Sajedeh Masjoudi

MSc, Biology-Genetics, 2015

BSc**,** Biology, 2010; Islamic Azad University, Science and Research Branch, Tehran

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Background

I was intensely interested in experimental and biological sciences from elementary school. I started my university education in biology. Then I started working in Medical Lab. At this time, I was interested in Genetics. Therefore, for my MSc, I studied Genetics by focusing on familial genetic disease. Furthermore, I passed some advanced computer science and biology courses, such as bioinformatics and genetics (GWAS, NGS).

Research/Work experience

- Aghdasieh Medical laboratory - Pathology & Genetics Center - Laboratory Assistant
- Research Institute for Endocrine Sciences Shahid Beheshti University of Medical Sciences Tehran, Iran - Laboratory Assistant, Collaboration in different projects
- Genoscope Diagnostic Company – NGS-based Genetic tests and genetic counseling services – Supervisor

Publications

1. Performance of Illumina Next Generation Sequencing (Pathobiology Research. 2018; 21(3):153-161)
2. Chromosomal regions strongly associated with waist circumference and body mass index in metabolic syndrome in a family-based study (Scientific Reports. 2021;11(6082):1-7) PMID: 33727680
3. Low HDL concentration in rs2048327-G carriers can predispose men to develop coronary heart disease: Tehran Cardiometabolic genetic study (TCGS) (Gene. 2021;778(145485)) PMID: 33581269
4. Kernel machine SNP set analysis finds the association of BUD13, ZPR1, and APOA5 variants with metabolic syndrome in Tehran Cardio-metabolic Genetics Study (Scientific Reports. 2021;11(10305)) DOI: 10.1038/s41598-021-89509-5 (IF: 4.996) PMID: 33986338
5. Sex, age, and ethnic dependency of lipoprotein variants as the risk factors of ischemic heart disease: a detailed study on the different age-classes and genders in Tehran Cardiometabolic Genetic Study (TCGS).(Biology of Sex Differences) 28 January 2022, 2022;13(1):4 (IF: 5.027) PMID:35090557 DOI: https://doi.org/10.1186/s13293-022-00413-7.
6. Risk of type 2 diabetes and KCNJ11 gene polymorphisms: a nested case–control study and meta-analysis.(Scientific Reports **12**, 20709 (2022). (IF: 4.996) PMID: 36456687

DOI: https://doi.org/10.1038/s41598-022-24931-x

7. Cohort profile update: Tehran Cardiometabolic Genetic Study, a path toward precision medicine. (European Journal of Epidemiology, 12 May 2023). (IF: 12.442)
   DOI: https://doi.org/10.1007/s10654-023-01008-1

Projects

1. Application of penalized regression models to predict metabolic syndrome using variants using GCKR, APOA5 and BUD13 risk variants: Tehran cardio metabolic genetics study
2. An association study of KCNJ11 common polymorphisms with risk of type 2 diabetes: A systematic review and meta-analysis study
3. ICD11 coding for the personal complication and the outcome finding in TLGS participant
4. Genome-Wide Association Study to recognize associated the genomic regions with obesity in the Iranian between 6-19 years old : The Tehran Cardiometabolic Genetics Study (TCGS)
5. Using model-based multifactor dimensionality reduction to detect gene-gene interaction in blood pressure trait in participants of Tehran cardio-metabolic genetic study
6. Identification of variants of the new gene FAHD1 in Tehran Cardio Metabolic Genetic Study
7. Needs assessment and design of appropriate educational package for genetic education of general population in Iran
8. Prevalence and frequency of suspected familial hypercholesterolemia in Tehran Lipid and Glucose Study
9. Investigating common polymorphism on LDLR, APOB, PCSK9, LDLRAP1 genes in relation to familial hypercholesterolemia in Tehran Lipid and Glucose Study

Presentation and Conference Proceeding

• The European Human Genetics Conference 2019: Presented Poster (June 2019)

"Application of whole-exome sequencing in daily practice: reducing the cost, diagnostic odyssey, increasing the diagnostic rate."

