

## Curriculum Vita-2025

**Dr. Mojgan Bandehpour**

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**Scopus H-index=29      Google Scholar H-index=35**

### **Scientific interests:**

- Recombinant Protein engineering and production
- Protein Bioinformatics and drug design

### **✓ •Educational background, work and executive background**

- PhD in Molecular Genetics, National Research Institute of Genetic Engineering and Biotechnology
- MSc in Medical Microbiology, Faculty of Medicine, Shahid Beheshti University of Medical Sciences
- BS in Laboratory Science, Tabriz University of Medical Sciences
  
- Member of the Medical Technology and Innovations Committee (NIMAD) since February 2024 for two years
- Launched the research laboratory of the University's Cellular and Molecular Biology Research Center in 2001
- Participated in launching the Biotechnology Department at the University's Faculty of Medicine in 2007 and was the first member of the department's faculty
- Launched the Research Vice-Chancellor of the University's Faculty of Modern Medical Technologies in 2015
- Holding a Molecular Medicine Conference in 2015
- Vice President of Research, Cellular and Molecular Biology Research Center since 2018
- Full-time member of the Cellular and Molecular Biology Research Center
- Founding Board Member, Cellular and Molecular Biology Research Center since 2014
- Editorial Board Member of the University's Trends in Proteins and Peptides Journal since 2013
- Editorial Board Member of the Cellular and Molecular News Journal since 2015

• **List of implemented and ongoing research projects**

- Obtaining new single-chain antibodies against human CD24 using phage display technique
- Designing production of IL-4 and GM-CSF cytokines and proving their function in vitro
- Investigating the effect of CDT toxin under a specific recombinant promoter on lung cancer cells
- Designing and synthesizing trivalent PBC vaccine against hepatitis B, C and polio and investigating its effect on dendritic cells
- Designing a vaccine against *Acinetobacter baumannii* using Reverse vaccinology method
- Design and synthesis of chimeric proteins of *Brucella abortus* and *melitensis* key epitopes
- Proteomics of Zanjani viper venom and production of its most effective enzyme in coagulation in recombinant form
- Comparison of *Lactobacillus casei* proteins under growth conditions in acidic and neutral environments and investigation of the antitumor effect of an acid-resistant gene construct under a clone-specific promoter in the HT-29 cell line
- Investigation of serum IL6 and IL6R expression levels and comparison with common mutations of the exons and promoters of these two genes in patients with rheumatoid arthritis
- Expression of recombinant engineered IL6R type 2 isoform and its effect on reducing joint inflammation in a mouse model of rheumatoid arthritis
- Design and expression of engineered PVP-SE1gp146 endolysin, a resistant antibacterial, in the methylotrophic yeast *Hansenella polymorpha*
- Study of the effect of engineered single-chain antibody (scFv) against CD20 loaded on iron oxide nanoparticles on Raji cell line
- Study of the prevalence of different types of HPV virus isolated from women suspected of cervical cancer by cytology, Realtime-PCR and Hybridization methods
- Design and production of albumin in rice plant
- Increasing the natural production of vincristine and vinblastine in the plant *Catharanthus roseus* L. with bio-fertilizer (mycorrhizal fungus)
- Design and expression of engineered PVP-SE1gp146 endolysin, a resistant antibacterial, in the methylotrophic yeast *Hansenella polymorpha*

- Expression of recombinant engineered IL6R type 2 isoform and its effect on reducing joint inflammation in a mouse model of rheumatoid arthritis

- Study of the effect of engineered anti-CD20 single-chain antibody (scFv) complex loaded on iron oxide nanoparticles on the CLL model cell line (Raji)

• **List of implemented and ongoing knowledge-based, semi-industrial, and industrial projects**

- Production of protein A for the synthesis of IgG purification resin

- Production of prothrombin

- Production of recombinant albumin

• **List of key publications (articles/books and other writings)**

1. Zohreh Jafari, Behnam Sedaghati, Mohammad Kaboli, Bahram Kazemi, **Mojgan Bandehpour\***, Isolation, Characterization, and Expression of the Montivipera raddei (Caucasus viper) venom metalloprotease like protein. *Research in Pharmaceutical Sciences*. 2025; 20 (2), 207-217

