ENT and Head & Neck Research Center and Department, The Five Senses Health Institute, Hazrat Rasoul Hospital, Iran University of Medical Sciences, Tehran, Iran.

Masoumeh Falah

Date of Birth: 16/03/1980 **Nationality:** Iranian

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Objective

I am a Medical Genetic PhD in Iran University of Medical Science. I work on genetic background of hearing loss and Mental Retardation since 2004. I have a great enthusiasm in doing research in the Biotechnology; Genetics and cellular biology, where my creative initiative, ideas and a genuine enthusiasm would allow me to progress.

Academic

2013-2016 **PhD, Molecular Medical Genetic**
Iran University of medical Science, Tehran, Iran

Thesis topic: Molecular genetic study of BAK1, BCL2 and ATPase6/8 genes and D-loop in age related hearing loss.

2012-2013 **M.Phil**
Advanced Research Method, Scientific Writing, Ethics in Research, Knowledge Transfer and Exchange (KTE), Advance Statistics, Working with SPSS Software, Project Management, and Basic Lab Principles.

2003-2005 **MSc, Molecular Cell Biology**
Islamic Azad University (Science & Research Campus), Tehran, Iran

Thesis topic: Prevalence of Autosomal recessive & X-Linked Hereditary mental retardation in rehabilitation centres in Tehran province.

1998-2002 **BSc, Molecular Cell Biology**
Islamic Azad University of Tonekabon, Iran

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Masoumeh Falah

Professional Training Courses Attended

- Participation in workshop of "Analysis of new generation sequencing specially copy number variation (CNV) “at AD bioinformatic company in 2022
- Participation in workshop of " PCR time-Real for diagnostic approach “at Iran University of Medical Sciences in 2022
- Participation in workshop of " Research Metrics & Evaluation “at Iran University of Medical Sciences in 2022
- Participation in the workshops of Ethics Department workshop at Iran University of Medical Sciences in 2022
- Participation in workshops of “Review of research article “at Iran University of Medical Sciences in 2022
- Participation "The second short-term course of medical education (Advanced)"at Multi-University of Medical Sciences in 2020-2021
- Participation " Navigating Genetic Diagnostics for Hereditary Hearing Loss " at Blueprint Genetics company, Finland on Mar 10,2021
- Participation "The effectiveness of research" at Iran University of Medical Sciences in 2021
- Participation "Scopus database" at Iran University of Medical Sciences in 2021
- Participation "Basic Teaching" at Iran University of Medical Sciences in 2021
- Participation "Basic Research method" at Iran University of Medical Sciences in 2021
- Participation "Advanced search for Systematic Review " at Iran University of Medical Sciences in 2021
- Participation "Iranian Scientometrics Information Database " at Iran University of Medical Sciences in 2020
- Participation "Mendeley software training " at Iran University of Medical Sciences in 2020
- Participation "Future Study" at Iran University of Medical Sciences in 2020
- Participation "How to give effective feedback to our learners?" at Iran University of Medical Sciences in 2020
- Participation "How to teach online?" at Iran University of Medical Sciences in 2020
- Participation "Business leadership in conditions of uncertainty" at Iran University of Medical Sciences in 2020
- Participation "How WES variants are interpreted and classified" at Blueprint Genetics company, Finland in 2019
- Participation "Commercialization" workshop at Iran University of Medical Sciences in 2018
- Participation "Ethics in research" Workshop at Iran University of Medical Science in 2018

