

## Curriculum Vitae



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Research Assistant Professor of Biotechnology

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**Date of Birth:** Jan.8.1978

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### **Qualification and Awards:**

1. 1996- 1999 B.Sc. in Biology (Major: Microbiology), (Awarded higher top grade student). 2000-2003 M.Sc. in Biology (Major: Microbiology), (Awarded higher top grade student).
2. The top researcher of JIHAD-E-KESHAVARZI in Fars province in 2005.
3. 2011-2016 PhD. in Medical biotechnology, Mashhad University of Medical Sciences (MUMS), Mashhad, Iran (Awarded higher top grade and the best scientific student).
4. The top researcher of Mashhad University of Medical Sciences (MUMS) in the research festival, 2017.
5. The top researcher of MUMS. in the research festival, 2016.
6. The top researcher of Vice Chancellery for food and drug, Isfahan University of Medical Sciences (MUI). 2011.
7. The top researcher of Vice Chancellery for food and drug, MUI. 2007.

## **Experiences:**

1. 2003-2005 Employee of Agricultural Research Center in Fars Province- Zarghan as a researcher. Participating in farms training /Giving assistance in the accomplishment of the research project of Take-all, preparing collection of plant pathogenic fungi, helping diagnosis of plant disease in agricultural farms in Fars region, giving assistance for doing research projects in process, screening antagonist factors of Take-all and soft rot bacteria in Fars region.
2. 2006- 2011 Employee of Microbiology Department, Vice Chancellery for food and drug in Isfahan as a supervisor/doing required tests on food ,cosmetics & sanitarries, doing study and research to increase information in regard to microbial tests of food ,cosmetics and sanitarries, doing technical and hygienic inspection from all production ,supply , storage and distribution centers of foodstuff, cosmetics and sanitarries and also doing the required legal and hygienic actions, presenting research projects in executive system, participating in the committees of national standards of Iran, being a member of research committee, being a member of suggestion council, having supervision on tests done by the experts of the department, participating in national projects such as PMS (Post marketing surveillance).
3. 2018-2019 Research Assistant professor of medical biotechnology, in Isfahan Cardiovascular Research Center, Cardiovascular Research Institute, Isfahan University of Medical Sciences as a supervisor and researcher in Biomedical Sciences Department.
4. Since 2019 Research Assistant professor of medical biotechnology in Research Institute for Primordial Prevention of Non-Communicable Disease Isfahan University of Medical Sciences.

## **Research Project:**

1. PhD thesis; Inhibition of microRNA-21 (miR-21) with locked nucleic acid technology (LNA) and evaluation of its inhibitory effects on proliferation of human colon adenocarcinoma cells. 2013- 2016.
2. Statistical study of the contamination of traditional and industrial ice creams with *E. coli* and optimization of *E. coli* identification methods in Isfahan. Iran. 2007- 2010.
3. Identification of subclinical mastitis-causing bacteria in industrial farms of Isfahan province by multiplex PCR method. 2009- 2011.
4. Preliminary study of the contamination of pasteurized milk with *E. coli* in Isfahan. 2010- 2011.
5. Supervisors, Investigation of protein profile of *E. coli* isolates obtained from traditional ice cream in Isfahan. Iran. 2011- 2014. M.Sc.- Food Industry.
6. Therapeutic effect of liposome containing antagomir 21 on melanoma cell metastasis in c57bl6 mice with effect on angiogenesis and stemness. 2014- 2020.
7. Production of matrigel from acellular rat intestinal tissue to be used in regenerative medicine and biological structure culture. 2022-.
8. Designing and Implementation of Software of “Quality Control Analysis of Milk and Dairy Products 2022-.

