

Curriculum Vitae

Nastaran Khodadad

Ph.D. in Medical Virology

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Research Interests

- My research interests primarily lie in the field of molecular genetics, particularly in Virology. The principle of my current research plan is to focus on designing viral vaccines with more of an emphasis on human immunodeficiency virus (HIV).

Education

- **Ph.D.** in Medical Virology, “Ahvaz Jundishapur University of Medical Sciences” Ahvaz, Iran (2015-2020)
- **M.Sc.** in Medical Virology, “Shiraz University of Medical Sciences” Shiraz, Iran (2011-2015)
- **B.Sc.** in Microbiology, “Islamic Azad University of Kazeroon” Kazeroon, Iran (2004-2008)

Thesis Titles

- ✓ **Ph.D. Thesis title:**
 - Molecular characterization and phylogenetic analyses of full-length viral genomes from Iranian patients with chronic hepatitis B virus
- ✓ **M.Sc. Thesis title:**
 - Prevalence of Influenza A (H1N1) pdm09 Virus Resistant to Oseltamivir in Shiraz, Iran, During 2012–2013

Teaching Positions

- (2022-2023) Lecturer of Medical Virology, Gerash School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran
- (2022-2023) Lecturer of Medical Virology, Darab School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran
- (2021-2022) Lecturer of Medical Virology, Estahban School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran
- (2018-2019) Lecturer of General Virology, Ahvaz Jundishapur University of Medical Sciences (AJUMS), Ahvaz, Iran
- (2017-2018) Lecturer of General Virology, Ahvaz Jundishapur University of Medical Sciences (AJUMS), Ahvaz, Iran

- (2017-2018) Lecturer of Medical Virology, Abadan University of Medical Sciences (AUMS), Abadan, Iran
- (2016-2017) Lecturer of General Virology, Ahvaz Jundishapur University of Medical Sciences (AJUMS), Ahvaz, Iran
- (2016-2017) Lecturer of Veterinary Virology, Elmi Karbordi Shiraz University, Shiraz, Iran
- (2015-2016) Lecturer of General Microbiology Lab, Elmi Karbordi Shiraz University, Shiraz, Iran
- (2015-2016) Lecturer of Milk Microbiology, Elmi Karbordi Shiraz University, Shiraz, Iran

Technical Skills

<p>DNA, RNA and Protein techniques</p>	<ul style="list-style-type: none"> ▪ Nested-PCR, RT-PCR, Real-time PCR ▪ Gene cloning (directional and TA cloning in any vector) ▪ CRISPR-Cas9 system ▪ Transformation and transfection of DNA and RNA in prokaryotic and eukaryotic cells ▪ DNA and RNA Extraction from any sample, and Preparation of Plasmid DNA
<p>Cell culturing techniques</p>	<ul style="list-style-type: none"> ➤ Authority to Primary & continuous cell culture technique ➤ Virus culture technique and purification ➤ Viral Plaque Assay and TCID50% technique for titration of the virus ➤ MTT assay
<p>Conventional assays</p>	<ul style="list-style-type: none"> ▪ Hemagglutination assay (HA), Hemagglutination inhibition test (HI) ▪ ELISA
<p>Bioinformatics</p>	<ul style="list-style-type: none"> ❖ Working with many software packages including SnapGene, CLC sequence viewer, MEGA, RDP4, BioEdit, Sequin, Chromas, and many other online available programs used in bioinformatics for gene and protein besides phylogenetic analysis viruses and enzymatic bioassays. ❖ Docking protein-ligand using by (Hex, AutoDock Vina, Discovery, LigPlot, PMV, YASARA) ❖ Molecular Dynamic using by GROMACS
<p>IT and Statistical Skills</p>	<ul style="list-style-type: none"> ▪ Highly skilled at working with power-point, word, Excel ▪ Advanced search ▪ Endnote ▪ SPSS ▪ Communication tools (Email, Social media, video and web conferencing)
<p>Research Skills</p>	<ul style="list-style-type: none"> ✓ Writing research proposals ✓ Writing scientific papers
<p>Sequences Data Submitted to GenBank</p>	
<ul style="list-style-type: none"> ▪ (5) Complete genome sequences of Hepatitis B Virus (HBV). ▪ (19) Hemagglutinin (HA) & Neuraminidase (NA) gene sequences of Influenza A virus (H1N1) 	
<p>Publications (Journals)</p>	

