

## CURRICULUM VITAE



**Arshad Hosseini**

**Birthday : 25.10.1963**

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### **POSITION HELD**

Head of Biotechnology Dept. Associate Professor, Department of Medical Biotechnology, Allied Medical Sciences, Iran University of Medical Sciences, Tehran, Iran

### **EDUCATION**

2004-2008, Ph.D of Biotechnology (molecular genetics) , University of Pune, Pune, India, Institute of Bioinformatics and Biotechnology.

1990-1993, B.Sc, Shahid Beheshti University, Tehran, Iran

1994-1997, M.Sc, Tehran University of Medical Sciences, Tehran, Iran

### **Teaching Experience / Academic Activities:**

- Kurdistan University of Medical Science, 11 years teaching in different courses
- Azad University, Sanandaj, 6 years teaching in different courses
- Kurdistan University, 2 years teaching in different courses
- Tehran University of Medical Science
- Iran University of Medical Science
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### **Areas of teaching:**

Bioinformatics, Biotechnology, Molecular Biology, Pathobiology, water and wastewater microbiology, Computational and System Biology, New Generation Sequencing

## **KEY QUALIFICATIONS**

### **Skills**

#### **Wet lab and in silico experiences on:**

- Solution preparation
- Microscopy and standard biochemical characterization methods
- Molecular Cloning
- Whole-genome sequencing
- Exome sequencing
- Isolation of genomic and plasmid DNA
- DNA Construction of plasmid and genomic library
- Shotgun cloning and sequencing
- Assembly and Annotations of the sequence
- Data Analysis
- Conventional and Real-time PCR
- Proteomics
- NGS data analysis
- Cancer biomarker study
- Proficient at DNA, RNA and Protein Purification and Characterization
- Drug resistance Studies
- Familiarity with cell culture, cultivating, monitoring
- Good Team Player with exemplary analytical and problem-solving skills
- Laboratory experience in the Cell culture techniques
- Restriction digestion of DNA
- Primer designing
- DNA transformation (transfection of cells with plasmid DNA)

#### **Scientific Softwares Skills in:**

- Gene Structure Prediction
- Functional motif searching
- Sequence retrieval
- Multiple sequence alignment
- Similarity Searching
- Gene Structure Prediction Tools
- 2D gel analysis
- Protein structure prediction
- DNA analysis including translation
- Primer designing
- ORF analysis

- Phylogenetic analysis
- Protein analysis
- Sequence assembly

## **General Softwares**

Experience in

- Communication tools
- Social media
- Spreadsheets
- Word processing and desktop publishing tools
- Presentation tools
- Computer programming
- Databases
- Graphic design

## **FIELDS OF INTEREST**

Medical Biotechnology and Molecular Biology (Genetic engineering, Genetic of microorganisms, cáncer biomarkers, MicroRNA, NanoBiotechnology, PCR and Real-time PCR, peptide synthesis, Bioinformatics (Genomics, transcriptomics) genomic analysis, NGS

## **PUBLICATIONS**

### **BOOKS**

Current Buffer's and Solution's in Medical Biotechnology Mohammad Reza Fayazi Dr. Arshas Hosseini

Current Terminology in Medical Biotechnology Mohammad Reza Fayazi Dr. Arshas Hosseini

### **Research articles**

### **Published papers entitled**

1. An Overview on the Pathophysiological Roles of microRNA-802: a Literature Review. Eini, M., Kiani, J., Hosseini, .S., ...Bahramali, G., Hosseini, A. *Biointerface Research in Applied Chemistry*, 2023, 13(2), 172.
2. Newly Developed Targeted Therapies Against the Androgen Receptor in Triple-Negative Breast Cancer: A Review Choupani, E., Gomari, M.M., Zanganeh, S., Saraygord-Afshari, N., Hosseini, A. *Pharmacological Reviews*, 2023, 75(2), pp. 309–327.
3. Combination of androgen receptor inhibitor enzalutamide with the CDK4/6 inhibitor ribociclib in triple negative breast cancer cells. Choupani, E., Madjd, Z., Saraygord-Afshari, N., Kiani, J., Hosseini, A. *PLoS ONE*, 2022, 17(12 December).
4. Evaluation of pH change effects on the HSA folding and its drug binding characteristics, a computational biology investigation. Gomari, M.M., Rostami, N., Faradonbeh, D.R., ...Hosseini, A., Dokholyan, N.V. *Proteins: Structure, Function and Bioinformatics*, 2022, 90(11), pp. 1908–1925.
5. Bioinformatic Investigation of Micro RNA-802 Target Genes, Protein Networks, and Its Potential Prognostic Value in Breast Cancer. Eini, M., Parsi, S., Barati, M., Azarnezhad, A., Hosseini, A. *Avicenna Journal of Medical Biotechnology*, 2022, 14(2), pp. 154–164.
6. The role of MicroRNA-429 in E2F3 expression in breast cancer cell lines Darvishi, S., Atyabi, N., Hosseini, A., Langeroudi, A.G., Moradi, S. *Journal of Mazandaran University of Medical Sciences*, 2018, 28(168), pp. 29–39.
7. Synergistic effects of arsenic trioxide and radiation: Triggering the intrinsic pathway of apoptosis. Moloudi, K., Neshasteriz, A., Hosseini, A., Mirzaei, E., Azarnezhad, A. *Iranian Biomedical Journal*, 2017, 21(5), pp. 330–337.
8. The Role of MicroRNA-429 in E2F3 Expression in Breast Cancer Cell Lines. Saeedeh Darvishi, Nahid Atyabi, Arshad Hosseini, Pouria Omid, Farhad Zaker, Arash Ghalyanchi Langeroudi, Siavash Moradi. *Journal of Mazandaran*