9. The role of non-coding RNA (ncRNA)s as a competitive endogenous RNA-network in diabetic condition; a systematic review and bioinformatic analysis,2022-.
10. Key transcription factors in pancreatic  $\beta$  cell differentiation and regulatory factors, and their role in the development of stem cell-derived insulin-producing cells: A review study, 2022-.
11. Investigation impact of LGR5 expression on clinicopathological characteristics and prognosis in cancer patients: A systematic review and meta-analysis, 2022-.
12. Impacts of type 2 diabetes drug family, dipeptidyl-peptidase 4 inhibitors, on common female malignancies: a systematic review, 2022-.
13. Investigation of prognosis and clinicopathological implications of APOBEC3B expression in breast and other cancers: A Systematic Review and Meta-Analysis, 2022-.
14. Evaluation status of integrin subunit alpha 4 promoter DNA hypermethylation in CRC and other malignant tumors: A Systematic Review and meta-analysis, 2022-.
15. Evaluation of targeted delivery of specific antisense oligonucleotides (ASOs) via engineered exosomes to combat COVID-19 disease and cytokine storm using human experimental 3D airway culture, 2022-.
16. Evaluation of the possibility of insulin-producing tissue by expressing Pax6-NeuroD1 gene constructs and inhibition of FOXO1 protein in rat intestinal organoid and evaluation of its therapeutic potential in rats with type 1 diabetes, 2022-.
17. Introduction and evaluation of new sodium-glucose co-transporter 2 inhibitors as type 2 anti-diabetes drug through in silico evaluations then evaluate the effects of in vivo on glycemic control, 2022-.
18. Inhibition of microRNA-21 with locked nucleic acid technology on expression of PDCD4 protein and its role in T-cell lymphocyte apoptosis in MS disease, 2021-.
19. Advisers; Optimization of lactic cheese production using salimix salt and oral lactic acid. 2015- 2017. M.Sc. Food Industry.
20. Advisers; Investigation of physicochemical and microbial properties of low fat yogurt enriched with wheat fiber. 2015- 2017. M.Sc.- Food Industry.
21. Advisers; Study of the effect of licorice essential oil in the form of frozen cover and modified atmospheric packaging on physicochemical and microbial properties of frozen shrimp. 2016-2018. M.Sc.- Food Industry.
22. Advisers; Study of the effect of Hollyhocks essential oil in the form of frozen cover and modified atmospheric packaging on physicochemical and microbial properties of shrimp. 2016- 2018. M.Sc.- Food Industry.
23. Supervisors, Inhibition of miR-21 in T lymphocytes and its effect on the expression of c-myc protein and its role of T cells apoptosis in MS disease. 2017- 2020. Ph.D.- Immunology. Mostafa Manian.
24. Inhibitory effects of MicroRNA-21 (miR-21) using Locked Nucleic Acid Technology (LNA) on *PDCD4* protein expression and its role in T lymphocyte apoptosis in MS. Since 2019.

## Papers

- (1) Fassihiani A, Nedaeinia R. Characterization of Iranian *Pectobacterium carotovorum* strains from sugar beet by phenotypic tests and whole-cell proteins profile. *J Phytopathol* 2008;156(5):281-286.