• The European Human Genetics Conference 2016: Accepted Poster (May 2016)

"Association of FTO gene variants with Metabolic Syndrome risk factors in

Tehran cardio-metabolic study (TCGS)"

• The European Human Genetics Conference 2016: Presented Poster (May 2016)

"High prevalence of monogenic familial hypercholesterolemia in a population-based study needs deep genetic dissection"

• The European Human Genetics Conference 2016: Presented Poster (May 2016)

"Admixture Analysis between allelic effect and HDL-C concentration related to metabolic syndrome (MetS) in Tehran cardio-metabolic genetic study (TCGS)"

• The 8 th International & 13 th National Congress on Quality Improvement in Clinical: Presented Poster (2015)

"Laboratories Next Generation Sequencing in Genome: Illumina Method"

Conferences

- The European Human Genetics Conference 2019
- 3rd International Congress of Iranian Personal Medicine 2019
- The European Human Genetics Conference 201٦
- The 8th International & 13th National Congress on Quality Improvement in Clinical 2015

Lecture Presentation:

- Application of Next Generation Sequencing in Clinical Diagnosis of inherited disorders (Iranian Molecular Medicine Network and Kawsar Human Genetics Research Center (2019))
- Application of Next Generation Sequencing in Clinical Diagnosis of inherited disorders (Iranian Molecular Medicine Network and Kawsar Human Genetics Research Center (Dec 2019))

TECHNICAL SKILLS/ Genetics Lab

PCR methods, Electrophoresis nucleic acids analysis (Agarose, Poly Acrylamide) and UV spectrophotometer analysis of DNA, "Ethidium bromide and gel red" Staining, Extraction and purification DNA, DNA banking, Nanodrop.

Bioinformatics and Statics SKILLS

- Designing of Primers for different PCR based methods such as tetra-ARMS PCR primers…
- Extract data of ONLINE SOFTWARE, DATABASES, and SITES
  - International HapMap Project, Genome 10K Project, UCSC Genome Bioinformatics Browser, Ensemble(Vep), Genome Aggregation Database (gnomAD), Clinvar, Intervar-Genetic variant interpretation, RefSeq Gene, Online Mendelian Inheritance in Man (OMIM), VarSome, Galaxy, etc.
- NGS analysis for diagnosis

Computer skills

Statistical Software

- Linux
- Programming: AWK
- Some software for NGS study like as Samtools, Bam tools…
- R / RStudio
- SPSS

Genetic Software

- PLINK
- Anovvar
- Integrative Genomics Viewer (IGV)
- Genome Analysis Toolkit (GATK)
- PROGENY
- GeneRunner
- Haploview
- R genetic packages
- Finch TV

other

- Endnote
- Office (word, excel, PowerPoint, access)
- Photoshop

Language

- English (Advanced)

Education Courses

• Looks for research: from information gathering to effective presentation (Cellular Molecular and Endocrine Research Center, Research Institute for Endocrine Sciences (2013)

• From gene selection to PCR design with bioinformatics database

(Cellular Molecular and Endocrine Research Center, and Iranian Molecular Medicine Network (2014)

• PCR and Electrophoresis Summer School (Cellular Molecular and Endocrine Research Center (2014)

• Introduction to Progeny software 7(Cellular Molecular and Endocrine Research Center, And Iranian Molecular Medici cine Network (2014)

• Concept of genome-wide association studies and their importance (GemIran Genetic Research group and Personalized Medicine Congress (2019))

• Application of Next Generation Sequencing in Clinical Diagnosis (Personalized Medicine Congress and Kawsar Human Genetics Research Center (2019))

• Programming with R and its application in Genomewide Association Analysis (GWAS) (GemIran Genetic Research group and Iranian Molecular Medicine Network (2019))

• Clinical genomics and NGS (At the ESGM remote training center in IRAN (2019))

• Preliminary and Advanced Research Methodology (Research Institute for Endocrine Sciences (2019)

• Peer review for scientific articles (Research Institute for Endocrine Sciences (2019)