluated student performance, provided feedback, and implemented innovative teaching methods to enhance learning outcomes. The main subjects I have taught include:

My Teaching Videos

- Enzyme purification and characterization
- Advanced molecular techniques
- Mathematical kinetics models
- Cell signaling
- Biology and molecular genetics
- Pharmaceutical biotechnology
- Human cell culture
- Biologic agents
- Genetic engineering

Up to **200 credits** have been thought yet, the main lectures were molecular cloning, PCR and real-time PCR methods, expression profiling, western blotting, human cell culture techniques, bioengineering, molecular mechanisms in biology, cell cytotoxicity mechanisms, genotoxicity, apoptosis, cell signaling, gene silencing and mathematical intelligence in biology and lab calculations and predictions.

Professional Skills

- Skilled in gene editing using CRISPR/Cas9
- Extensive experience in cell sorting using various cell sorters
- Proficient in mammalian cell culture, including viability assays, cytotoxicity, cell signaling, cell migration, and invasion assays
- Extensive experience in transcriptomics studies, including DNA/RNA extraction, quantification, PCR, and real-time PCR
- Experienced in targeted gene delivery through the construction of intelligent nanocarriers
- Proficient in genotoxicity assays, comet assays, and cell death analyses
- Skilled in flow cytometry assays, including apoptosis assessment, cell cycle analysis, protein quantification, and functional analyses

- Proficient in proteomics studies, including protein extraction and quantification, ELISA, SDS-PAGE, western blotting, immunocytochemistry (ICC), and immunohistochemistry (IHC)

Grants and Theses Supervision

I have supervised and guided research projects in areas including pharmaceutical biotechnology and nanobiotechnology, natural product screening for malignant disorders, cancer detection, prevention, and treatment strategies, cell signaling in multidrug-resistant cancers, genetic engineering and enzyme technologies, and gene therapy and gene silencing. To date, I have supervised and awarded more than 18 Ph.D., 30 M.Sc., and 12 Pharm.D. dissertations on these topics.

----------HONORS & AWARDS----------

2025 and 2019: President's Teaching Excellence Awards, Shahrekord University of Medical Sciences.

2023, 2020 and 2018: President's Research Excellence Awards, Shahrekord University of Medical Sciences, Iran

2021: National Academic Excellence Award for Installation of New COVID-19 Detection Labs, Isfahan University of Medical Sciences, Iran.

2016: National Research Excellence Award, Ministry of Health and Medical Education, Iran.

2015–2022: Faculty Teaching Excellence Awards, Shahrekord University of Medical Sciences.

2012, 2013, 2014, and 2016: Award for the Leading Educational Department of the University.

2011–2014: Faculty Teaching Excellence Award, Zanjan University of Medical Sciences.

2010: Graduate Excellence Award for recognition of elite PhD graduates, Tehran University of Medical Sciences, Iran.

2010: President's Award for Educational Excellence for highest GPA (19.26/20; 96.3%), Tehran University of Medical Sciences, Iran.

2008: Academic Excellence Award for highest mark (186.8/200; 93.4%) in the 3rd Pharmaceutical PhD National Board Exam, Tehran University of Medical Sciences, Iran.

2006: Academic Excellence Award for highest mark in the 18th PhD Entrance Exam, Iran.

2002: Faculty Prize for excellent PharmD thesis, Kerman University of Medical Sciences, Iran.

2002: President's Award for Educational Excellence for highest GPA (18.00/20; 90.0%), Kerman University of Medical Sciences, Iran.

2001: Academic Excellence Award for elite pharmaceutical students, Kerman University of Medical Sciences, Iran.

2000: Faculty Prize for Best Poster Presentation at 7th National Pharmaceutical Students, Isfahan University of Medical Sciences, Iran.

1999: President's Award for Educational Excellence for highest mark in the Pharmaceutical Comprehensive Exam, Kerman University of Medical Sciences, Iran.

----------SELECTED PUBLICATIONS----------

1- S.A. Hosseini, A. Salehifard, M. Ghatrehsamani, H. Yaghoobi, F. Elahian, **S.A. Mirzaei***. CRISPR/Cas9 as precision and high-throughput genetic engineering tools in gastrointestinal cancer research and therapy. *Int J Biol Macromol* 2022. Impact factor 8.50, Q1

2- M. Safaei, P. Khosravian, S. Kazemi Sheykhshabani, G. Mardani, F. Elahian, and **S.A. Mirzaei***. Enzyme-sensitive nanoparticles, smart TAT and cetuximab conjugated immunoliposomes to overcome multidrug resistance in breast cancer cells. *Toxicol App Pharmacol* 2022. Impact factor 4.20, Q1