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- Participation "Advanced Intellectual Property "Workshop at Iran Patent Office in 2018
- Participation "Design thinking" workshop at Iran University of Medical Sciences in 2018
- Participation "Next Generation Sequencing in diagnostic and treatment of infertility" workshop at 4th International congress on reproduction in 2018.
- Participation "Genetic counselling" training course at State Welfare Organization in 2017
- Participation "Advanced Searching" workshop at Tehran University of Medical Sciences in 2017
- Participation "EndNote" workshop at Tehran University of Medical Sciences in 2017
- Participation "Systematic Review and Cochrane" workshop at Tehran University of Medical Sciences in 2017
- Participation "Systematic Review" workshop at Tehran University of Medical Sciences in 2017
- Participation "Drug Development and therapeutics" workshop at Shahid Beheshti University of Medical Sciences.
- Participation "Advanced Scientific Writing" workshop at Iran University of Medical Sciences
- Participation "SPSS" classes at Iran University of Medical Sciences
- Participation "Advanced Patent Searching" workshop at Iran University of Medical Sciences in 2017.
- Participation in "Gene therapy for haemophilia" workshop at Iranian comprehensive Haemophilia Care Centre in 2017.
- Participation in "Designing and implementation of genome editing with CRISPR technology in stem cells and transgenic animals" workshop at Royan Institute in 2017
- Genome-wide association study (GWAS),2017.
- Participation "Ethics in research" training course at Tehran University of Medical Science in 2013

Computer

Word, Power Point, Excel, SPSS, EndNote, Photoshop, ICDL

English

- Advanced (A diploma certification of ACECR)
(Iranian academic centre for education culture and research)
- MHLE

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Masoumeh Falah

Lab Skills

- DNA extraction methods
- RNA extraction methods
- cDNA synthesis
- PCR technique (PCR, ARMS-PCR, PCR-RFLP, Nested PCR ...)
- Real time PCR
- Primer Design
- Linkage Analysis
- Electrophoresis methods
- Southern Blot
- Cytogenetic
- FISH

Bioinformatics Skills:

- Primer Design (Primer 3, Primer Blast)
- NCBI Blast
- Align two sequences (CodonCode Aligner, Chromas)
- Multiple Sequence Alignment (clustalW, T-coffee)
- Gene Runner
- DNA MAN
- Oligo Analyzer

Gene data base:

- UCSC Genome Browser Home
- Genatlas
- HGMD
- Ensemble
- OMIM
- MedGen
- ClinVar
- GTR
- And.....

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Awards & Honours

2019 Best Speaker in 8th National seminar on genetic counselling

2019 Selecting the Molecular Genetic Laboratory of ENT Research Center as the first laboratory in the research laboratories of Iran University

2018 Selecting the Molecular Genetic Laboratory of ENT Research Center as the first laboratory in the research laboratories of Iran University

2017 Best Speaker in 6th National seminar on genetic counseling

2016 Student top researcher of Ministry of health

2012 1st class grade in my master of philosophy (MPhil)

2004 I was awarded in the 1st distinguished students congress

2001 1st class grade in my BSc degree

Voluntary Work in Congress

2004 Nov 27th -1st Dec The 3rd international congress of Genetic Disabilities and Disorders, Tehran, Iran

2007 Nov 24th -26th The 4th international congress of Genetic Disabilities and Disorders, Tehran, Iran

Membership

Young Researchers Club
Iran biotechnology society
Iranian cell death association

Congress Attendant

- The 1st International and 3rd National symposium of Crisper on April 2021
- The 7th Medical Genetics seminars on April 2021
- The Genetic Diagnostic of thalassemia on Nov 2020
- The Cochlear implantation from hearing to speech and listening skills in 2020
- The 8th National seminar on genetic counseling and prevention of disability Nov2019
- The 4th symposium of Genetic and stem cell on Jul 2018
- The 7th National seminar on genetic counseling and prevention of disability Nov2018
- The 3rd international and 15th Iranian genetics congress May 2018
- The 5th international congress on cochlear Implant & related science May2-18
- The First symposium of stem cell and tissue engineering in otolaryngology Jan 2018

ENT and Head & Neck Research Center and Department, The Five Senses Health Institute, Hazrat Rasoul Hospital, Iran University of Medical Sciences, Tehran, Iran.