1. Ghasabi F, Hashempour A, **Khodadad, N.**, Bemani S, Keshani P, Shekiba MJ, Hasanshahi Z. First report of computational protein–ligand docking to evaluate susceptibility to HIV integrase inhibitors in HIV-infected Iranian patients. *Biochemistry and Biophysics Reports*. (2022 Jul)1;30:101254.
2. **Khodadad, N.**, Seyedian SS, Haghighi SB, Makvandi M. Molecular characterization and phylogenetic analyses of full-length viral genomes from Iranian patients with chronic hepatitis B virus. *Future Virology*. (2021) Oct; 16(10):667-75.
3. **Khodadad, N.**, Fani.M, Jamehdor.S, Nahidsamiei.R, Makvandi.M, Kaboli.S, Teimoori.A, Thekkiniath.J; (2020) “A knockdown of the herpes simplex virus type-1 gene in all-in-one CRISPR vectors” DOI: 10.5603/FHC.a2020.0020•Pubmed: 32937678•*Folia Histochem Cytobiol* 2020; 58(3):174-181.
4. **Khodadad, N.**, Seyedian.S.S, Moattari.A, Biparva Haghighi.S, Pirmoradi.R, Abbasi.S, Makvandi.M; (2020) “In silico functional and structural characterization of hepatitis B virus PreS/S-gene in Iranian patients infected with chronic hepatitis B virus genotype D” .<https://doi.org/10.1016/j.heliyon.2020.e04332>.
5. **Khodadad, N.**, Fani.M, Ebrahimi.S, Nahidsamiei.R, Makvandi.M, Teimoori.A, Langari.H; (2020) “Zinc Sulfate in Narrow Range as an In Vitro Anti-HSV-1 Assay” .<https://doi.org/10.1007/s12011-019-01728-0>.
6. Mirzaei.H, **Khodadad, N.**, Karami.Ch, Pirmoradi.R, Khanizadeh.S; (2020) “The AP-1 pathway; A key regulator of cellular transformation modulated by oncogenic viruses”. <https://doi.org/10.1002/rmv.2088>.
7. Makvandi.M, Mombeini.H, Biparva Haghighi.S, Dastoorpoor.M, **Khodadad, N.**, Karimi Babaahmadi.M, Tabasi.M, Pirmoradi.R; (2020) “Molecular epidemiology of JC polyomavirus in HIV-infected patients and healthy individuals from Iran”. <https://doi.org/10.1007/s42770-019-00117-y>
8. Nahid Samiei.R, Ebrahimi.S, Fani.M, Ghafari.S, Makvandi.M, **Khodadad, N.**, Tabasi.M, Teimoori.A; (2020) “In vitro effect of some nucleoside reverse transcriptase inhibitors against HSV-1 replication”. DOI: 10.26355/eurrev_202002_20204.
9. Fani.M, Zandi.M, Rezayi.M, **Khodadad, N.**, Langari.H, Amiri.I; (2018) “The Role of microRNAs in the Viral Infections”. DOI: <https://doi.org/10.2174/1381612825666190110161034>.
10. **Khodadad, N.**, Moattari, A., Shamsi Shahr Abadi, M., Kadivar, M. R., Sarvari, J., Tavakoli, F., Pirbonyeh, N., & Emami, A. (2015). “Prevalence of Influenza A (H1N1) pdm09 Virus Resistant to Oseltamivir in Shiraz, Iran, During 2012–2013”. <https://doi.org/10.5812/jjm.23690>.
11. Moattari, A., Deghani, B., **Khodadad, N.** et al. (2015) “In Silico Functional and Structural Characterization of H1N1 Influenza A Viruses Hemagglutinin, 2010–2013, Shiraz, Iran”. <https://doi.org/10.1007/s10441-015-9260-1>.
12. Tavakoli, F., Moattari, A., Shamsi Shahr Abadi, M., Kadivar, M., **Khodadad, N.**, Pirbonyeh, N., Emami, A. (2015) “Antigenic Variation of the Haemagglutinin Gene of the Influenza A (H1N1) pdm09 Virus Circulating in Shiraz, February-April 2013”. *Iranian Journal of Immunology*, 2015; 12(3): 198-208.

