

Fahimeh Piryaei, PhD

Curriculum Vitae

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Contact Information

Full name Fahimeh Piryaei

Professional title Assistant Professor of Medical Genetics, Department of Medical Genetics, School of Medical Sciences, Hamadan University of Medical Sciences, Hamadan, Iran

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Online Profile

ResearchGate <https://www.researchgate.net/profile/Fahimeh-Piryaei>

LinkedIn <https://www.linkedin.com/in/fahimeh-piryaei-58482657/>

Google Scholar https://scholar.google.com/citations?hl=en&user=5KioG78AAAAJ&view_op=list_works&sortby=pubdate

Web of science <https://www.webofscience.com/wos/author/record/AAF-4397-2019>

Orcid <https://orcid.org/0000-0003-0627-9332>

Personal Profile

- Assistant Professor of Medical Genetics at the Hamadan University of Medical Sciences, Hamadan, Iran (Sep 2019-present)
- Research Coordinator, Global Andrology Forum (GAF), Ohio, US (2024-present)
- Education Deputy of Department of Medical Genetics (2024-present)
- Genetic counselor, Omid Health clinic, Hamadan (March 2021-present)
- Head of the weekly Journal Club meetings of the Department of Molecular Medicine and Genetics (2022-2024)
- Published scientific articles in the field of genetics/epigenetics of infertility and other genetic abnormalities including Mendelian disorders in prestigious journals
- Being in Supervisory panel of 1 PhD dissertation, 1 Residency thesis, 3 MSc theses and 3 Medical students (2020-present).
- Trained for diagnostic genetic tests, DeNA (Niloufar) Laboratory, Tehran, Iran (2017- 2018)
- Trained for Thalassemia diagnostic tests, Zeynali Genetics Laboratory, Tehran, Iran (2016)

- Fellowship offer, Department of Obstetrics and Gynecology/Department of Surgery, Baylor College of Medicine, Texas, USA-2018
- Excellent research ability; Experienced teacher in medical genetics; Experienced Next Generation Sequencing and Cytogenetics (FISH and Karyotype including blood, amniotic fluid and malignancies) analyst; Detailed knowledge of RNA sequencing, QF-PCR and MLPA; Good knowledge of Proteomics, R, Linux, Meta-analysis, Microarray, ChIP-seq, Cytoscape, Cell culture, Exosome, TEM, Fluorescent microscope, CRISPR.

Research Interest

My focus is mainly on understanding the pathogenesis of idiopathic infertility as well as reproductive cancers. For this goal, I investigate transcriptome and proteome/metabolome via different molecular high-throughput methods. My second research interest is identifying the etiology of monogenic (Mendelian) disorders. This purpose is reachable through utilizing Next Generation Sequencing (NGS) techniques since I am expert in Whole Exome Sequencing (WES) analysis.

Educational Background

Doctor of Philosophy, Medical Genetics (2013- 2019)

Tarbiat Modares University, Iran

Thesis Title: Comparison of miRNAs expression profile in testis tissue samples of obstructive and non-obstructive azoospermia men by RNA sequencing

Achievements: Since we have identified some novel miRNAs for the first time, we have experimentally been confirming them in collaboration with international scientists. Some new proposals are being performed to prove our findings. Therefore, beside two valuable published articles, the main papers are under submission.

Supervisor: Prof. Hossein Mozdarani

https://scholar.google.com/citations?hl=en&user=fL-mgwQAAAAJ&view_op=list_works&sortby=pubdate

GPA: 18.16 / 20

Master of Science, Cellular and Molecular Biology (2009-2011)

National Institute of Genetic, Engineering and Biotechnology (NIGEB), Iran

Project Title: Investigation on mitochondrial ATPase 8/6 and tRNA^{Lys} genes and D-Loop region in Iranian patients suspected to autism

Supervisor: Prof. Zahra-Soheila Soheili

https://scholar.google.com/citations?user=6_mfPW0AAAAJ&hl=en

GPA: 18.85 / 20

Bachelor of Science, Biotechnology (2005-2009)

Shahed University, Iran

GPA: 15.74 / 20

Academic Experience

- Assistant professor, Hamadan University of Medical Sciences (UMSHA), Hamadan, Iran (2019-present)

- Education officer of genetics course for medical students (2023-present)
- Cooperating in setting up a genetic counseling center in Omid Subspecialized Clinic of Hamadan and carrying out specialized genetic counseling (2021-present)
- Cooperating in setting up a genetic diagnostic laboratory at UMSHA (2024-present)

Teaching Experience

Taught several courses as follows (2019-present):

