

# Curriculum Vitae

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## 1. PERSONAL INFORMATION

Full Name: **Fatemeh Keyfi, PhD**

Date of Birth: **21 March 1981**

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Phone number: **+989155231407**

## 2. EDUCATION

Degree	Field	Period	University	GPA (out of 20)
PhD	Clinical Biochemistry	2012-2016	Mashhad University, Mashhad, Iran	19.43 (top students)
M.Sc	Biotechnology	2005-2008	Zanjan University, Zanjan, Iran	18.92(top students)

**M.Sc thesis:** *Evaluation of Genetic Diversity in Crocus sativus (Saffron) varieties by molecular markers.*  
Core: 19:87

**PhD thesis:** *Mutation analysis of the mut gene in Methylmalonic acidemia patients.* Core: 19.90

## 3. WORK EXPERIENCES

- 1- **Laboratory Teacher:** Genetic and Cytogenetic Laboratory Courses, Department of biology, PNU University, Gonabad, Iran. 2007 to 2009.
- 2- **Laboratory Technician:** Genetics Testing Division, Pardis Clinical and Genetic Laboratory, Mashhad, Iran. 2007 to 2014
- 3- **Laboratory Technician:** Metabolic Division, Pardis Clinical and Genetic Laboratory, Mashhad, Iran. 2014 to present.
- 4- **Laboratory Teacher:** Genetic Laboratory Courses, Department of biology, Varastegan Institute for Medical Sciences, Mashhad, Iran. 2009 to 2013.
- 5- **Laboratory Quality Control Manager:** Genetic Department, Pardis Clinical and Genetic Laboratory, Mashhad, Iran. 2007 to present
- 6- **Teacher:** Department of Medical Laboratory Sciences and Nutrition, Varastegan Institute for Medical Sciences, Mashhad, Iran. 2012 to present.

- **Experienced in:**

- Diagnosis of some diseases as follows:**

- **Beta Thalasemia**
  - **Alpha Thalassemia**
  - **SMA(gene dosage)**
  - **CAH**
  - **DMD**
  - **Hemophilia**
  - **Paternity**
  - **Hemochromatosis**
  - **Total IgE**
  - **C3, C4, NBT,...**
  - **Metabolic disorders**
  - **HBV**
  - **HCV**
  - **HSV**
  - **CMV**
  - **bcr/abl**
  - **HTLV1**
  - **AntiDNA**
  - **IgM, IgG, IgA**
  - **All metabolic disorders**

- **SKILLS:**

- DNA-RNA extraction, c-DNA synthesis, Standard and RT-PCR
- Real-time PCR
- Gene cloning, Gene manipulation
- Protein purification, Column chromatography, Total protein determination (Bradford), Spectrometry
- Vertical and Horizontal Electrophores
- Primer design
- Basic microbiology laboratory skills
- G-Banding Technique and Cytogenetic
- Cell Culture and Karyotyping with Cytovision software.
- Sequencing analysis with sequencer software.
- SDS-PAGE and Western Blotting
- HPLC chromatography
- Gas-chromatography
- Thin layer chromatography

#### **4. REASERCH AREAS OF INTEREST**

- a. Metabolic disorders
- b. Human Genetic
- c. Molecular Genetic
- d. Molecular Biology
- e. Cancer
- f. Molecular Microbiology
- g. Biotechnology
- h. Molecular Cell biology
- i. Clinical Biochemistry

#### **5. PUBLICATIONS**

1. Abbaszadegan MR\*, Keify F\*, Ashrafzadeh F, Farshchian M, Khadivi-Zand F, Teymoorzadeh MN, et al. Gene dosage analysis of proximal spinal muscular atrophy carriers using real-time PCR. Archives of Iranian medicine. 2011;14(3):188-91. These authors contributed equally in this work\*.
2. Beiki AH, Keifi F, Mozafari J. Genetic differentiation of Crocus species by random amplified polymorphic DNA. Genetic Engineering and Biotechnology Journal. 2010; 2010:1-10.
3. Keify F, Zhiyan N, Mirzaei F, Tootian S, Ghazaey S, Abbaszadegan MR. Two novel familial balanced translocations t(8;11)(p23;q21) and t(6;16)(q26;p12) implicated in recurrent spontaneous abortion. Archives of Iranian medicine. 2012;15(4):249-52.
4. Beiki A, Keify F, Mozafari J. Rapid genomic DNA isolation from corm of Crocus species for genetic diversity analysis. Journal of Medicinal Plants Research. 2011; 5(18):4596-600.