Articles in press

1. Global Evolution, Genotyping Investigation and Geographical Distribution of Human Herpesvirus 8
2. HIV co-receptor tropism usage: first report from the Iranian Patients

3. First Report of Human Herpesvirus-8 Infection in Iranian Cirrhotic Patients on the Waiting List for Liver Transplantation
4. HIV-1 glycoprotein 41 molecular docking analysis and transmitted drug resistance mutations among antiretroviral therapy-naïve individuals in Iranian patients
5. A CRISPR-Cas9 system for genome editing in ASS1 gene of human cells to predict its effect on HSV-1 replication
6. Genomic Analysis of E1A & E1B genes from human Adenovirus type 8 in patients with adenoviral keratoconjunctivitis in Ahvaz city, Iran

Ongoing Research Projects

1. Computational protein-ligand docking to evaluate susceptibility to HIV protease inhibitors on Gag gene in HIV-infected Iranian Patients
2. Determination of human immunodeficiency virus (HIV-1) subtype based on integrase gene in HIV infected patients
3. Molecular pathways contributing to the development of metabolic syndrome following viral infections
4. In Silico Prediction and Docking of Tertiary Structure of Hepatitis B Virus X gene
5. Determination of human immunodeficiency virus (HIV-1) subtype based on Gag gene in HIV infected patients.
6. Computational protein-ligand docking to evaluate susceptibility to HIV protease inhibitors on Gag-Protease in HIV-infected Iranian Patients
7. Determination of human immunodeficiency virus (HIV-1) subtype based on Protease gene in HIV infected patients.
8. Computational protein-ligand docking to evaluate susceptibility to HIV protease inhibitors on Protease gene in HIV-infected Iranian Patients

Attended Short Courses, Workshops

1. The role of scholarly social networks in promoting research indicators (2) LinkedIn and its applications, Shiraz University of Medical Sciences, Iran (2023)
2. The role of scientific social networks in improving research indicators (1): Research Gate and its applications, Shiraz University of Medical Sciences, Iran (2023)
3. Acquaintance with discontinued journals in the Scopus database, Shiraz University of Medical Sciences, Iran (2022)
4. Conducting a familiarization workshop on choosing the right journal to publish an article, Shiraz University of Medical Sciences, Iran (2022)
5. Ethics in research with the approach of ethics in publishing scientific works, Shahrekord University of Medical Sciences, Iran (2022)
6. Principles of Gene editing and sgRNA design workshop, NIGEB, Tehran, Iran (2022)
7. Criteria to detect the predatory and black list journals, Shiraz University of Medical Sciences, Iran (2022)
8. The application of Bioinformatics in HIV Gene Analysis, Shiraz HIV/AIDS Research Center (2021)

