



ITA					
Name: Mehdi		PhD (Biological Sciences)			
Surname: Banan					
Title/Degree: PhD/MBA		Department of Genetics			
Research Interests: Genetics and gene therapy of hemoglobin disorders					
Scopus Profile: http://www.scopus.com/authid/detail.url?origin=AuthorProfile&authorId=55404728100&zone= Google Scholar Profile: https://scholar.google.com/citations?user=55mvY10AAAAJ&hl=en&oi=ao				Updated: 2021/10/12	
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Education					
Date	Degree	Duration	Institution	Country/City	Major
1989	BSc	3 years	University of Texas at Austin	Austin, TX, USA	Biology (Molecular)
1996	PhD	6 years	University of Texas at Austin	Austin, TX, USA	Biological Sciences
2001	MBA	2 years	University of Texas at Austin	Austin, TX, USA	Finance
Faculty member					
Year	Position	Duration	Institution/Course		Location
1997-2002	Lecturer	5 years	University of Texas at Austin		Austin, TX, USA
2007-present	Associate professor	15 years	University of Social Welfare and Rehabilitation Sciences		Tehran, Iran

Field of Specialization			
-Genetic engineering: CRISPR/Cas9 (indel & large deletion formations, gene knock-ins), RNAi (siRNA & shRNA), qRT-PCR, Western blot, lentivirus system, EMSA, molecular cloning, dual luciferase assay, overlap-PCR mutagenesis, cell culture, etc. -Molecular genetics: Association studies (using ARMS-PCR, Tetra-ARMS-PCR, and PCR-RPLP for genotyping)			
Language Ability			
-English (native) -Farsi (native)			
Research Experience			
Year	Position	Institution/Course	Location
1996-1997	Postdoc	University of California at Berkeley	Berkeley, CA, USA
2001-2004	Business Development Analyst	Ambion Inc.	Austin, TX, USA
2005-2006	Research Director	Tofigh Daru Pharmaceuticals	Tehran, Iran
2021-present	Research Director	Gene Therapy and Regenerative Medicine Research Center; Hope Generation Institute	Tehran, Iran
Select publications:			
• Lee W-H, Banan M, Harriss J, Hwang I, Woodward E, Youn HJ and Gottlieb PD (1994) <i>Cis</i>-acting DNA elements and cell-specific nuclear proteins which may play a role in regulation of mouse <i>CD8α</i> gene transcription. <i>Int Immunol.</i> 6(9): 1307-1321. • Banan M, Rojas IC, Lee W-H, King H, Harriss J, Kobayashi R, Webb CF and Gottlieb PD (1997) Interaction of nuclear matrix-associated region (MAR)-binding proteins, SATB1 and CDP/Cux, with a MAR element in an upstream region of mouse <i>CD8α</i> gene. <i>J Biol Chem.</i> 272(29): 18440-18452. • Banan M, and Puri N (2004) The Ins and outs of RNAi in mammalian cells. <i>Curr Pharm Biotechnol.</i> 5(5): 441-450. • Latham K, Pallotta V, Ford L, Byrom M, Banan M, Ku P-S, and Brown D. Six methods of inducing RNAi in mammalian cells. In "RNA Interference Technology: From Basic Science to Drug Development (eds. K Appasani)." <i>Cambridge University Press</i>, 2005. • Esmaeilzadeh-Gharadaghi E, Banan M, Farashi S, Mirabzadeh A, Farokhashtiani T, Hosseinkhani S, Heidari A, Najmabadi H, and Ohadi M (2011) Support for down-tuning of the calreticulin gene in the process of human evolution. <i>Prog Neuropsychopharmacol Biol Psychiatry</i> 35: 1770-1773. • Heidari A, Nariman Z, Esmaeilzadeh-Gharadaghi E, Banan M, Hosseinkhani S, Mohammadparst S, Oladnabi M, Ebrahimpour MR, Soosanabadi M, Darvish H, Ghasemi S, Farashi S, Najmabadi H, and Ohadi M (2012) Core promoter STRs: Novel mechanism for inter-individual variation in gene expression in humans. <i>Gene</i> 491(1): 195-198.			