University of Medical Sciences. Volume 28, Issue 168 (1-2019).

9. Whole exome sequencing for mutation screening in hemophagocytic lymphohistiocytosis. Rahmani, E.S., Fathi, M., Abazari, M.F., Rahimi, H., Hosseini, A. Iranian Journal of Pediatric Hematology and Oncology, 2020, 10(1), pp. 38–48.
10. Whole exome sequencing of an x-linked thrombocytopenia patient with normal-sized platelets. Fathi, M., Shahraki, H., Rahmani, E.S., ...Abazari, M.F., Hosseini, A. Avicenna Journal of Medical Biotechnology, 2019, 11(3), pp. 253–258
11. PTEN and p53 gene expressions in breast cancer specimens and their clinicopathological significance Salmani, H., Hosseini, A., Azarnezhad, A., Ahmad, H. Middle East Journal of Cancer, 2018, 9(2), pp. 105–111.
12. Synergistic Effects of Arsenic Trioxide and Radiation: Triggering of Intrinsic Pathway of Apoptosis. Iranian Biomedical Journal. Accepted for publishing 1 January 2017.
13. Distribution and comparison of antibiotic resistance Pathogenicity Islands among UPEC and DEC. International Journal of Advances in Science Engineering and Technology, ISSN: 2321-9009 Volume- 3, Issue-4, Oct.-2015.
14. Pathotypic and Phylogenetic Study of Diarrhegenic *Escherichia coli* and Uropathogenic *E. coli* Using Multiplex Polymerase Chain Reaction. Jundishapur J Microbiol. 2016 February; 9(2).
15. Analysis of potential associations of two common polymorphisms in the ABCC1 3'UTR with breast cancer susceptibility, Thrita. 5(2): e35121, DOI: 10.5812/thritaj.35121, Jun 2016.
16. بهبود و توسعه میزان بیان ، حلالیت و تسهیل تخلیص آنزیم نوترکیب پروتئاز ( rPR ) ویروس HIV با روش TOPO-Cloning در باکتری E.Coli BL21 . مجله تازه های بیوتکنولوژی سلولی – مولکولی ، دوره ششم، شماره بیست و یکم- زمستان 1394

17. Cloning and Expression of Soluble Recombinant HIV-1 CRF35 Protease-HP Thioredoxin Fusion Protein. *Avicenna J Med Biotechnol.* 2016 Oct-Dec; 8(4): 175–181.
18. Distribution of the mutated delta 32 allele of CCR5 co-receptor gene in Iranian population, *Medical Journal of The Islamic Republic of Iran (MJIRI)*, Vol. 28.140. 29 November 2014.
19. Simple Sequence Repeats in specific genes groups of *Shigella* genome, *journal of IIOABJ*; Vol. 4; Issue 1; 2013:17–24.
20. Characterization of *Shigella flexneri* isolates by Tandem Repeat Analysis and Pulsed-Field Gel Electrophoresis, *journal of IPCBEE*, 2012.
21. Cloning, soluble expression and immunoreactivity of HIV-1 CRF35\_AD p24 protein in fusion with HP-thioredoxin from Iranian clinical isolates, *journal of Lab Medicine* 2012 | Volume 43, Number 6.
22. Simple sequence repeats in different genome sequences of *Shigella* and comparison with high GC and AT- rich genomes, *journal of DNA sequence* Volume 19, Issue 3 June 2008, pages 167 - 176.
23. Fuzzy Expert System for Fluid Management in General Anesthesia, *Journal of Clinical and Diagnostic Research.* 2007Aug; (4)256-267.
24. Co-inheritance of a-and b-thalassemia in Khuzestan Province, Iran, *Hematology* HEM0781.3d 19/3/08 10:03:43.
25. Study of contamination prevalence of strawberries with ova of human bowel parasites, *scientific journal of Kurdistan University of medical sciences*, Spring 1999, Vol 3, No 3.