9. In Silico Prediction of Tertiary Protein Structure, Refinement, and Validation, Shiraz HIV/AIDS Research Center (2021)
10. Molecular Docking, Shiraz HIV/AIDS Research Center (2021)
11. T-cell and B-cell epitope detection, Shiraz HIV/AIDS Research Center (2021)
12. Physicochemical properties of proteins, Shiraz HIV/AIDS Research Center (2021)
13. Protein Post-Translational Modifications, Shiraz HIV/AIDS Research Center (2021)
14. Retrieving data from GenBank, Shiraz HIV/AIDS Research Center (2021)
15. Drug resistance Analysis, Shiraz HIV/AIDS Research Center (2021)
16. An introductory workshop on scientific writing, Shiraz University of Medical Sciences, Iran (2021)
17. 5 days' workshop on bioinformatics tools introduction, HIV/AIDS Research Center, Shiraz University of Medical Sciences, Iran (2021)
18. Introduction to statistical analysis of data with SPSS software, Shiraz University of Medical Sciences, Iran (2021)
19. Information management in Mendeley software, Fasa University of Medical Sciences, Iran (2021)
20. Familiarity with the concepts and principles of searching databases, Shiraz University of Medical Sciences, Iran (2021)
21. Search for clinical evidence at the Pubmed database, Shiraz University of Medical Sciences, Iran (2021)
22. Search the Scopus database, Shiraz University of Medical Sciences, Iran (2021)
23. Wealth creation, Shiraz University of Medical Sciences, Iran. (2021)
24. 2 days' workshop on Real-time PCR training, Ahvaz Jundishapur University of Medical Sciences, Iran (2019)
25. How to write an article globally, Ahvaz Jundishapur University of Medical Sciences, Iran (2017)
26. Proposal Writing and Search Workshop, Shiraz University of Medical Sciences, Iran (2012)
27. Safety and protection workshop in biomedical laboratories, Shiraz University of Medical Sciences, Iran (2011)

Workshops Held

1. The application of Bioinformatics in HIV Gene Analysis, Shiraz HIV/AIDS Research Center (July, 2022)
2. In Silico Prediction of Tertiary Protein Structure, Refinement, and Validation, Shiraz HIV/AIDS Research Center (July, 2022)
3. Molecular Docking, Shiraz HIV/AIDS Research Center (July, 2022)
4. T-cell and B-cell epitope detection, Shiraz HIV/AIDS Research Center (July, 2022)
5. Physicochemical properties of proteins, Shiraz HIV/AIDS Research Center (July, 2022)
6. Protein Post-Translational Modifications, Shiraz HIV/AIDS Research Center (July, 2022)
7. Retrieving data from GenBank, Shiraz HIV/AIDS Research Center (July, 2022)
8. Drug resistance Analysis, Shiraz HIV/AIDS Research Center (July, 2022)

Honors

- The Best Graduated Ph.D. student in Medical virology (2020), Ahvaz, Iran
- The Best Graduated M.Sc. student in Medical virology (2015), Shiraz, Iran

- Exceptional talents student of the Ministry of Health in Ph.D. and M.Sc. Degrees.
- The Best Graduated B.Sc. student in Microbiology (2008), Kazeroon, Iran
- Membership in the National Elite Foundation of the country.
- Ranked 7th among examinees in the Ph.D. entrance exam in Medical Virology (2015).
- Ranked first among examinees in the B.Sc. entrance exam in Microbiology (2004).

Participate in scientific congresses

1. Second International and Fourth National CRISPR Symposium, NIGEB, Tehran, Iran (20-21 June, 2022)
2. HBV eradication still is a great challenge due to the occurrence of mutations in a determinant HBs, Pre-S1 and Pr-S2 regions, International Conference on Vaccine Research (Webinar), United Kingdom (February 7, 2022)
3. Origin and expansion of SARS-CoV-2, 15th Professor Alborzi International Congress of Clinical Microbiology (Webinar), Shiraz, Iran (October 28-29, 2021)
4. Prevalence of Influenza A/H1N1 (pdm09) virus in south of Iran by Real-Time PCR, 7th International Congress of Clinical Microbiology, Shiraz, Iran (October 19-21, 2013)
5. One-day scientific conference on AIDS at Ahvaz Jundishapur University of Medical Sciences, Iran (2012)
6. Origin and spread of SARS-CoV-2, 15th International Congress of Clinical Microbiology, Shiraz, Iran (October 28-29, 2021)
7. One-day scientific conference on Microbiology at Islamic Azad University of Kazeroon, Kazeroon, Iran (2007)

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