

Dr. Akbar Farjadfar

Curriculum Vitae

Dr. Akbar Farjadfar

ADDRESS	Fasa, Fars Province, Iran, University of Medical Sciences
Phone	+989121769752
E-Mail	A.farjadfar@fums.ac.ir
Date of birth	30/08/1980
Place of birth	Langroud, Iran
Nationality	Iranian
Marital Status	Married



Professional experience

Fasa University of Medical Sciences

Department of medical biotechnology, Fars, Iran

2017-present

Teaching:

- Lecturer, *Immunology*, for M.Sc. student of *Medical biotechnology*, 2017-present
- Lecturer, *Immunochimi*, for M.Sc. student of *Medical biotechnology*, 2017-present
- Lecturer, *Genetic Engineering*, for M.Sc. student of *Medical biotechnology*, 2017-present
- Lecturer, *Biology*, for M.Sc. student of *Medical biotechnology*, 2017-present
- Lecturer, *Biochemistry*, for M.Sc. student of *Medical biotechnology*, 2017-present

Experience mentoring graduate students

- Five student, M.Sc. student in medical biotechnology

Research activities:

- Multiepitope vaccine
- Viral Vaccine
- DNA vaccine
- Gene therapy

Grants:

- 15 grant from Fasa University of Medical Sciences

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Managers :

- 1- **Executive Advisor of the Vis-Chancellor of academic affairs**
- 2- **Vis-Chancellor of academic and research affairs at the School of Modern Technologies**
- 3- **Manager and owner of the University entrance exam preparation institution**
 - ✓ Preparing students for the Iranian University per exams of biological subjects (bachelor, master and PhD applicants)
 - ✓ Lead a group of 10 teaching assistants
 - ✓ 200 students per year

Education

Ph.D. in Medical Biotechnology 2007-2014

- Institute Pasteur of Iran, Tehran
- Pasteur Institute Iran's oldest and highest ranked biotechnology Institute
- Second ranked student in Ph.D. entrance exam ("Konkour Sarasari Ministry of Health and Medical Education).
- **Thesis:** *Evaluation of Proapoptotic effects of MSC which secretes Endostatin and TRAIL on mouse cell line SVEC and 4T1 and mouse model*
- **Supervisor:** Prof. Dr. Sirous Zeinali, Dr. Hossein Khanahmad

M.Sc., in Immunology 2004-2007

- Shiraz University of Medical Sciences, Shiraz, Iran
- Highest ranked Institute in Immunology
- Fifth ranked student in the entrance exam
- **Thesis:** *Study of IL-18 Alleles & IL-18 serum level in lung cancer patients* Supervisor
- **Supervisor:** Prof. Dr. Abbas Ghaderi

B.Sc., in Medical Laboratory Sciences 2002-2004

- Iran University of Medical Sciences, Tehran, Iran
- Fourth ranked student in the entrance exam

Associate Degree in Medical Laboratory Sciences 1999-2002

- Chalus Azad University, Mazandaran, Iran

Publications

- 1- **Advanced simulations and screening to repurposing a 3C protease inhibitor against the rupintrivir-resistant human norovirus-induced gastroenteritis.** E Behmard, A Ghasemian, E Barzegari, A Farjadfar, A Kouhpayeh, Journal of Molecular Graphics and Modelling, 108345.2022
- 2-
- 3- **Design of a novel multi-epitope vaccine candidate against hepatitis C virus using structural and nonstructural proteins: An immunoinformatics approach.** E Behmard, HT Abdulabbas, S Abdalkareem Jasim, S Najafipour Akbar Farjadfar, Ebrahim Barzegari, Amin Kouhpayeh, Parviz Abdolmaleki. PloS one 17 (8), e0272582
- 4- **Therapeutic Effects of Mesenchymal Stem Cells Expressing Erythropoietin on Cancer-Related Anemia in Mice Model.** M Estiri, B Estiri, A Fallah, M Aghazadeh, A Sedaqati, A Abdollahi, M Rabienia, Nahid Mortazavidehkordi, A Farjadfar. Current Gene Therapy.2022
- 5- **The Unspecific Primers of Nuclear Factor-kappa B (NF-κB) Signaling Mediators.** A Moulazadeh, A Farjadfar, A Ghanbariasad Iranian Journal of Allergy, Asthma and Immunology 21 (2), 228.2021
- 6- **Overexpression Effects of miR-424 and BMP2 on the Osteogenesis of Wharton's Jelly-Derived Stem Cells.** A Fallah, M Alipour, Z Jamali, A Farjadfar, L Roshangar, M Partovi Nasr P Hashemi, MAghazadeh. BioMed Research International. 2021
- 7- **Exploring membrane proteins of *Leishmania major* to design a new multi-epitope vaccine using immunoinformatics approach.** Mahsa Rabienia¹, Zahra Roudbari², Ali Ghanbariasad¹, Abbas Abdollahi³, Elyas Mohammadi⁴, Nahid Mortazavidehkordi^{5*}, Akbar Farjadfar^{1*}. Eur J Pharm Sci.2020. Available online 10 June 2020, 105423
- 8- **A lentiviral vaccine expressing KMP11-HASPB fusion protein increases immune response to *Leishmania major* in BALB/C.** Mortazavidehkordi N, Fallah A, Abdollahi A, Kia V, Khanahmad H, Ghayour Z, Hashemi N, Estiri B, Roudbari Z, Najafi A, Farjadfar A*, Hejazi SH. Parasitology research.2018 117 (7), 2265-2273