- Medical genetics, Ph.D. students of Molecular Medicine
- Medical genetics, M.Sc. students of Medical Biotechnology
- Neurogenetics, Ph.D. students of Neurosciences
- New methods in molecular diagnosis of diseases, Ph.D. students of Medical Biochemistry
- Genetic disorders and counseling, M.Sc. students of Children's Nursery
- Principles of genetic counseling and inherited disorders, M.Sc. students of Midwifery
- Genetics, International MBBS students (in English)
- Genetics, Medical students
- Human genetics, International Dentistry students (in English)
- Genetics and immunology, B.Sc. students of Nursery

Publications

Books

1. Harper's Practical Genetic Counselling. By Angus Clarke et al. 2020. Translation into Persian (with Dr. Emran Esmailzadeh, Sajjad Biglari). 2020. Arak University of Medical Sciences Press. Iran.
2. Human Genetics: from Molecules to Medicine. By Christian P. Schaff et al. 2011. Translation into Persian (with Dr. Abdolazim Sarli and Dr. Amir Mashayekhi, supervised and edited by Prof. Hossein Mozdarani). 2017. Baresh-e-Danesh Press. Iran.
3. Genetics 3in1. 2013. Compilation in Persian. Nahr Press. Iran.

Peer-reviewed Journal Articles

1. Asli Metin Mahmutoglu, Ashok Agarwal, Hiva Alipour, Germar-Michael Pinggera, Kareim Khalafalla, Bahadir Sahin, Edoardo Pescatori, **Fahimeh Piryaeei**, Manaf Al Hashimi, Rupin Shah. Mapping the Scientometric Landscape of Andrology: Trends, Gaps, and Future Directions in Male Reproductive Health – A Scoping Review. *The World Journal of Men's Health*. 2025 (Accepted)
2. Amirhossein Ahmadih-Yazdi, Behzad Imani, Akram Jalali, **Fahimeh Piryaeei**, Razieh Dalirfardouei. Bridging the Skills Gap: Recommendations for Updating Medical Biotechnology Master's Curriculum in Iran. *Avicenna Journal of Medical Biotechnology*. 2025 (Accepted)

3. Yasamin Ghaffari, Kamran Shahabi, Seyed Javad Mowla, Rajender Singh, Marjan Sabbaghian, **Fahimeh Piryaeei***. Bioinformatics analysis and laboratory confirmation of novel small RNA sequences in sperm. 2024 (under submission)
4. Kamran Shahabi, **Fahimeh Piryaeei***, Maryam Bahmanzadeh, Yasamin Ghaffari, Amir barzegari, Parisa Ahghari, Tayebeh Artimani, Rajender Singh. Three novel small RNAs play a role in male spermatogenesis. 2024 (under submission)
5. **Fahimeh Piryaeei**, Kiana Zarabadi, Arastoo Kaki, Fatemeh Bahreini, Javad Behroozi. Novel deleterious variants of ethylmalonic encephalopathy: A case report and review of the literature. 2024 (under submission)
6. **Fahimeh Piryaeei**, Yasamin Ghaffari, Safoura Kowkabi, Fatemeh Asadi, Majid Yavarian. A novel frameshift variant in the *SEPN1* gene causes rigid spine syndrome. 2024 (under submission)
7. **Fahimeh Piryaeei***, Poonam Mehta, Hossein Mozdarani, Fatemeh Hamzehlooy, Mahmoud Barati, Zeynab Piryaeei, Mohammad Ali Sadighi Gilani, Mohsen Alemi, Rajender Singh. Testicular piRNA analysis identified dysregulated piRNAs in non-obstructive azoospermia. *Reproductive Sciences*. 2024; 31, 1246–1255, <https://doi.org/10.1007/s43032-023-01433-3>.
8. Sahra Sahraeean, Asiyeh Jebelli, Zahra Shahbazi, **Fahimeh Piryaeei***. Homozygosity for Robertsonian Translocation (14q;15q) in a Newborn with a Familial History of Recurrent Abortion and Newborns Affected by Hepatosplenomegaly: A Case Report. *J Reprod Infertil*. 2023;24(4):301-305.
9. **Fahimeh Piryaeei**, Rezvan Pakmanesh, Maryam Salehirad, Soheila Akbari, Masoud Edizadeh, Hamidreza Khodadadi. ALDH1A3-related congenital microphthalmia-8 due to a novel frameshift variant. *European Journal of Medical Genetics* 2023, 66(8) <https://doi.org/10.1016/j.ejmg.2023.104801>.
10. **Fahimeh Piryaeei**, Hossein Mozdarani, Mohammad Ali Sadighi Gilani, Singh Rajender, Renata Finelli, Mahsa Darestanifarhani, Abdolazim Sarli, Poonam Mehta, Ashok Agarwal. Global Analysis in Nonobstructive Azoospermic Testis Identifies MiRNAs Critical to Spermatogenesis. *Andrologia* 2023, vol. 2023 <https://doi.org/10.1155/2023/2074931>.
11. **Fahimeh Piryaeei**, Hanieh Naddaf, Zahra Barabadi. Two new variants in FYCO1 are Responsible for Autosomal Recessive Congenital Cataract in Iranian Population. *Cell journal (Yakhteh)* 2022, 24(6) <https://doi:10.22074/cellj.2022.8116>.
12. Seydeh Moloud Rasouli Ghahfarokhi, Asghar Dasmeh, Amir Yousef Farahmandi, Azam Khedri, Fatemeh Asadi, **Fahimeh Piryaeei**, Leila Moradi. The study of COVID-19 in an Iranian with sickle cell disease. *Iranian Journal of Blood & Cancer* 2021; 13(2): 54-57 https://ijbc.ir/browse.php?a_code=A-10-515-2&sid=1&slc_lang=en
13. **Fahimeh Piryaeei**, Hossein Mozdarani, Mohammad Ali Sadighi Gilani, Mansour Ebrahimi. Homo sapiens (Human) microRNA187Expression Is Dysregulated in Testis of Non-obstructive Azoospermic Men. *Int J Basic Sci Med*.2020;5(2):39-42. [10.34172/ijbsm.2020.08](https://doi.org/10.34172/ijbsm.2020.08)
14. **Fahimeh Piryaeei**, Massoud Houshmand, Omid Aryani, Sepideh Dadgar, Zahra-Soheila Soheili. Association of the Mitochondrial ATPase 6/8 and tRNA^{Lys} Genes Mutations with Autism in Iranian Patients. *Yakhteh* 2012; 14(2):98-101. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3584428/>.
15. Fatemeh Piryaeei, Mina Ramezani, **Fahimeh Piryaeei**. The effect of age and strain on screening, proliferation, and differentiation of chicken bone marrow mesenchymal stem cells. *Arak Medical University Journal (AMUJ)* 2011; 14(55): 18-28. http://jams.arakmu.ac.ir/browse.php?a_id=683&sid=1&slc_lang=en