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- The 3rd symposium of genetic and Dec 2017stem cell
- The Personal medicine at university of social welfare and rehabilitation Dec2017
- The 6th National seminar on genetic counseling and prevention of disability Nov2017
- The 15th Iranian Congress of audiology
- The 4th International Symposium on Molecular Technology (Biotechnology in Progress; Drug Development and Therapeutics) 2014
- The First International & 13th Iranian Genetic congress may 24-26 2014
- The Congress on Novel & Innovative laboratory Technologies 1-3 Oct 2014
- The 2nd Basic and clinical neuroscience 2013
- The Middle East Updates In Otolaryngology &Head and Neck Conference 2011.
- The 5th National Congress on Sleep Disorder 2011
- The Allergic Rhinitis conference 2009 Rasoul Akram hospital, Tehran Iran.
- The 42th European Society of Human Genetics 2010 in Gothenburg, Sweden.
- The 41th European Society of Human Genetics 2009 in Vienna, Austria.
- The 11th Iranian genetics Congress in Shehid Beheshti University, Tehran, Iran.
- The 10th Iranian genetics Congress in Millad hospital hall centre, Tehran, Iran.
- The 4th international congress of Genetic Disabilities and Disorders, Tehran, Iran.
- The 9th Iranian genetics Congress in Millad hospital hall centre, Tehran, Iran.
- The 5th Royan International Research Awards Scientific Congress.
- The 2nd Nation Wide Conference of Biology Student, Mashhad, Iran.
- The 3rd international congress of Genetic Disabilities and Disorders, Tehran, Iran.
- The 2nd International Conference of biotechnology, Tarbiat Modares, Tehran, Iran.

List of publication and presentation

1- Association between TBXT rs2305089 polymorphism and chordoma in Iranian patients identified by a developed T-ARMS-PCR assay. Journal of Clinical Laboratory Analysis, 2022, ;36: e24150.

2- Novel phenotype and genotype spectrum of NARS2 and literature review of previous mutations. Irish Journal of Medical Science (1971-), 2021, 1-14.

3- How Transmembrane Inner Ear (TMIE) plays role in the auditory system: A mystery to us. Journal of Cellular and Molecular Medicine. 2021; 25:5869–5883.

4- Role of GJB2 and GJB6 in Iranian Non-syndromic Hearing Impairment: From Molecular Analysis to Literature Reviews. Fetal Pediatr Pathol. 2019 Jun 19:1-12.

5- Alginate/chitosan hydrogel containing olfactory ectomesenchymal stem cells for sciatic nerve tissue engineering. J Cell Physiol. 2019 Jan 31.

6- Differentiation of human mesenchymal stem cells (MSC) to dopaminergic neurons: A comparison between Wharton's Jelly and olfactory mucosa as sources of MSCs. J Chem Neuroanat. 2019 Jan 9.

7- Human olfactory stem cells: As a promising source of dopaminergic neuron-like cells for treatment of Parkinson's disease. Neurosci Lett. 2018 Dec 12;696:52-59.

8- Differentiation of neural crest stem cells from nasal mucosa into motor neuron-like cells. J chem Neuroanat. 2018 May 25.

9- Association of genetic variations in the mitochondrial DNA control region with presbycusis. Clin Interv Aging. 2017; 12:459-465.

10- Abberant Lymphocytes Rate after Gamma-Irradiationn as a Biomarker of Breast Cancer. Sarem Journal of Reproductive Medicine. 2017;1(3):89-95

11- The potential role for use of mitochondrial DNA copy number as predictive biomarker in presbycusis. Ther Clin Risk Manag. 2016 Oct 19; 12:1573-1578. doi:10.2147/TCRM.S117491

12- Expression levels of the BAK1 and BCL2 genes highlight the role of apoptosis in age-related hearing impairment. Clin Interv Aging. 2016 Jul 28; 11:1003-8. doi: 10.2147/CIA.S109110. eCollection 2016.

13- Presbycusis: From Current Knowledge to Future Treatment Prospects. J Isfahan Med Sch 2016; 34(382): 526-35.

14- Association of nuclear and mitochondrial genes with audiological examinations in Iranian patients with nonaminoglycoside antibiotics-induced hearing loss. Ther Clin Risk Manag. 2016 Jan 28; 12:117-28. doi: 10.2147/TCRM.S90581. eCollection 2016.

15- Novel nucleotide changes in mutational analysis of mitochondrial 12SrRNA gene in patients with nonsyndromic and aminoglycoside-induced hearing loss. Mol Biol Rep. 2013 Mar; 40(3):2689-95. doi: 10.1007/s11033-012-2355-8. Epub 2012 Dec 16.