2. Pourgholam R, Kazemi B, Akhlaghi M, **Bandehpour M**, Sharifrohani M, Zorriehzahra S, Safari R, Zahedi A, Tahami F, Tabari Alavi E, Pourgholam H. A survey on achieving recombinant DNA vaccine (live delivery) against Streptococcus in rainbow trout (*Oncorhynchus mykiss*) immunization. *International Journal of Veterinary Research*. 2025, 5(1) 19-32

3. Ezatollah Mosavi, **Mojgan Bandehpour\***, Amrollah Mostafazadeh, Behnaz YousefGhahari, Fateme Majidi, Hakimeh Zali, Bahram Kazemi. Plasma TNF- $\alpha$  Elevation in Biologic Naive Rheumatoid Arthritis Patients Belonging to a Population with New Mutations in TLR4 and CYP51A1 genes without Association with Disease-Related Antibodies Levels. *International Journal of Molecular and Cellular Medicine*. 2024; 13(2):1-15.

4. Sepideh Ghani, **Mojgan Bandehpour\***, Fatemeh Yarian, Kaveh Baghaei. Production of a Ribosome-Displayed Mouse scFv Antibody Against CD133, Analysis of Its Molecular Docking, and Molecular Dynamic Simulations of Their Interactions. *Applied Biochemistry and Biotechnology*. 2024. 196:1399–1418

5. Mina Saadat, **Mojgan Bandehpour\***, Bahram Kazemi, Nariman Mosaffa. Immunogenic consideration of a designed polypeptide against Brucellosis compared to RB51: An in vivo study. *Avicenna Journal of Medical Biotechnology*. 2024; Avicenna Journal of Medical Biotechnology. Volume 16, Issue 4, 251-259

6. A Asadi-Saghandi, **M Bandehpour\***, A Hashemi, B Kazemi, Enzymatic and antibacterial activity of the recombinant endolysin PVP-SE1gp146 expressed in *Hansenula polymorpha*. *Protein Expression and Purification*, 2023, 125,106402
7. Maryam Rad, Gholamhossein Ebrahimipour, **Mojgan Bandehpour\***, Omid Akhavan, Fatemeh Yarian. SOEing PCR/Docking Optimization of Protein A-G/scFv-Fc-Bioconjugated Au Nanoparticles for Interaction with Meningitidis Bacterial Antigen. *Catalysts* 2023, 13, 790.  
<https://doi.org/10.3390/catal13050790>
8. Maryam Rad, Gholamhossein Ebrahimipour, **Mojgan Bandehpour\***, Omid Akhavan, Fatemeh Yarian. *Neisseria meningitidis* detection by coupling bacterial factor H onto Au/scFv antibody nanohybrids. *Applied Physics A* (2023) 129:401.
9. Jafari Z, **Bandehpour M\***, Kaboli M and B Kazemi. Partial proteomics of *Montivipera raddei* venom. 2023, *Trends Pept. Protein Sci.*, 8: e2.
10. Zohreh Jafari, **Mojgan Bandehpour**, Shivasadat Gheflat, Nasrin Mohammadi, Bahram Kazemi, Cloning, Expression and Purification of Full-length Recombinant Ecarin and Comparing Its Expression and Function with Its Truncated Form, *Iranian Journal of Pharmaceutical Research* 21; 2022, e2: 1-12
11. Nasrin Mohammadi, **Mojgan Bandehpour**, Fattah Sotoodeh nejadnematalahi, Bahram Kazemi, Prokaryotic expression, evaluation, and prediction of the structure and function of the ecarin metalloproteinase domain. *Proteins*. 2022. 1-8. DOI: 10.1002/prot.26275
12. M Mirzarazi, S Bashiri, A Hashemi, M Vahidi, B Kazemi, **M Bandehpour\***, The OmpA of commensal *Escherichia coli* of CRC patients affects apoptosis of the HCT116 colon cancer cell line. *BMC Microbiology* 2022;22 (1), 1-12
13. Mahsa Mirzarazi, **Mojgan Bandehpour\***, Apoptosis Induction by *Lactobacillus casei* Acidic Proteins in the Colorectal Cancer Cell Line. *Novel Biomed.* 2022;10(4):241-5.
14. Narges Dadfarma, Jamileh Nowroozi, Bahram Kazemi , **Mojgan Bandehpour\***, Identification of the effects of acid-resistant *Lactobacillus casei* metalloproteinase gene under colon-specific promoter on the colorectal and breast cancer cell lines, *Iranian Journal of Basic Medical Sciences*. 2021; 24:506-513
15. Mina Saadat, Masoud Gandomkar, Akram Bahreinipour, **Mojgan Bandehpour\***, Bahram Kazemi, Nariman Mosaffa. Evaluation of the designed multi-epitope protein of *Brucella melitensis* in guinea pigs. *Iran J Basic Med Sci.* 2021; 24:833-841
16. Sahar Sadeghi, **Mojgan Bandehpour\***, Mostafa HajiMolla Hosseini, Zarin Sharifnia. Intranasal administration of immunogenic poly-epitope from influenza H1N1 and H3N2 viruses adjuvanted with chitin and chitosan microparticles in BALB/c mice. *Iran J Basic Med Sci.* 2021; 24:1126-1137.
17. Sahar Sadeghi, **Mojgan Bandehpour\***, Mostafa HajiMolla Hosseini, Bahram Kazemi. Designing and Expression of an Immunogenic Poly-Epitope Protein from *Streptococcus pneumoniae*. *Trends Pept. Protein Sci.*, 2021; 6: e4.