Abstracts and Conference Presentations

1. ESHG (European Society of Human Genetics), Milan, Italy, 2025, A global expression profile of bladder cancer in early stage: a meta-analysis reveals new promising therapeutic targets (Submitted)
2. ESHG, Milan, Italy, 2025, Detection of a novel small non-coding RNA in seminal plasma of fertile men (Submitted)
3. ISEV (International Society of Extracellular Vesicles), Vienna, Austria, 2025, A Comparative Analysis of Anti-Inflammatory Properties in Nano and Microvesicles from *Allium cepa*: Does Size Influence Efficacy? (Poster presentation)
4. CGC2024 (2nd International Congress of Cancer Genomics), Tehran, Iran, 2024, Genetics and Epigenetics of Bladder Cancer (Keynote speaker)
5. ISEV, Melbourne, Australia, 2024, The therapeutic potential of mesenchymal stem cell-derived exosomes in polycystic ovary syndrome and endometriosis. (Poster presentation)
6. Royan International Twin Congress, Tehran, Iran, 2021, The evaluation of Poly-T, TG-repeats and M470V polymorphism of the CFTR gene in Iranian males with non -Obstructive Azoospermia. (Oral presentation)
7. Royan International Twin Congress, Iran, 2018, Effect of RNAlater on RNA Integrity in the snap freezing of testis tissues. (Poster presentation)
8. ESHG (European Society of Human Genetics), Nürnberg, Germany, 2012, Investigation of mitochondrial tRNAThr and tRNAPro genes mutations in autism. (Poster presentation)
9. ESHG, Nürnberg, Germany, 2012, The effect of age and strain on screening, proliferation, and differentiation of chicken bone marrow mesenchymal stem cells (Poster presentation)
10. ASHG (American Society of Human Genetics), San Francisco, 2012, Investigation of mitochondrial D-Loop variations in autism (Poster presentation)
11. ASHG, San Francisco, 2012, Comparison of the differentiation potential of human mesenchymal stem cells and several animal species (Poster presentation)

Research Projects

Project Title	Grantor	Role	Year
Endometriosis and Polycystic Ovarian Syndrome: Cross-talk between regulatory pathways	The Ministry of Health and Medical Education (MOHME)	Principal Investigator	2025 Ongoing
Urological Cancers Registry	Hamadan University of Medical Sciences	Scientific Advisor	2024 Ongoing
Identification of causative variants in disequilibrium syndrome in Iranian population by whole-exome sequencing and bioinformatics analysis	Hamadan University of Medical Sciences	Supervisor	2024 Ongoing
Identification of causative variants in segawa syndrome in Iranian population by whole-exome	Hamadan University of Medical Sciences	Supervisor	2024 Ongoing