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- Heidari A, Hosseinkhani S, Talebi S, Meshkani R, Esmailzadeh-Gharadaghi E, **Banan M**, Darvish H, and Ohadi M (2012) Haplotypes across the human caveolin 1 gene upstream purine complex significantly alter gene expression: Implication in neurodegenerative disorders. *Gene* 501(1): 186-189.
- **Banan M***, Bayat H, Azarkeivan A, Mohammadparast S, Farashi S, Hadavand-Khani M, Neishabury M, and Najmabadi H (2012) The *XmnI* and *Bcl11A* single nucleotide polymorphisms may help predict hydroxyurea response in Iranian β -thalassemia patients. *Hemoglobin* 36(4): 371-380. *corresponding author (**Most Cited**)
- **Banan M** (2013) Hydroxyurea treatment in β -thalassemia patients: to respond or not to respond? *Ann Hematol.* 92: 289-299.
- **Banan M***, Bayat H, Namdar-Aligoodarzi P, Azarkeivan A, Kamali K, Daneshmand P, Zaker-Kandjani B, and Najmabadi H (2013) Utility of the multivariate approach in predicting β -thalassemia intermedia or β -thalassemia major types in Iranian patients. *Hemoglobin* 37(5): 413-422. *corresponding author
- Valipour E, Kowsari A, Bayat H, **Banan M**, Kazeminasab S, Mohammadparast S, and Ohadi M (2013) Polymorphic core promoter GA-repeats alter gene expression of the early embryonic developmental genes. *Gene* 531(2): 175-179.
- Pazhoomand R, Keyhani E, **Banan M**, Najmabadi H, Khodadadi F, Iraniparast A, Feiz F, Majidzadeh K, Bahman I, Moghadam F, Sobhani AM, Muhammadnejad A, Abedini SS, and Behjati F (2013) Detection of HER2 status in breast cancer: comparison of current methods with MLPA and real-time RT-PCR. *Asian Pac J Cancer Prev.* 14(12): 7621-7628.
- Esmailzadeh-Gharehdaghi E, Amani A, Khoshayand MR, **Banan M**, Esmailzadeh-Gharehdaghi E, Amini MA, and Faramarzi MA (2014) Chitosan nanoparticles for siRNA delivery: optimization of processing/formulation parameters. *Nucleic Acid Ther.* 24(6): 420-427.
- Soosanabadi M, Bayat H, Kamali K, Saliminejad K, **Banan M**, Khorram Khorshid HR (2015) Association study of IL-4 -590 C/T and DDX39B -22 G/C polymorphisms with the risk of late-onset Alzheimer's disease in Iranian population. *Curr Aging Sci.* 8 (3):276-281.
- Larti F, Kahrizi K, Musante L, Hu H, Papari E, Fattahi Z, Bazzazadegan N, Liu Z, **Banan M**, Garshasbi M, Wienker T, Ropers HH, Galjart N, and Najmabadi H (2015) A defect in the CLIP1 gene (CLIP-170) can cause autosomal recessive intellectual disability. *Eur J Hum Genet.* 23(3): 331-336.
- Zaker-Kandjani B, Namdar-Aligoodarzi P, Azarkeivan A, Najmabadi H, and **Banan M*** (2015) Mutation screening of the *Krüppel-Like Factor 1* gene by using single-strand conformation polymorphism in a cohort of Iranian β -thalassemia patients. *Hemoglobin* 39(1): 24-29. *corresponding author
- Manafi-Shabestari R, Safa M, Alikarami F, **Banan M**, and Kazemi A (2017) CREB knockdown inhibits growth and induces apoptosis in human pre-B acute lymphoblastic leukemia cells through inhibition of prosurvival signals. *Biomed Pharmacother.* 87:274-279.
- Maroofi N, Azarkeivan, Banihashemi S, Mohammadparast S, Aghajani-refah A, and **Banan M*** (2017) An enhancer haplotype may influence *BCL11A* expression levels and the response to hydroxyurea in β -thalassemia patients. *Pharmacogenomics* 18(10):955-967. *corresponding author
- Abdolhossein Zadeh B, Yavari K, **Banan M**, Fallah A, Nasehi L, Absalan M, and Tavosidana G (2018) Lentiviral-mediated *BCL2* gene knockdown using comparative microRNA adaptive shRNAs. *Cell Mol Biol. (Noisy le Grand)* 64(11):25-30.

- Mehravar M, Shirazi A, Nazari M, and **Banan M** (2019) Mosaicism in CRISPR/Cas9-mediated genome editing. *Dev Biol.* 445:156-162. **(Most Cited)**
- Jafari H, Hesami S, Safi M, Ghasemi F, and **Banan M*** (2019) Expression and hydroxyurea-triggered induction of EGFP upon CRISPR/Cas9-mediated integration into the γ -globin gene of K562 cells. *Biotechnol Lett.* 41:691-700. *corresponding author
- **Banan M** (2020) Recent advances in CRISPR/Cas9-mediated knock-ins in mammalian cells. *J Biotechnol.* 308:1-9. **(Most Cited)**
- Hassani M, Hesami S, Maroofi N, and **Banan M*** (2021) Pitfalls of restriction enzyme mapping following generation of CRISPR constructs. *Avicenna J Med Biotechnol.* 13(4):226-229. *corresponding author