5. Keify F, Beiki AH. Exploitation of random amplified polymorphic DNA (RAPD) and sequence-related amplified polymorphism (SRAP) markers for genetic diversity of saffron collection. *Journal of Medicinal Plants Research*. 2012; 6(14):2761-8.
6. Abbaszadegan MR, Hassani S, Vakili R, Saberi MR, Baradaran-Heravi A, A'rabi A, et al. Two novel mutations in CYP11B1 and modeling the consequent alterations of the translated protein in classic congenital adrenal hyperplasia patients. *Endocrine*. 2013;44(1):212-9.
7. Ghazaey S, Mirzaei F, Ahadian M, Keifi F, Semiramis T, Abbaszadegan MR. Pattern of chromosomal aberrations in patients from north East iran. *Cell Journal (Yakhteh)*. 2013;15(3):258.
8. Keify F, Azimi-Nezhad M, Zhiyan-abad N, Nasseri M, Abbaszadegan MR. Inherited genetic markers for thrombophilia in northeastern Iran (a clinical-based report). *Reports of biochemistry & molecular biology*. 2014;2(2):76.
9. Ghazaey S, Keify F, Mirzaei F, Maleki M, Tootian S, Ahadian M, et al. Chromosomal Analysis of Couples with Repeated Spontaneous Abortions in Northeastern Iran. *International Journal of Fertility & Sterility*. 2015;9(1):47-54.
10. Keyfi F, Sankian M, Moghaddassian M, Rolfs A, Varasteh A. Molecular, biochemical, and structural analysis of a novel mutation in patients with methylmalonyl-CoA mutase deficiency. *Gene*. 2016; 576(1): 208-13.
11. Keyfi F, Abbaszadegan MR, Rolfs A, Orolicki S, Moghaddassian M and Varasteh AR. Identification of a novel deletion in the MMAA gene in two Iranian siblings with vitamin B12-responsive methylmalonic acidemia. *CMBL*. 2016. 21: 4.
12. Keyfi F, Talebi S, Varasteh A-R. Methylmalonic Acidemia Diagnosis by Laboratory Methods. *Reports of biochemistry & molecular biology*. 2016; 5(1):1-14
13. Keyfi F, Varasteh A. Development and Validation of a GC-FID Method for Diagnosis of Methylmalonic Acidemia. *Reports of biochemistry & molecular biology*. 2016; 4(2):104-9.
14. Asgari A, Rouhi Dehnabeh S, Zargari M, Khani S, Mozafari H, Varasteh A, et al. Clinical, Biochemical and Genetic Analysis of Biotinidase Deficiency in Iranian Population. *Archives of Iranian medicine*. 2016; 19(11):774-8.
15. Keyfi F, Lukacs Z, Varasteh A. A Description of Reference Ranges for Organic Acids in Urine Samples from A Pediatric Population in Iran. *Reports of biochemistry & molecular biology*. 2017; 6(1):40-50.
16. Keyfi F, Nasseri M, Nayerabadi S, Alaei A, Mokhtariye A, Varasteh A. Frequency of Inborn Errors of Metabolism in a Northeastern Iranian Sample with High Consanguinity Rates. *Human heredity*. 2018;83(2):71-8.
17. MokhtariyeA, Hagh-NazariL,VarastehAR, KeyfiF\*. Diagnostic methods for lysosomal storage disease. 2018. (\* Corresponding author)

