**Leila Najd Hassan Bonab**

MSc, **Cellular and Molecular**, **2017; Royan Institute (Science and Culture)**

**Ph.D. candidate in Molecular Genetics**

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## Background

I was interested in experimental science from elementary school. I started my university education in biology. Then I started teaching biology in high school. I got an MSc degree in cellular and molecular by focusing on designing a molecular kit for genotyping Apolipoprotein E polymorphisms. Furthermore, I passed some advanced courses in Computer science and Biology such as bioinformatics, and genetics (GWAS, NGS).

## Technical skills and Genetics Laboratory

Kariminejad - Najmabadi Pathology & Genetics Center
Research Institute for Endocrine Sciences Shahid Beheshti University of Medical Sciences
Tehran, Iran

- Expert technician in the genetic lab with full experience in DNA extraction and banking, PCR-based test, and Electrophoresis of nucleic acids
- Designing of primers for different PCR-based methods such as tetra-ARMS PCR primers
- Performing qualitative Polymerase Chain Reaction (PCR) techniques
- Providing PCR troubleshooting protocols
- Teaching the laboratory techniques and principles of working with laboratory equipment to new researchers
- Troubleshooting researchers' technical issues
- Analyzing the research outputs
- Familiar with data extraction of ONLINE DATABASES and SITES:

- experience in annotation and analysis of Whole Exome Sequencing, Whole Exome Sequencing, and genomic Chip data by: SAM tools, BAM tools, VCF tools, Plink, IGV

**Thesis Title:**

**Designing a molecular kit for genotyping Apolipoprotein E polymorphisms by Tetra-ARMS PCR**

## Publications

1. Lanjanian, H., **Najd Hassan Bonab, L**., Akbarzadeh, M. et al. 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). Biol Sex Differ 13, 4 (2022). https://doi.org/10.1186/s13293-022-00413-7

2. Akbarzadeh, Mahdi, Parisa Riahi, Nadia Alipour, **Leila Najd Hassan Bonab**, Mohammad Reza Moghadas, Siamak Sabour, Fereidoun Azizi, and Maryam S. Daneshpour. "The AGT epistasis pattern proposed a novel role for ZBED9 in regulating blood pressure: Tehran Cardiometabolic Genetic Study (TCGS)." *Gene* 831 (2022): 146560.

3. Nezhadali, M., Mesbah-Namin, S.A., Hedayati, M. **Najd Hassan Bonab, L**. Serum adiponectin and cortisol levels are not affected by studied ADIPOQ gene variants: Tehran lipid and glucose study. BMC Endocr Disord 22, 104 (2022). https://doi.org/10.1186/s12902-022-01020-8

4. Masjoudi S, Sedaghati-Khayat B, Givi NJ, **Bonab LN**, Azizi F, Daneshpour MS. 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 May 13;11(1):1-1.

5. Safarpour M, Sedaghati-khayat B, **Bonab LN**, Fallah MS, Ebrahimi A, Azizi F, Daneshpour MS. Association of Apolipoprotein E Polymorphism With Risk of Metabolic Syndrome: A Case-Control Study And Meta-Analysis.

6. **Najd Hassan Bonab, Leila**, Maryam Moazzam-Jazi, Reyhaneh-Sadat Miri Moosavi, Mohammad-Sadegh Fallah, Hossein Lanjanian, Sajedeh Masjoudi, and Maryam S. Daneshpour. "Low HDL concentration in rs2048327-G carriers can predispose men to develop coronary heart disease: Tehran Cardiometabolic genetic study (TCGS)." *Gene* 778 (2021): 145485.