16- The anticipation and inheritance pattern of c.487A>G mutation in GJB2 gene. Arch Iran Med. 2012 Jan; 15(1):49-51. doi: 012151/AIM.0013.

17- Deep sequencing reveals 50 novel genes for recessive cognitive disorders. Nature. 2011 Sep 21; 478(7367):57-63. doi: 10.1038/nature10423.

18- Profile of Iranian GJB2 mutation in young population with novel mutation. Iranian Journal of basic Medical science. Iran J Basic Med Sci, Vol. 14, No. 3, May-June 2011 213.

19- Chromosome abnormality rate among Iranian patients with idiopathic mental retardation from consanguineous marriages. Arch Med Sci 2011; 7, 2: 321-325.

20- A novel nonsense mutation in TUSC3 is responsible for non-syndromic autosomal recessive mental retardation in a consanguineous Iranian family. Am J Med Genet A. 2011 Aug; 155A (8):1976-80. doi: 10.1002/ajmg.a.34077. Epub 2011 Jul 7.

21- Autosomal recessive mental retardation: homozygosity mapping identifies 27 single linkage intervals, at least 14 novel loci and several mutation hotspots. Hum Genet. 2011 Feb; 129(2):141-8. Epub 2010 Nov 10.

22- A clinical and molecular genetics study of 112 Iranian families with primary microcephaly. J Med Genet. 2010 Dec; 47(12):823-8. Epub 2010 Oct 26.

23- Homozygosity mapping in consanguineous families reveals extreme heterogeneity of non-syndromic autosomal recessive mental retardation and identifies 8 novel gene loci. Hum Genet. 2007 Mar; 121(1):43-8. Epub 2006 Nov 21.

24- Identification of a critical novel mutation in the exon 1 of androgen receptor gene in two brothers with complete androgen insensitivity syndrome. J Androl. 2009.

25- Mutation of the conserved poly adenosine RNA binding protein, ZC3H14/dNab2, impairs neural function in Drosophila and humans.

26- The role of genetic in hearing impairment regenerative medicine. Oral presentation in the first International Iranian tissue engineering and regenerative medicine ingress (ITERMC). July 18-20, 2018, Tehran, Iran.

27- The role of genetic in hearing impairment and cochlear implant. Oral presentation in 5th international congress on cochlear Implant & related science. May 2018, Mashhad, Iran.

28- New finding in hearing impairment gene therapy. Oral presentation in First symposium of stem cell and tissue engineering in otolaryngology. Jan 2018 Tehran, Iran.

29- Genetic counselling in hearing impairment in ENT research centre. Oral presentation in 6th National seminar on genetic counseling and prevention of disability. Nov 2017 Tehran, Iran.

30- Potential pre-diagnostic biomarkers in presbycusis. Oral presentation in 18th International Congress in Audio- vestibular Medicine. Oct 2016 Odense, Denmark.

31- Biomarker investigation for presbycusis as a very common human impairment and a future disaster. Oral presentation in Integration processes of the word science in the 21st century. Oct 2016, Ganja, Azerbaijan.

32- The role of programmed cell death (apoptosis) in presbycusis. Oral presentation in 15th Iranian Congress of audiology. May 2016, Tehran, Iran.

33- Genetic aspects of hearing impairment. Oral presentation in Middle East Updates In Otolaryngology &Head and Neck Surgery Conference 2011.

34- Genetic role on sleep disorder. Oral presentation in 5th National Congress on Sleep Disorder 2011.

35- Genetic aspect of allergic rhinitis. Oral presentation Allergic Rhinitis conference 2009, Rasoul Akram hospital, Tehran Iran.

36- Profile of Iranian Genome variation of connexin 31 gene. Poster Presentation at European Society of human Genetics (ESHG) Conference 2012, Nurnberg, Germany.

37- Homozygosity mapping, exon enrichment and next generation sequencing reveals single plausible gene defects in 72 consanguineous families with autosomal recessive intellectual disability. Poster Presentation at European Society of human Genetics (ESHG) Conference 2011. Amsterdam, Netherland.

38- Autosomal recessive intellectual disability: homozygosity mapping identifies 27 single linkage intervals, at least 14 novel loci and several mutation hotspots. Poster Presentation at European Society of human Genetics (ESHG) Conference 2011. Amsterdam, Netherland.