18. Mokhtariye A, Varasteh AR, Marzban S, Keyfi F\*. The effects of pre-analytical variables on the diagnosis of Inborn Errors of Metabolism; a review study. 2018. Journal of North Khorasan, University of Medical Sciences. (\* Corresponding author)
19. Keyfi F, Ebrahimzadeh-Vesal R, Zhiyan N, Nayebi M, Nasserri M, Abbaszadegan MR. The relationship between MTHFR polymorphisms and abortion in Iranian women. *Gene Reports*. 2018;13:130-3.
20. Keyfi F, Nahid S, Mokhtariye A, Nayerabadi S, Alaei A, Varasteh A-R. Evaluation of 25-OH vitamin D by high performance liquid chromatography: validation and comparison with electrochemiluminescence. *Journal of Analytical Science and Technology*. 2018;9(1):25.
21. Keyfi F, Abbaszadegan MR, Sankian M, Rolfs A, Orolicki S, Pournasrollah M, et al. Mutation analysis of genes related to methylmalonic acidemia: identification of eight novel mutations. *Molecular biology reports*. 2019. 46: 271-285
22. Mokhtariye A, Varasteh A-R, Alaei A, Marzban S, Keyfi F. Evaluation of hemolysis effect on hemoglobin measurement by capillary electrophoresis. *Journal of Analytical Science and Technology*. 2019;10(1):6.
23. Nasserri M\*, Keyfi F\*, Rahbarian R, Rajabian M, Mohammad Reza Abbaszadegan MR. *Reports of Biochemistry and Molecular Biology*. 2019. Accepted (\*These authors contributed equally to this work)
24. Mokhtariye A, Hagh-Nazari L, Varasteh AR, Mozafari H, Keyfi F\*. Validation and standardization of a fluorometric method for alpha glucosidase activity assay in detection of Pompe disease. *Combinatorial Chemistry & High Throughput Screening*. 2019. Accepted. (\*Corresponding Author)
25. Mokhtariye A, Pouresmaeil O, Fatemeh Baledi F, Marzban S, Ghavidel F, Aref Derafsheh A, Vosoughi M, Keyfi F\*. Correlation between thyroid disorders and H. pylori infection rate. *Govaresh Journal*. 2019. Accepted. (\*Corresponding Author)
26. Hashemniya V, Hosseinzade F, Tajik H, Varasteh AR, Sharifi N, Keyfi F\*. Effects of Vitamin D on Human Body and the Measurement Methods: A Systematic Review. *Govaresh Journal*. 2020. Accepted. (\*Corresponding Author)

## **PRESENTATIONS**

1. Hagh Nazari S, Keify F. Saffron and various fraud manner in its production and trades. The second International symposium on saffron Biology and Technology. 1 June 2005, Mashhad, Ferdowsi University, Iran.
2. Keify F, Mozaffari J, Beiki AH and Soheilvand S. Genetic diversity of cultivated clones and wild species of Crocus in Iran. The five National Conference of Biotechnology, 26 Nov 2007, Tehran, Tarbiyat Modarres University, Iran.
3. Keify F, Mozaffari J and Beiki AH. A standardized protocol for genomic DNA isolation from corn. The five National Conference of Biotechnology, 26 Nov 2007, Tehran, Tarbiyat Modarres University, Iran.

4. Keify F, Mozaffari J, Beiki AH, Soheilvand S and Shakib MA. Genetic diversity of cultivated clones and relative species of *Crocus* genus by SRAP and RAPD markers. The Second International Conference of Biotechnology, 15-17 Nov. 2008, Tehran, Tehran University, Iran.
5. Keify F, Mozaffari J, Beiki AH and Soheilvand S. Genetic diversity of cultivated clones and wild species of *Crocus* in Iran. The National Conference of saffron. 2009. Mashhad, Medical Science University, Iran.
6. Abbaszadegan MR, Keify F, Ahadian M. Molecular genetics of autosomal recessive polycystic kidney disease. 2012.
7. Abdolreza Varasteh, Fatemeh Keify. Application of Tandem Mass Spectrometry for newborn screening of metabolic disorders. 2014
8. Abdolreza Varasteh, Fatemeh Keify. The effects of preanalytical variables on the diagnosis of Inborn Errors of Metabolism. 2015
9. Mokhtariye A, Pouresmaeil O, Fatemeh Baledi F, Marzban S, Ghavidel F, Aref Derafsheh A, Vosoughi M, Keyfi F\*. The correlation between thyroid disorders and *H. pylori* gastritis. 2018. 11th International Congress Laboratory and Clinical Sciences. (\*Corresponding Author)
10. Veys Hashemnia, Fatemeh Keify. Application of CRISPR-Cas9 System in Cancer Therapy: A systematic Review. 2019. 12th International Congress Laboratory and Clinical Sciences. (\*Corresponding Author)
11. Mokhtariye A, Hagh-Nazari L, Varasteh AR, Mozafari H, Keyfi F\*. Determination of alpha glucosidase and beta glucocerebrosidase activity in detection of Pompe and Gaucher lysosomal diseases. 2019. 12th International Congress Laboratory and Clinical Sciences (\*Corresponding Author)