- 9- Multiple Sclerosis gene therapy with recombinant viral vectors: Overexpression of IL-4, LIF, and IL-10 in Wharton, s jelly stem cells used in EAE mice model. Hosseini A, Estiri H, Niaki H, Alizadeh A, Abdolhosseinzadeh B, Ghaderian SM, Farjadfar A, Fallah A. *Cell j*. 2016.
- 10-Evaluation of a novel lentiviral vaccine expressing KMP11- HASPB fusion protein against *Leishmania infantum* in BALB/c mice. Mortazavidehkordi N, Farjadfar A, Khanahmad H, Ghayour Najafabadi Z, Hashemi N, Fallah A, Najafi A, Kia V, Hejazi SH. *Parasite Immunol*. 2016 Aug 19.
- 11-in vitro assay to evaluate the immunomodulatory effects of unrestricted somatic stem cells. Ebrahimi H, Soleimani M, Kazemi Arababadi M, Ahmadbeigi N, Hassanshahi G, Farjadfar A, Kennedy D. *Iran J Immunol*. 2010 Mar;7(1):30-8.
- 12-Interleukin-18 promoter polymorphism is associated with lung cancer: a case-control study. Farjadfar A, Mojtahedi Z, Ghayumi MA, Erfani N, Haghshenas MR, Ghaderi A. *Acta Oncol*. 2009;48(7):971-6.

Under review article

- 1- Enhancement of humoral immunity with a new multi-epitope vaccine against COVID-19: an *in silico* study. Zahra Roudbari, Mahsa Rabienia, Sohrab Najafipour, Nahid Mortazavidehkordi, Akbar Farjadfar*. *scientific reports*
- 2- Immunogenicity evaluation of a novel Lentiviral vaccine expressing multi-epitope against of *Leishmania major* in BALB/c mice. Mahsa Rabienia¹, Zahra Roudbari², Ali Ghanbariasad¹, Abbas Abdollahi³, Elyas Mohammadi⁴, Nahid Mortazavidehkordi^{5*}, Akbar Farjadfar^{1*}. *frontiers in immunology*.
- 3- Investigation of *Leish 111f* epitopes to design a new multi-epitope vaccine against *Leishmania major* using immunoinformatics approaches. Mahsa Rabienia¹, Zahra Roudbari², Abbas Abdollahi³, Nahid Mortazavidehkordi^{5*}, Akbar Farjadfar^{1*}. *international journal of biological macromolecules*
- 4- Evaluation of a novel lentiviral vaccine expressing *Leish-111f* multi epitope against *Leishmania major* in BALB/c mice. Rasoul Daneshi, Zahra Roudbari², Abbas Abdollahi³, Nahid Mortazavidehkordi^{5*}, Akbar Farjadfar^{1*}. *Vaccine*