7. Javanrouh Givi, N., **Najd Hassan Bonab, L**., Barzin, M. et al. The joint effect of PPARG upstream genetic variation in association with long-term persistent obesity: Tehran cardio-metabolic genetic study (TCGS). Eat Weight Disord (2021). https://doi.org/10.1007/s40519-020-01063-7

8. Moazzam-Jazi, M., **Najd Hassan Bonab, L.,** Zahedi, A.S. et al. High genetic burden of type 2 diabetes can promote the high prevalence of disease: a longitudinal cohort study in Iran. Sci Rep 10, 14006 (2020). https://doi.org/10.1038/s41598-020-70725-4

9. Yari M, **Najd Hassan Bonab L**, Ahmadi R. Study of the effects of orchiectomy and testosterone and estradiol administration on lipids profile in male rats. J Shahid Sadoughi Uni Med Sci 2019; 27(4): 1415-25

## Presentation and Conference Proceeding

## Oral

"**Testosterone, $K_{ATP}$ Channels Openers or Blocker and Insulin Sensitivity**"

(Istanbul, Turkey, 27-28 Sep 2019)

## National Patent:

Designing a molecular kit for genotyping Apolipoprotein E polymorphisms by Tetra-ARMS PCR

## Books:

- Cultivating Cell & Tissue
- Cell Culture Basics

## Honors:

- Best paper of the International Conference of chemical, Environmental and Biomedical Sciences (ICCEBS20)-Turkey
- Selected as the top graduated student (M.Sc.), University of Science and Culture
- Second rank in Startup Biology Competition (Al-Zahra University)

## Conferences:

- 17th C-HPP Symposium, Royan Research Institute
- 3rd International Congress of Iranian Personal Medicine
- Systematic Review / Meta-Analysis Articles

## Education Courses:

- Genetic counseling
- Application of Next-generation Sequencing in clinical Diagnosis
- Concept of genome-wide association studies and their importance
- Introduction to DNA and Protein Databases (summer school)
- Bioinformatics, Linux, and shell script
- clinical genomics and NGS ، ESHG
- Preliminary and Advanced Research Methodology
- Article writing
- Programming with R
- Peer review for scientific articles

## Computer skills

**Statistical Software**

- Competent with most Microsoft Office programmers; good knowledge about HTML, Windows, and Linux.
- Programming: AWK and Bash (Advance)
- Some software for NGS study like as Samtools, Bam tools…
- R / RStudio
- SPSS

**Genetic Software**
- PLINK
- PROGENY
- GeneRunner
- Haploview
- SNPAnalyzer
- R genetic packages

## Other
- Endnote
- Mendeley reference manager
- Office ( word, excel, PowerPoint, Access, Visio)

## Projects

1. An association study of KCNJ11 common polymorphisms with risk of type 2 diabetes: A systematic review and meta-analysis study
2. ICD11 coding for the personal complication and the outcome finding in TLGS participant
3. Assessment of rs139407567, rs4930195and rs641081polymorphisms frequency in AIP gene in acromegaly patients: A descriptive-analytic study
4. Determining the association of 31 SNP from genome-wide association studies with serum levels of free thyroxin and thyroid-stimulating hormone in Tehran Thyroid Study population
5. Identification of variants in genes related to the immune system and inflammation and their association with obesity incidence in an Iranian population: Tehran Cardio-Metabolic Genetic Study (TCGS)
6. Using model-based multifactor dimensionality reduction to detect gene-gene interaction in blood pressure trait in participants of Tehran cardio-metabolic genetic study
7. Discovery of structural variations (SV) of type insertion within the genomic region involved in cardiovascular disease in Tehran cardiometabolic genetic study
8. Discovery of structural variations (SV) of type inversion within the genomic region involved in cardiovascular disease in Tehran cardiometabolic genetic study
9. The association of rs2282679 polymorphism in GC gene with serum 25-hydroxyvitamin D concentration in adults: Tehran Cardio metabolic Genetic Study
10. Calculating the type 2 diabetes genetic risk score for individuals over 20 years old in the Tehran Cardiometabolic Genetic Study (TCGS) data
11. Interaction between air particulate matter (PM2.5-PM10) and polymorphisms of genes of ARAP1, DUSP8, KCNJ11, MTNR1B and KCNQ1 on the risk of type 2 diabetes in the adult population of the Tehran Lipid and Glucose Study (TLGS)

## Language

- English ( fluent)
- Turkish (fluent)

## Conferences:

- 17th C-HPP Symposium, Royan Research Institute
- 3rd International Congress of Iranian Personal Medicine
- Systematic Review / Meta-Analysis Articles