

In The Name Of GOD

Curriculum Vitae

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POSITIONS

2025- cont Assistant Professor, Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences

2021- 2025 Research Expert, Poostchi Ophthalmology Research Center, Shiraz University of Medical Sciences

EDUCATION

2015- 2021 Tabriz University of Medical Sciences, PhD in the Field of Medical Biotechnology

2011- 2013 Shahed University, MSc in the field of Microbial Biotechnology

HONORS

- The best (No. 1) PhD student in Tabriz University of Medical Sciences, (2017) Tabriz, Iran. (Average grade of 19.25)
- The prominent researcher in the field of Medical Biotechnology in Iran, Student research committee, 2021, Tehran, Iran.
- The Member of Brilliant Talents Office in Tabriz University of Medical Sciences (2021)

PEER-REVIEWED PUBLICATIONS

1. **Baghban R**, Namvar E, Attar A, Mortazavi M. Progressing nanotechnology to improve diagnosis and targeted therapy of Diabetic Retinopathy. *Biomedicine & Pharmacotherapy*. 2025;183:117786.
2. **Baghban R**, Bamdad S, Attar A, Mortazavi M. Implications of nanotechnology for the treatment of Dry Eye Disease: Recent advances. *International Journal of Pharmaceutics*. 2025;125355.
3. **Baghban R**, Talebnejad MR, Meshksar A, Heydari M, Khalili MR. Recent advancements in nanomaterial-laden contact lenses for diagnosis and treatment of glaucoma, review and update. *Journal of Nanobiotechnology*. 2023;21(1):402.
4. **Baghban R**, Ghasemian A, Mahmoodi S. Nucleic acid-based vaccine platforms against the coronavirus disease 19 (COVID-19). *Archives of Microbiology*. 2023;205(4):150.
5. Rahimi M, Mir SM, **Baghban R**, Charmi G, Plummer CM, Shafiei-Irannejad V, et al. Chitosan-based biomaterials for the treatment of bone disorders. *International Journal of Biological Macromolecules*. 2022;215:346-67.
6. Afarid M, Mahmoodi S, **Baghban R**. Recent achievements in nano-based technologies for ocular disease diagnosis and treatment, review and update. *Journal of Nanobiotechnology*. 2022;20(1):361.
7. Ghasemali S, Farajnia S, Barzegar A, Rahmati-Yamchi M, **Baghban R**, Rahbarnia L, et al. New developments in anti-angiogenic therapy of cancer, review and update. *Anti-Cancer Agents in Medicinal Chemistry-Anti-Cancer Agents*. 2021;21(1):3-19.
8. **Baghban R**, Ghasemali S, Farajnia S, Hoseinpoor R, Andarzi S, Zakariazadeh M, et al. Design and in silico evaluation of a novel cyclic disulfide-rich anti-VEGF peptide as a potential antiangiogenic drug. *International Journal of Peptide Research and Therapeutics*. 2021;27:2245-56.

9. **Baghban R**, Farajnia S, Ghasemi Y, Mortazavi M, Ghasemali S, Zakariazadeh M, et al. Engineering of ocriplasmin variants by bioinformatics methods for the reduction of proteolytic and autolytic activities. Iranian Journal of Medical Sciences. 2021;46(6):454.
10. **Baghban R**, Afarid M, Soleymani J, Rahimi M. Were magnetic materials useful in cancer therapy? Biomedicine & Pharmacotherapy. 2021;144:112321.
11. Mohammadi S, Farajnia S, Shadmand M, Mohseni F, **Baghban R**. Association of rs780094 polymorphism of glucokinase regulatory protein with non-alcoholic fatty liver disease. BMC Research Notes. 2020;13:1-5.
12. **Baghban R**, Roshangar L, Jahanban-Esfahlan R, Seidi K, Ebrahimi-Kalan A, Jaymand M, et al. Tumor microenvironment complexity and therapeutic implications at a glance. Cell Communication and Signaling. 2020;18:1-19.
13. **Baghban R**, Farajnia S, Ghasemi Y, Mortazavi M, Samadi N, Zarghami N. Assessment of E. coli Expression System for Overexpression of Active Recombinant Ocriplasmin. Advanced Pharmaceutical Bulletin. 2020;11(3):564.
14. **Baghban R**, Farajnia S, Ghasemi Y, Hoseinpoor R, Safary A, Mortazavi M, et al. Mutational analysis of ocriplasmin to reduce proteolytic and autolytic activity in Pichia pastoris. Biological Procedures Online. 2020;22:1-12.
15. Zarredar H, Pashapour S, Ansarin K, Khalili M, **Baghban R**, Farajnia S. Combination therapy with KRAS siRNA and EGFR inhibitor AZD8931 suppresses lung cancer cell growth in vitro. Journal of cellular physiology. 2019;234(2):1560-6.
16. Sefid F, **Baghban R**, Payandeh Z, Khaledi B, Mahmoudi Gomari M. Structure evaluation of iron for designing a vaccine against Escherichia Coli, an in silico approach. Journal of Medical Microbiology and Infectious Diseases. 2019;7(4):93-106.
17. Rahbarnia L, Farajnia S, Naghili B, Ahmadzadeh V, Veisi K, **Baghban R**, et al. Current trends in targeted therapy for drug-resistant infections. Applied microbiology and biotechnology. 2019;103:8301-14.
18. L Ahmadkhani EM, S Ghasemali, **Baghban R**, H Pazoki-Toroudi, S Davaran, J Malakootikhah, N Asadi, L Mammadova, S Saghi, T J Webster, A Akbarzadeh. Development