#### **CERTIFICATION:**

- 1- Mutagenesis and its application in genetics. 2006. Research institute of physiology and biotechnology, University of Zanjan, Iran.
- 2- Application of Stem Cells in Gene Trapy. 2008. Bu Ali institute, Mashhad, Iran.
- 3- Genetic Study of Patient with cystic Fibrosis. 2010. Ghaem Hospital. Mashhad, Iran.
- 4- Standardization in Laboratory workshop. 2010. Health Reference Laboratory, Mashhad, Iran
- 5- Flow cytometry workshop. 2012. Division of Immunogenetic and cell culture, Bu-Ali Research Institute, Mashhad, Iran
- 6- Cell culture workshop. 2012. Division of Immunogenetic and cell culture, Bu-Ali Research Institute, Mashhad, Iran
- 7- SPSS software. 2012. Mashhad University of Medical Sciences, Mashhad, Iran.
- 8- HPLC workshop. 2013. Eastern Mediterranean Health Genomic and Biotechnology Network. Tehran. Iran.

- 9- Scientific Writing workshop. 2013. Mashhad University of Medical Sciences, Mashhad, Iran.
- 10- Teaching Methods workshop. 2014. Varastegan Institute for Medical Sciences. Mashhad, Iran
- 11- Functional data in medical sciences workshop. 2014. Mashhad University of Medical Sciences, Mashhad, Iran.
- 12- Structural Bioinformatics. 2015. Medical Genetics Research Center, Mashhad University of Medical Sciences. Mashhad, Iran
13. Principles on Systematic and Meta analysis. 6 hours. 2017. Mashhad University of Medical Sciences.
- 14- Reviewer for posters. 2018. 2nd International and 10th National Iranian Neurogenetic Congress, Mashhad University of Medical Sciences. Mashhad, Iran
- 15- Conference of Iranian Medical Journals Editors. 2018. Mashhad University of Medical Sciences.
- 16- Principles on new teaching methods. 4 hours. 2018. Education Development Center. Varastegan Institute for Medical Sciences.
- 17- Principles on eloquent public speech. 6 hours .2018. Education Development Center. Varastegan Institute for Medical Sciences.
- 18- Principles on Systematic and Meta analysis. 8 hours. 2019. Varastegan Institute for Medical Sciences.
- 19- Principles on student evaluation methods. 4 hours. 2019. Education Development Center. Varastegan Institute for Medical Sciences.

**BOOK PUBLISHING:**

- 1- Real-Time PCR, Principles and Applied Methods. 2010.
- 2- DNA Extraction, Principles and Applied Methods. 2011
- 3- Practical and easy guide of PCR. 2011.
- 4- Clinical Cytogenetic, Clasic and Molecular. 2011.
- 5- Practical Immunology. 2015
- 6- ABC of Inherited Metabolic Disorders. 2018

**PATENT:**

<b>Accession Number</b>	<b>Disease</b>	<b>Gene Name</b>
GU201906	CAH	CYP11B1
KP289323	MMA	MUT
KP289324	MMA	MUT

KR026956	MMA	MUT
KF030882	MMA	MUT
KR026957	MMA	MUT
KR026958	MMA	MMAA

**REFREES:**

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- Mohammad R. Abbaszadegan, MT(ASCP), Ph.D. Associate Professor Director, Division of Human Genetics Bu-Ali Research Institute Mashhad University of Medical Sciences Mashhad, Iran, Phone:+98511-7112611-5. Emails: [abbaszadeganmr@mums.ac.ir](mailto:abbaszadeganmr@mums.ac.ir)