39- Stem cell a new way in treatment hearing loss impairment. Poster Presentation at European Society of human Genetics (ESHG) Conference 2011. Amsterdam, Netherland.

40- The inheritance of a missense c.487A>G mutation in GJB2 gene in two Iranian families. Poster Presentation at European Society of human Genetics (ESHG) Conference 2010, Gothenburg, Sweden.

41- Jervell and Lange Nielsen Syndrome a new manifestation of p.S38G in KCNE1 gene. Poster Presentation at ESHG Conference 2010, Gothenburg, Sweden.

42- Heterosity of SLC26A4 gene in one Iranian female with sensorineural hearing loss. Poster Presentation at Kuwait.oct 2010

43- ZC3H14 mutations cosegregate with non-syndromic autosomal recessive mental retardation (NS-ARMR) in two Iranian families. Oral presentation in American society human genetic (ASHG) 2009, Hawaii, US.

44- Two independent mutations in the ZNF526 gene are associated with non-syndromic autosomal recessive mental retardation. Poster presentation in ASHG 2009, Hawaii, US.

45- Frequency of 35delG mutation in cochlear implant recipients. Poster Presentation at ESHG Conference 2009 in Vienna, Austria.

46- Cytogenetic results in consanguineous Iranian patients with idiopathic mental retardation. Poster Presentation at 2nd Al Ain international genetics conference 2008.

47- Elucidating the molecular causes of autosomal recessive mental retardation in a systematic fashion: a progress report. Poster presentation ESHG 2007 Nice, France.

48- Homozygosity mapping of primary microcephaly in Iranian families revealed novel mutations and novel phenotype. Poster presentation ESHG 2007 Nice, France.

49- Cytogenics results in 301 Iranian patients with mental retardation. Oral presentation in 1st international congress on Health genomics &biotechnology 2007, Tehran, Iran.

50- Investigation of seven known loci associated with non-syndromic autosomal recessive mental retardation and microcephaly based on strs markers. Oral presentation 9th Iranian genetics congress, 2006, Tehran, Iran.

51- Prevalence of autosomal recessive & X- Llinked mental retardation in rehabilitation centers in Tehran province. Poster presentation 9th Iranian genetics congress, 2006, Tehran, Iran.

52- Prevalence of Autosomal recessive & X-Linked Hereditary mental retardation in rehabilitation centres in Tehran province. Poster presentation at Biology congress 2006 Mashhad, Iran.

Publication H-index (google scholar)

Citations: 1578, H-index: 13

Work & Research Experience

2017-2021

1- Assistant Professor of medical genetic in ENT and Head & neck Research Centre and Department.

2014-2017

2- Supervisor of Hearing Impairment genetic Lab of ENT and Head & neck Research Centre and Department.
3- Supervisor of Molecular genetic study of Presbycusis

2007-2014

1- Supervisor of Hearing Impairment genetic Lab of ENT and Head & neck Research Centre and Department, Tehran., Iran

2006-2007

1- Breast cancer project using Cytogenetic technique, Genetic Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

2003-2006

1- Analysis of genotype-phenotype correlation in Hereditary Mental Retardation in Iranian patients, Genetic Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

Teaching Experience

- ✓ "Medical Genetic and Genetic counselling" at Faculty of Psychology and Education in 2020
- ✓ "Medical Genetic and Genetic counselling" at Faculty of Psychology and Education in 2019
- ✓ "Medical Genetic Search" workshop at State Welfare Organization in 2020

- ✓ "Medical Genetic Search" workshop at State Welfare Organization in 2019
- ✓ "Medical Genetic Search" workshop at State Welfare Organization in 2018
- ✓ "Genetic in ENT" Educational Program for ENT at ENT and Head & Neck Research Centre and Department, Iran University of Medical Sciences in 2018
- ✓ "Hot Topic Search" workshop at ENT and Head & Neck Research Centre and Department, Iran University of Medical Sciences in 2018

Book

- ✓ Primary ear and hearing care (Training resource/ basic level)
- ✓ Primary ear and hearing care (Training resource for general practitioner)

Recommendation

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