and characterization of a novel conductive polyaniline-g-polystyrene/Fe₃O₄ nanocomposite for the treatment of cancer. *Artificial cells, nanomedicine, and biotechnology*. 2019;47(1):873-81.

19. **Baghban R**, Farajnia S, Rajabibazl M, Ghasemi Y, Mafi A, Hoseinpoor R, et al. Yeast expression systems: overview and recent advances. *Molecular Biotechnology*. 2019;61:365-84.

20. Ahmadzadeh V, Farajnia S, **Baghban R**, Rahbarnia L, Zarredar H. CRISPR-Cas system: Toward a more efficient technology for genome editing and beyond. *Journal of Cellular Biochemistry*. 2019;120(10):16379-92.

21. **Baghban R**, Farajnia S, Ghasemi Y, Mortazavi M, Zarghami N, Samadi N. New developments in *Pichia pastoris* expression system, review and update. *Current pharmaceutical biotechnology*. 2018;19(6):451-67.

22. **Baghban R**, Gargari SLM, Rajabibazl M, Nazarian S, Bakherad H. Camelid-derived heavy-chain nanobody against *Clostridium botulinum* neurotoxin E in *Pichia pastoris*. *Biotechnology and applied biochemistry*. 2016;63(2):200-5.

PARTICIPATION IN RESEARCH PROJECTS

1. Research project entitled Recent achievements in nano-based technologies for ocular disease diagnosis and treatment, review and update
2. Research project entitled Recent advancements in nanomaterial-laden contact lenses for diagnosis and treatment of glaucoma, review and update
3. Research project entitled Molecular docking, molecular dynamics simulation and analysis of peptides derived from ranibizumab antibody against VEGF
4. Research project entitled Bioinformatics study of CFH and ARMS genes and proteins as effective factors in the development of age-related macular degeneration (AMD).

5. Research project entitled an update on the effects and complications of botulinum toxin in the management of third, fourth, and sixth nerve palsy: A narrative review
6. Research project entitled Mutational analysis of Ocriplasmin to reduce proteolytic and autolytic activity in *Pichia pastoris*
7. Research project entitled Association of rs780094 polymorphism of glucokinase regulatory protein with non-alcoholic fatty liver disease
8. Research project entitled Design and in silico evaluation of novel cyclic disulfide-rich peptides as a potential antiangiogenic drug
9. Research project entitled Nucleic Acid-Based Vaccines Platform Against Covid-19 Pandemic

PRESENTATIONS AT CONGRESSES AND SEMINARS

1. **Baghban R**, Afarid M, Ghasemali S, Zamani J, Zaree A. In silico design and analysis of a novel ranibizumab-derived peptide against the VEGF. Conference: 30th Seminar of Ophthalmology, Department of Ophthalmology, Shiraz University of Medical Sciences. May 15–17, 2025, Shiraz, Iran.
2. **Baghban R**, Namvar E, Attar A, Mortazavi M. Emerging Trends in Nanomedicine for Diagnosis and Treatment of Diabetic Retinopathy: Progress, Challenges and Opportunities. Conference: 30th Seminar of Ophthalmology, Department of Ophthalmology, Shiraz University of Medical Sciences. May 15–17, 2025, Shiraz, Iran.
3. **Baghban R**, Farajnia S, Ghasemi Y, Zarghami N. Cloning and expression of Ocriplasmin in *Pichia pastoris* expression system. Conference: 20th National & 8th International Congress of Biology, August 22-24, 2018, Maragheh, Iran.