18. Mahsa Mirzarazi, **Mojgan Bandehour**, Ali Hashemi, Mahmoud Vahidi, Afsoon Taghavi, Soroor Bashiri, Bahram Kazemi, Antibiotic Resistance, Phylogenetic Group, and enotyping Investigation in *Escherichia coli* Strains of Gut Flora in Patients with Colorectal Cancer in Iranian Population. *Biomed Biotechnol Res J* 2021;5:313-9.

19. Golgis Karimi, Mina Saadat, Gheflat Shivasadat, Kazemi Bahram, **Bandehpour M\***. The effect of three acid-resistant isolated proteins from *Lactobacillus casei* on lipid and carbohydrate metabolism pathway-related genes: An in vitro study. *Biomed Biotechnol Res J* 2021;5: 276-80.

20. Zahra Davoudi, Amirhossein Taramchi, Bahram Kazemi, **Mojgan Bandehpour\***, Nariman Mosaffa, Cloning, expression, purification and functional analysis of a specific multi-epitope protein from multi drug resistance *Acinetobacter baumannii*, *Iranian Journal of Microbiology*, 2021; 13: 642-652

- **Writing a book:**

- -Author of the book "Introduction to the Human Immune System and Types of Vaccines"
- -Author of the book "Protein Engineering"
- -Author of the book "Shewanella"

- **Theses (as a supervisor)**

- Design and synthesis of trivalent PBC vaccine against hepatitis B, C and polio and investigation of its effect on dendritic cells
- Design of *Mycobacterium tuberculosis* specific antibody in scFv form using ribosome display method
- Identification of new scFv single-chain antibodies against human CD24 using phage display technique
- Design of *Toxoplasma gondii* ELISA diagnostic kit with a polyantigenic protein derived from several parasite immunogenic epitopes
- Production of recombinant GM-CSF and IL-4 cytokines and investigation of their function
- Application of recombinant human TNFR in reducing the severity of arthritis in mice and comparing it with the drug treatment profile
- Design of polypeptide vaccine using ompA of *Acinetobacter baumannii* isolated from active hospital isolates and evaluation of antibody levels in mice
- Design of *Neisseria meningitidis* specific antibody in scFv form using ribosome display method

- Investigation of the effect of CDT toxin under a recombinant promoter specific for lung tissue in killing cancer cells
- Design and expression of engineered PVP-SE1gp146 endolysin, a resistant antibacterial, in the methylotrophic yeast *Hansenella polymorpha*
- Expression of recombinant engineered IL6R type 2 isoform and investigation of its effect in reducing joint inflammation in a mouse model of rheumatoid arthritis
- Investigation of the effect of engineered single-chain antibody (scFv) complex against CD20 loaded on iron oxide nanoparticles on the CLL model cell line (Raji)

- **Domestic and international patent registration**

- Construction of a specific killer vector for the treatment of lung cancer cells
- Construction of recombinant human interleukin 12 protein by indigenous Iranian *Leishmania* cells
- Recombinant human LH/FSH dual hormone
- Construction of a non-viral gene construct suitable for transferring the insulin gene to human cells

- **Awards**

- Selected at the Razi Festival
- Selected researcher at the Abu Raihan University Festival
- Selected at the University Educational Festival

- **Specialized courses completed**

- University EDC courses
- Various specialized workshops in Iran
- Microarray course in Lyon, France in 2008