Accepted for Publish

1. Rational peptide design for targeting cancer cell invasion. Gomari, M.M et al. *PROTEINS: Structure, Function, and Bioinformatics.* 03-Aug-2023
2. Bioinformatics study of hsa-MIR-429 target genes and the target sequence finding of sox4, oct4 and BMI1 genes that connect to hsa-MIR-429.

Sara Salajegheh, Arshad Hoseini, Samira Salajegheh, Hesam Dehghani, Gholamreza Hashemitabar. *Biointerface Research in Applied Chemistry*.

## **Abstracts**

### **National/International Symposia/Workshops:**

1. Attended in the second congress of parasitology, December 1997, Tehran, Iran
2. Attended National Workshop 14– 30 Dec, 2004, on “New Trend in Biotechnology and Bioinformatics” department of Biotechnology and Bioinformatics Center, University of Pune.
3. Attended workshop on “Bioinformatics analysis using Accelrys GCG and seqLab, university of Pune, 13-14 December 2005”.
4. Attended Workshop on Knowledge Discovery in Life Sciences: Tools & Techniques in Bioinformatics January 29-February 2, 2007.
5. Attended Workshop on GCG package at Bioinformatics centre from 13th to 14th of December.
6. Poster Presentations in the third congress of parasitology, March 2000, Sari, Iran on Epidemiological and sero epidemiological study of hydatidosis and echinococcosis in some regions of Kurdistan, Iran.
7. Poster Presentations in the third congress of parasitology, March 2000, Sari, Iran on Study of contamination prevalence of strawberries with ova of human bowel parasites.
8. Poster presentation in the International Symposium on frontiers in Genetics and Bioinformatics-Retrospect and Prospect organized by department of Genetics, Osmania University, Hyderabad, 8-10 January,

2005, on “Abundance, distribution and composition of simple sequence repeats in the genomes of *Shigella* strains”.

9. Poster presentation in the International Symposium on frontiers in Genetics and Bioinformatics-Retrospect and Prospect organized by department of Genetics, Osmania University, Hyderabad, 8-10 January, 2005, on “Nucleotide Sequence Analysis of *Shigella Flexneri* 1a”.
10. Oral Presentation in fourth Annual seminar of Iranian students in India in Information technology, Bangalore, March 2005, on “Application of Information Technology in Bioinformatics and life sciences”.
11. Oral Presentation in International scientific experience (ISE) (IRAN, INDIA), January 20<sup>th</sup>, 2006, Pune India, on “Perspectives of Genome researches”.
12. Oral Presentation in Seventh Academic Seminar of Iranian students, February 2008, Science, Art, Humanities, Mysore, India on “SSR in different genome sequences of *Shigella*”.
13. Poster presentation in 5<sup>th</sup> Iranian Congress of Epidemiology, October 2008, Kurdistan University of Medical Science, Iran, on "Constipation prevalence in Kurdistan of Iran".
14. Poster presentation in 5<sup>th</sup> Iranian Congress of Epidemiology, October 2008, Kurdistan University of Medical Science, Iran, on "Study of dyspepsia Prevalence and some related factors in Kurdistan of Iran".
15. Acceptance for oral presentation of paper entitled” Distribution and Frequency of  $\beta$  –Thalassemia mutations in various parts of IRAN “in 9<sup>th</sup> Iranian Genetics Congress, May 2006.
16. Oral Presentation in the 2<sup>nd</sup> International student conference of Biotechnology, 15-17 November 2008, on "Study on SSR in Clusters of Orthologous Groups of proteins (COGs) in *Shigella flexneri* genome".