4. **Baghban R**, Payandeh Z. Bioinformatics analysis and identification of antigen-binding regions in VHH against Clostridium botulinum neurotoxin E. Conference: 13th International Congress of Immunology and allergy. April 26-29, 2017, Tabriz, Iran.
5. **Baghban R**, Payandeh Z, Sefid F. Assessment of features and examination of structural and functional role of the amino acids that make neurotoxin botulinum (BoNT) type E. Conference: 13th International Congress of Immunology and allergy. April 26-29, 2017, Tabriz, Iran.
6. **Baghban R**, Mousavi SL, Rajabi bazl M, Nazariyan Sh, Bakherad H, pourasadi sh. Expression of Camelid-derived heavy chain antibody (nanobody) against Clostridium botulinum neurotoxin E in *Pichia pastoris*. Conference: 11th International Congress of Immunology and allergy. April 26-29, 2012, Tehran, Iran.
7. **Baghban R**, Rajabi bazl M, Sefid F. Bioinformatics analysis and identification of epitops linear and conformational neurotoxins botulinum type E. Conference: First National Congress on Computational Science. September 6-7, 2012, Damghan, Iran.

ATTENDANCE IN CONFERENCES AND WORKSHOPS

1. Attendance in the international Congress on Stem Cells and Regenerative Medicine held in Mashhad, Iran, May 20-22, 2015.
2. Attendance in the international Congress of Immunology and Allergy of Iran, Tabriz, Iran, April 26-29, 2016.
3. Attendance and Collaboration in the workshop on the basics of biosafety in the laboratory, Tabriz, Iran, May, 31, 2015.
4. Attendance in the course of Bioinformatics and Computational Biochemistry: A Drug Design approach, Tabriz, Iran, May, 10, 2016.
5. Attendance in the research Workshop on writing scientific articles in English, Tabriz, Iran, 2016.

6. Attendance in the research Workshop on Molecular Dynamic Simulation, Tabriz, Iran, 2019.
7. Attendance in the research Workshop on Generalities of ethics in publishing and research, Tabriz, Iran, 2019.
8. Attendance in the research Workshop on Ethics in laboratory studies, Tabriz, Iran, 2021.
9. Attendance in the Biotechnology updates (2) webinar entitled Corona Vaccines: Made in Iran, Shiraz, Iran, 2021.

EXPERIENCES

- Planning and designing scientific projects
- Consultation and Referee of scientific manuscripts
- Collaboration in Scientific Research
- Writing Scientific Manuscripts

RESEARCH INTERESTS AND EXPERIENCES

- ✓ Primer Designing
- ✓ PCR
- ✓ Real-Time PCR
- ✓ SOEing PCR
- ✓ DNA extraction from yeast
- ✓ Agarose Electrophoresis
- ✓ Isolation of plasmid DNA from *E. coli* and yeast
- ✓ Yeast and Bacterial Cloning
- ✓ Yeast and bacteria cell culture
- ✓ SDS-PAGE
- ✓ PAGE Electrophoresis
- ✓ Western Blot
- ✓ Laboratory Mouse handling
- ✓ Laboratory Rabbit handling
- ✓ Electrical and chemical transformation
- ✓ Expression and purification of protein in yeast and bacteria
- ✓ Dialysis

- ✓ Affinity Chromatography
- ✓ ELISA
- ✓ Affinity measurement
- ✓ Ability in using Excel, Endnote and Reference manager
- ✓ Bioinformatics: Sequence analysis with BLAST, ClustalW and ..., Oligo, Homology Modeling and analysis of 3D structure of proteins using phyre2
- ✓ Docking
- ✓ Molecular dynamic simulation (GROMACS)
- ✓ Cell culture
- ✓ MTT assay
- ✓ Flow cytometry

PEER REVIEWING IN JOURNALS

- European Journal of Integrative Medicine
- Iranian Journal of Allergy, Asthma and Immunology

LANGUAGES

- English (MHLE and MCHE certificates)
- Persian