3- R. Heidari, P. Khosravian, **S.A. Mirzaei**, and F. Elahian*. siRNA delivery using intelligent chitosan-capped mesoporous silica nanoparticles for overcoming multidrug resistance in malignant carcinoma cells. *Scientific Reports* 2021. Impact factor 4.23, Q1

4- N. Gholamian, **S.A. Mirzaei**, and F. Elahian*. Pharmacodynamic mechanisms of anti-inflammatory drugs on the chemosensitization of multidrug-resistant cancers and the pharmacogenetics effectiveness. *Inflammopharmacology* 2021. Impact factor 4.43, Q1

5- F. Elahian, R. Heidari, V.R. Charghan, E. Asadbeik, and **S.A. Mirzaei***. Genetically modified Pichia pastoris, a powerful resistant factory for gold and palladium bioleaching and nanostructure heavy metal biosynthesis. *Artif Cells Nanomed Biotechnol* 2020. Impact factor 5.50, Q1

6- **S.A. Mirzaei**, F. Dinmohammadi, A. Alizadeh, F. Elahian*. Inflammatory pathway interactions and cancer multidrug resistance regulation. *Life Sciences* 2019, Impact factor 5.01, Q1

7- N. Gholamian, F. Elahian, P. Khosravian, and **S.A. Mirzaei***. Intelligent TAT-coupled anti-HER2 immunoliposomes knock downed MDR1 to produce chemosensitize phenotype of multidrug resistant carcinoma. *J Cellul Physiol* 2019. Impact factor 6.36, Q1

8- **S.A. Mirzaei**, S. Reiisi, P. Ghiasi, A. Shekari, F. Aliakbari, E. Azadfallah, and F. Elahian. Broad blocking of MDR efflux pumps by acetylshikonin and acetoxyisovalerylshikonin to generate hypersensitive phenotype of malignant carcinoma cells. *Scientific Reports* 2018. Impact factor 4.23, Q1

9- **S.A. Mirzaei**, N. Gholamian Dehkordi, M. Ghamghami, A.H. Amiri, E. Dalir Abdolahinia, F. Elahian. ABC-transporters block mediated by bergapten and xanthotoxin is the major pathway for chemosensitization of multidrug-resistant cancer cells. *Toxicol App Pharmacol* 2017. Impact factor 4.20, Q1

10- F. Elahian, S. Reiisi, A. Shahidi, **S.A. Mirzaei***. High-throughput bioaccumulation, biotransformation, and production of silver and selenium nanoparticles using genetically engineered *Pichia pastoris*. *Nanomedicine: NBM*; 2017. Impact Factor: 6.16, Q1

11- F. Elahian, B. Moghimi, **S.A. Mirzaei***; Human cytochrome b5 reductase: structure, function, and potential applications. *Crit Rev Biotechnol* 2012. Impact factor 6.55, Q1

Please refer to my ORCID and Scholar profile to see a full version of publications

ORCID: http://orcid.org/0000-0003-0307-3750

Google Scholar: https://scholar.google.com/citations?user=qdmSFaoAAAAJ&hl=en

----------NATIONAL PATENTS----------

1- **S.A. Mirzaei**, F. Elahian, N. Moein, and Y. Ayari. *A new method for DPPH antioxidation assessment*. Iran 83288, issued August 2014.

2- S.M.S. Mirzaei, **S.A. Mirzaei** and F. Elahian. *Green synthesis of selenium nanoparticles using genetically modified yeasts*. Iran 83194, issued July 2014

3- **S.A. Mirzaei**, F. Elahian, Z. Nouri, and V. Afshari. *A new method for beta-caroten antioxidation assessment*. Iran 83192, issued July 2014.

4- **S.A. Mirzaei**, F. Elahian, and V. Afshari. *A new model for genotoxicity and antigenotoxicity assessment*. Iran 82258, issued March 2014.

5- F. Elahian, **S.A. Mirzaei** and V. Afshari. *New formula for sheath fluid for flowcytometer*. Iran 81970, issued February 2014.

----------BOOK PUBLICATIONS----------

1- G. Zarrini, **S. A. Mirzaei**, F. Elahian; **PCR, The basics**, Ayeeze publication company; 2010, ISBN: 978-964-970-054-0.

2- **S.A. Mirzaei**, F. Elahian**,** Y. Ayari, M. Hashemi, and V. Afshari; **Gene therapy**, Teimurzadeh-Nowin publication company; 2013, ISBN: 978-600-6273-84-6.

----------GENE SUBMISSIONS----------

Several genes have been sequenced and deposited in the National Center for Biotechnology Information (NCBI) database. They are available at the following link: ***http://www.ncbi.nlm.nih.gov/nuccore/?term=Mirzaei+SA***

----------REFERENCES----------

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