- 17.** Oral Presentation in the first seminar on Biology and Biotechnology, 2-3 March 2008, in Kurdistan, on "Mini review on Biotechnology in Developing Countries: Status of I.R.Iran and India.
- 18.** Poster presentation in the Sixth European Meeting on Molecular Diagnostics, October 22<sup>nd</sup>&23<sup>rd</sup> 2009, the Netherlands on “ Molecular Typing of *Shigella flexneri* Based on VNTR”
- 19.** Oral Presentation in the Shijiazhuang International Life Science & Pharmaceutical Forum 2011, 23-25 May, China on “Variable number of tandem repeats and pulsed-field gel electrophoresis cluster analysis of *Shigella flexneri*” and “Simple sequence repeats in Plasmids and pathogenicity islands of *Shigella* species”
- 20.** Oral Presentation in the 4th International Congress of Molecular Medicine, 27-30 June, 2011, Istanbul, Turkey, on “Frequency, structure and function of *Shigella* and *E. coli* Pathogenesis Islands” and “*Shigella* antibiotic resistance pattern and its relationship with *Shigella* resistance locus on”
- 21.** Invited Speaker in 2<sup>nd</sup> MBA Biotechnology Congress 9-10 December, 2012 on “Role Of Bioinformatics in the medical biotechnology development.
- 22.** Poster presentation in the 1<sup>st</sup> Congress on Novel & Innovative laboratory Techniques 2-4 Oct 2013 Tehran, Iran on” Mitochondrial Haplotypes and their Impact on Coronary Artery Disease”.
- 23.** Poster presentation in the 1<sup>st</sup> Congress on Novel & Innovative laboratory Techniques 2-4 Oct 2013 Tehran, Iran on” Mitochondrial haplotypes and their impact on breast cancer”
- 24.** Oral Presentation in the 4<sup>th</sup> International Conference Of ISERD 6<sup>th</sup> of June 2016, Istanbul on “Distribution and comparison of antibiotic resistance

Pathogenicity Islands among UPEC and DEC”

25. Oral Presentation in the 4<sup>th</sup> International Conference Of ISERD 6<sup>th</sup> of June 2016, Istanbul on “Cloning and soluble expression of Hiv-1 Crf35 protease infusion with thioredoxin from an Iranian Clinical isolate”
26. Poster presentation in The First International Congress of Iranian Personalized Medicine 25-27 Feb 2017 , Iran University of medical Sciences On Whole Exome Sequencing Reveals a Novel Frameshift Deletion in Exon of Wiskott-Aldrich Syndrome Causes Primary Immunodeficiency.

## RESEARCH GRANTS

1. Tehran University of Medical Sciences, Epidemiological and sero epidemiological study of hydatidosis and echinococcosis in some regions of Kurdistan, Iran.
2. Kurdistan University of Medical Science, Study of contamination prevalence of strawberries with ova of human bowel parasites.
3. Kurdistan University of Medical Science, Survey of cryptosporidiosis and other gastrointestinal parasites in children in Sanandaj, Kurdistan, Iran.
4. Kurdistan University of Medical Science, A comparative study on obies balsam of Kurdistan (Anacardiaceae) and Canada balsam for mounting microscopy slides.
5. Kurdistan University of Medical Science, water examination with one method of filtration for detection cyst and oocyst of protozoa and ova parasite.
6. Kurdistan University of Medical Science, Study of intestinal parasite prevalence in Kurdistan of Iran.
7. Study on *Shigella* antibiotic resistance patterns and its relationship with SRL

PAI (*Shigella* resistance locus on Pathogenicity Island) in dysenteric cases.

8. Kurdistan University of Medical Science, Comparison study of 10 virulence genes in *Escherichia coli* strains isolated from urinary tract infection cases by multiplex PCR.
9. Kurdistan University of Medical Science, Effects of probiotic and prebiotic composition on standard regimens for *H. pylori* eradication.
10. pathogenicity islands of *Shigella* and *E. coli*: frequency, structure and function
11. Kurdistan University of Medical Science, Study of Biozyme Cleanse Powder for the treatment of chronic constipation
12. Kurdistan University of Medical Science, Molecular detection of DEC and UPEC by mPCR
13. Distribution and comparison of antibiotic resistance Pathogenicity Islands among UPEC and DEC
14. Iran University of Medical Science, Isolation and cloning of HIV CRF035 protease gene into the Pet102/D.TOPO vector in *E.coli* BL21
15. Iran University of Medical Science, Evaluation of trastuzumab-resistance in Breast Cancer Patients and role of mutation and overexpression of biomarkers
16. Iran University of Medical Science, mRNA and Protein Expression of Breast Cancer's Classifier Biomarkers and their Relationship with Clinicopathological Status and Treatment Outcome in Iran
17. Iran University of Medical Science, mir-200 family and ABCC1 expression analysis in drug resistant of Breast Cancer Cell Lines
18. Iran University of Medical Science, mir-200 family and ABCC1 expression analysis in drug resistance of Breast Cancer
19. Iran University of Medical Science, Isolation and cloning of HIV CRF035

protease gene and its expression in pCDNA3.1 expression vector in HEK293 cell line for use as protease inhibitor screening model