Abstract

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- 1- **Evaluation of gene therapy in spinal cord injury using of neurotrophic factor BDNF and regulation with miR-9/124 in SCI rat model.** B Estiri, M Estiri, MR Davari, M Aghazadeh, M Rabienia, H Baghban, **A Farjadfar***.2018, HUMAN GENE THERAPY 29 (12), A88
- 2- **Evaluation of proapoptotic effects of MSC expressing endostatin and TRAIL on SVEC and 4T1 cell lines and mouse model.** **A Farjadfar**, A Fallah, H Khanahmad, M Soleimani, A Abodollahi, S Najafipoure. 2018, HUMAN GENE THERAPY 29 (12), A47
- 3- **Gene therapy of breast cancer related anemia by delivering of erythropoietin in mice model.** **A Farjadfar**, M Estiri, B Estiri, A Fallah.2018, HUMAN GENE THERAPY 29 (12), A43-A44
- 4- **KMP11-HASPB Fusion protein-expressing lentiviral vaccine protects BALB/C mice against leishmania major infection.** Nahid Mortazavidehkordi; Seyed Hossein Hejazi; **Akbar Farjadfar**; Hossein Khanahmad; Zahra Ghayour. 2017. 6th world congress on leishmaniasis, Spain.
- 5- **Evaluation of a novel lentiviral vaccine expressing KMP11-HASPB fusion protein against leishmania infantum in BALB/C mice.** Seyed Hossein Hejazi; Nahid Mortazavidehkordi; **Akbar Farjadfar**; Hossein Khanahmad; Zahra Ghayour Najafabadi. 2017. 6th world congress on leishmaniasis, Spain.

Current research projects

1. **Designing and Immunogenicity Evaluation of a new DNA Vaccine Expressing Pr-S-E-M multiepitopes of SARS-COV2 in BALB/c Mice.** Apr 2020
2. **Immunogenicity Evaluation of a DNA Vaccine Expressing KMP11-HASPB epitopes in BALB/c Mice.** May 2019
3. **Evaluation of a lentiviral vaccine expressing epitopes of Leish-111F against Leishmania major in BALB/c mice.** Jul 2019
4. **Evaluation of plasmid DNA expressing p53-loading MOF on breast cancer cell line.** Mar 2019

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5. **Evaluation of Aurora kinase A gene knocks out in breast cancer cell line using CRISPR/Cas9 system.** Mar 2019
6. **Gene therapy of breast cancer associated anemia by delivering of erythropoietin in mice.** Apr 2019
7. **Improving of gene therapy using Tissue-Specific Promoter and MicroRNA regulation.** Jun 2019

Book

- 1- **Laboratory diagnosis of communicable diseases in Iran.** (2006). *Shiraz University of medical science publication*
- 2- **Overview of Leishmania.** (2011). *Khosravi Medical Publication*

Technical Experience

Protein skills:

- Bacterial protein expression
- Protein Isolation from prokaryote and eukaryote
- Protein production
- Protein purification
- SDS-PAGE,
- Western blot

Immunology skills:

- Sandwich ELISA development,
- Isolation of murine immune cells (splenic T-lymphocytes and B-lymphocytes)
- Flow cytometry

Molecular Biology skills:

- Bacterial culture
- Transformation
- Plasmid Extraction
- Genomic DNA extraction
- Gene Cloning
- RNA extraction
- Primer design
- Real Time-PCR

Virology skills

- Recombinant virus production

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- Virus Titration

Cell Biology skills

- Transfection
- Cell counting (haemocytometer),
- Fluorescent microscopy,
- Cell proliferation assay
- Cell migration assay
- Invasion assay
- Apoptosis assay
- Luciferase assay

Animal skills

- Animal Anesthesia/Euthanasia
- IP, IV, IM, ID and SC injection
- Primary Cell isolation (Spleen, Liver, Lymph node)
- Xenograft implantation

Bioinformatic skills

- T cell epitope prediction (PropredI, IEDB, SYFPEITHI)
- IFN- γ inducing epitopes prediction (<http://crdd.osdd.net/raghava/ifnepitope/>)
- B cell epitope prediction (EliPro server)
- 3D structure prediction, Reifinement and Validation. (Muster, RaptorX, Galaxy Refine server,
- Molecular docking (PyMOL, PyRx)
- Physico-chemical parameters
- Antigenicity and Allergenicity
- In silico codon optimization

Language Skills

- Farsi/Persian
- English

Workshops(selected):

- Flowcytometry workshop. Shahid behshti University of Medical Sciences, Iran 2018
- Cell culture workshop, Pasteur institute of Iran, Iran 2016
- Stem cell workshop. Royan Institute, Iran 2018
- Primer design and RT-PCR workshop. Iran University of Medical Sciences, Iran, 2017
- Laboratory Animal handling. Fasa University of Medical Sciences, Iran, 2019
- Real time PCR workshop. Tehran University of Medical Sciences, Iran, 2018