sequencing			
Evaluation of GJB2 gene frequency in non-syndromic sensorineural deafness in Hamadan province	Hamadan University of Medical Sciences	Scientific Advisor	2024 Ongoing
Investigation of piRNAs' clustering Based on the expression profile in testis tissue of individuals with spermatogenesis impairment by small RNA sequencing	Hamadan University of Medical Sciences	Principal Investigator	2023 Finished
Examining the chromosomal abnormalities leading to recurrent miscarriages	Hamadan University of Medical Sciences	Principal Investigator	2023 Finished
Identification of potential biomarkers derived from meta-analysis of transcriptome in human bladder cancer	Hamadan University of Medical Sciences	Supervisor	2023 Ongoing
Study the effect of Niosome Based Bioactive Compounds on Targeting Telomerase Gene In Colorectal Cancer Model	Hamadan University of Medical Sciences	Scientific Advisor	2023 Ongoing
Antioxidant and anti-inflammatory effect of extracellular vesicles isolated from Allium cepa plant in skin wound healing in mouse model	Hamadan University of Medical Sciences	Co-Investigator	2023 Finished
Identification of causative variant(s) of rigid spine syndrome in an Iranian family by whole-exome sequencing	Hamadan University of Medical Sciences	Principal Investigator	2022 Finished
The necessity of revising and redeveloping of the medical biotechnology curriculum in the master's degree based on the Iran country's employment market requirements and state-of-the-art technology in the world	Hamadan University of Medical Sciences	Scientific Advisor	2022 Finished
Characterization of novel small RNAs detected in human sperm using bioinformatics methods and laboratory confirmation	Hamadan University of Medical Sciences	Principal Investigator	2022 Ongoing
Identification of causative variants of Neu-Laxova syndrome (NLS) in an Iranian family by whole-exome sequencing	Hamadan University of Medical Sciences	Principal Investigator	2022 Ongoing
Investigation of presence of three novel microRNAs found in testicular tissue in seminal plasma of fertile men	Hamadan University of Medical Sciences	Principal Investigator	2021 Ongoing
Isolation, culture and differentiation of chicken bone marrow mesenchymal stem cells	Islamic Azad University, Ashtian Branch	Collaborator	2011

Awards and Honors

- Rank 3 in PhD Entrance Exam, 2013
- 2nd-ranked GPA in PhD, 2019
- 3rd-ranked GPA in MSc, 2011

Workshop Attendance

- Online Systematic Review and Meta-Analysis (SRMA) Training, Global Andrology Forum, 2024, Ohio, USA
- Online Assisted Reproductive Technologies (ART) Training, American Center for Reproductive Medicine, 2021, Cleveland, USA
- Quality Basics, Principles of Establishing a Quality Management System and Internal Assessment (Audit) in Diagnostic, Pathology, IVF (Infertility) and Medical Genetics Laboratories, 2018, Sarem Hospital, Tehran, Iran
- Epigenetic Data Analysis (ChIP-seq & Genome-wide Methylation), 2017, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran
- Computational systems biology: Network analysis, Gene ontology and Promoter analysis, 2017, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran
- Meta-analysis of high-throughput sequencing data, 2017, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran
- Health, Safety and Environment (HSE) in laboratory, 2014, Tarbiat Modares University, Tehran, Iran

Invited Speaker

- Genetics and Epigenetics of Bladder Cancer, **Key note speaker**, 2nd International Cancer Genomics Congress, Iran 2024
- Thalassemia, **International Educational-Research Webinar on Thalassemia**, Hamadan university of Medical Sciences, Iran in collaboration with University of Nantes, France 2021
- Stem Cells and Their Applications, Department of Biology, Ministry of Education, Iran 2013
- Genetics Disorders, Department of Biology, Ministry of Education, Iran 2011

Service

Journal Reviewer

I have been serving as a reviewer for almost 10 international journals such as scientific reports available in my Web of Science profile.

Proposal Reviewer

I have been serving as a reviewer for more than 20 proposals including students' theses and dissertations at Hamadan University of Medical Sciences, Iran (2019-present).

Membership

- International Society of Extracellular Vesicles (ISEV) (2024-present)
- The Research Center for Molecular Medicine, Hamadan University of Medical Sciences (2023-present)
- American College of Medical Genetics and Genetics (ACMG) (2022-present)

- The "Research in Education" Committee, Education and Development Centre (EDC) of medical education, Hamadan University of Medical Sciences (2020-present)
- Medical council of Iran (2020-present)
- Iranian Society of Medical Genetics (ISMG) (2013-present)

Congress

- Scientific representative of Hamadan province in “**2th International Congress of Cancer Genomics 2024**”, Tehran, Iran, Nov 2024
- Executive committee member of “**7th National and 1st International Seminar on Medical Genetics**”, Kurdistan university of Medical Sciences, Iran, 2021

References

Prof. Hossein Mozdarani

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