- 20.** Iran University of Medical Science, Mir-141 , EGFR, E2F3 and MAP2K4 expression analysis in MCF7 Breast Cancer Cell Line
- 21.** Iran University of Medical Science, Determining genetic alterations in CID (Combined Immuno Deficiency) patients utilizing whole exome sequencing technique
- 22.** Iran University of Medical Science, Study of genetic variation in patients with primary immunodeficiencies by means of whole exome sequencing
- 23.** Iran University of Medical Science, Determining transcriptome genetic alterations in triple negative breast cancer patients sensitive and resistant to chemotherapy utilizing RNA- sequencing technique
- 24.** Iran University of Medical Science, Study on correlation of Mir-429 expression with MAP2K4, ABCC1 and E2F3 gene expression of Breast Cancer Cell Line
- 25.** Iran University of Medical Science, Use and optimization of COLD-PCR technique and downstream methods to identify Tyrosine kinase T790M resistant variant and EGFR gene mutations in fluid biopsy of lung cancer patients
- 26.** Iran University of Medical Science, Study on interaction between Mir-141 and expression of TP53, E2F3, CDK3 and KAT2B in Triple Negative Breast Cancer (TNBC)
- 27.** Iran University of Medical Science, Development of Loop-Mediated Isothermal Amplification kit for detection of Cytomegalovirus in plasma samples of infected patients
- 28.** Iran University of Medical Science, Evaluation of antibacterial effect of liposomal nano system containing active carvacrol on diabetic foot ulcer infection bacteria
- 29.** Iran University of Medical Science, Evaluation of miR-141 interaction with CDK 46-USP51 signaling pathway genes and their expression changes after Ribociclib

treatment of MCF-7, MDA-MB-231 and MDA-MB-468 cell lines

- 30.** Iran University of Medical Science, Evaluation of CDKN2, CCNE1, E2F3, MDM2 and Mir-141 expression and cell proliferation in MCF7, MDA-MB-231 and MDA-MB-134 cell lines treated with Palbociclib
- 31.** Iran University of Medical Science, Investigation and identification of variable locus of successive generations COVID19 virus in Iranian samples and their role in the severity of pathogenesis and response to treatment
- 32.** Iran University of Medical Science, Sequencing and genome analysis of new strains of Coronavirus (COVID-19) in Iraninians patients and its annotation and identification of potential differences in different patients and other COVID-19 reported sequences in the world
- 33.** Iran University of Medical Science, Evaluation of mir-429 expression and targeted genes in the CDK pathway using MCF7 and MCF10A after cell cycle inhibition of Breast Cancer by palbociclib
- 34.** Iran University of Medical Science, Evaluation of the role of lnc MALAT1 in the expression of Mir141 and its target genes in CDK4 6 signaling pathway by combining enzalutamide and Ribociclib in MCF7 MDAMB468 and MDAMB231 cell lines
- 35.** Iran University of Medical Science, Invstigation of the roles of miR-802 and gene targets in the CDK4 signaling pathways in effectively inhebtion of animal model methastatic invasive breast cancer through computational methods and experimental validation
- 36.** Iran University of Medical Science, Setting up and validation of a qPCR method for quantitative detection of CMV
- 37.** Iran University of Medical Science, Investigating the role of sulforaphane in the expression of the miR200 family and its effects on EMTrelated processes and metastasis And evaluating the function of its combined treatment with common

anticancer drugs in Breast cancer cell lines

- 38.** Iran University of Medical Science, FCGR2A and FCGR3A mutations detection kit for Colorectal cancer
- 39.** Iran University of Medical Science, Produce RAS mutations detection kit for Colorectal cancer
- 40.** Iran University of Medical Science, The role of miRNA-429 in invasion and BMI1 ,Oct4 SOX4 gene expression in breast cancer
- 41.** Iran University of Medical Science, Construction of nanovaccine harboring polyepitope DNA expressing high-risk HPVs L1-E7 fusion based on Dot11 CPP, and evaluation of immunological responses and its antitumor effects in C57BL/6 mouse model
- 42.** Predicting the survival of Hub Genes in different stages of Breast Cancer patients based on Co-expression Network Analysis
- 43.** Bioinformatics and laboratory study of gene changes effective in delaying speech and language development in 2-5 years old children
- 44.** Evaluation of the effect of mutations observed in Spyke protein of SARS-COV-2 virus on the affinity and protein structure
- 45.** Identification of long non-coding RNAs associated with breast cancer by bioinformatics methods and evaluation of their expression changes in breast cancer patients
- 46.** The bioinformatic identification of miR-429 target genes in breast cancer cells and evaluation of their expression relationship with miR-429