- (2) Jazayeri MH, Sadri M, Mostafaie A, Nedaeinia R. Identification of an Immunoglobulin M (IgM) Antibody Against Enolase 1 Protein (ENO1) Derived from HEK-293 Cells in Patients with Kidney Failure. *Int J Pept Res Ther* 2020;26(3):1251-1257.
- (3) Jafarpour S, Yazdi M, Nedaeinia R, Ghobakhloo S, Salehi R. Unfavorable prognosis and clinical consequences of APOBEC3B expression in breast and other cancers: A systematic review and meta-analysis. *Tumor Biol* 2022;44(1):153-169.
- (4) Hadi Jazayeri M, barzaman K, Nedaeinia R, Aghaie T, Motallebnezhad M. Correction to: Human placental extract attenuates neurological symptoms in the experimental autoimmune encephalomyelitis model of multiple sclerosis-a putative approach in MS disease? (Autoimmunity Highlights, (2020), 11, 1, (14), 10.1186/s13317-020-00137-x). *Immunol Res* 2022.
- (5) Jazayeri MH, Barzaman K, Nedaeinia R, Aghaie T, Motallebnezhad M. Human placental extract attenuates neurological symptoms in the experimental autoimmune encephalomyelitis model of multiple sclerosis-A putative approach in MS disease? *Autoimmun Highlights* 2020;11(1).
- (6) Jazayeri MH, Aghaie T, Nedaeinia R, Manian M, Nickho H. Rapid noninvasive detection of bladder cancer using survivin antibody-conjugated gold nanoparticles (GNPs) based on localized surface plasmon resonance (LSPR). *Cancer Immunol Immunother* 2020;69(9):1833-1840.
- (7) Nourmohammadi E, Khoshdel-sarkarizi H, Nedaeinia R, Darroudi M, Kazemi Oskuee R. Cerium oxide nanoparticles: A promising tool for the treatment of fibrosarcoma in-vivo. *Mater Sci Eng C* 2020;109.
- (8) Nedaeinia R, Avan A, Manian M, Salehi R, Ghayour-Mobarhan M. EGFR as a potential target for the treatment of pancreatic cancer: Dilemma and controversies. *Curr Drug Targets* 2014;15(14):1293-1301.
- (9) Khani L, Jazayeri MH, Nedaeinia R, Bozorgmehr M, Nabavi SM, Ferns GA. The frequencies of peripheral blood CD5+CD19+ B cells, CD3-CD16+CD56+ NK, and CD3+CD56+ NKT cells and serum interleukin-10 in patients with multiple sclerosis and neuromyelitis optica spectrum disorder. *Allergy Asthma Clin Immunol* 2022;18(1).
- (10) Keshvari M, Nedaeinia R, Nedaeinia M, Ferns GA, Nia SN, Asgary S. Assessment of heavy metal contamination in herbal medicinal products consumed in the Iranian market. *Environ Sci Pollut Res* 2021;28(25):33208-33218.
- (11) Roudafshani Z, Jazayeri MH, Mahmoudi A-, Nedaeinia R, Safari E, Jazayeri A. Evaluation of the frequency of CD5+ B cells as natural immunoglobulin M producers and circulating soluble CD5 in patients with bladder cancer. *Mol Biol Rep* 2019;46(6):6405-6411.
- (12) Gharahkhani R, Pourhadi M, Mirdamadi NS, Dana N, Rafiee L, Nedaeinia R, et al. Effect of Anti-Podoplanin on Malignant Glioma Cell Viability, Invasion and Tumor Cell-Induced Platelet Aggregation. *Arch Med Res* 2022;53(5):461-468.

- (13) Jafarpour S, Saberi F, Yazdi M, Nedaeinia R, Amini G, Ferns GA, et al. Association between colorectal cancer and the degree of ITGA4 promoter methylation in peripheral blood mononuclear cells. *Gene Rep* 2022;27.
- (14) Javanmard SH, Vaseghi G, Ghasemi A, Rafiee L, Ferns GA, Esfahani HN, et al. Therapeutic inhibition of microRNA-21 (miR-21) using locked-nucleic acid (LNA)-anti-miR and its effects on the biological behaviors of melanoma cancer cells in preclinical studies. *Cancer Cell Int* 2020;20(1).
- (15) Faraji H, Soltani F, Ramezani M, Sadeghnia HR, Nedaeinia R, Moghimi Benhangi H, et al. Designing a multifunctional staphylokinase variant (SAK-2RGD-TTI) with appropriate thrombolytic activity in vitro. *Biotechnol Lett* 2020;42(1):103-114.
- (16) Nourmohammadi E, Khoshdel-sarkarizi H, Nedaeinia R, Sadeghnia HR, Hasanzadeh L, Darroudi M, et al. Evaluation of anticancer effects of cerium oxide nanoparticles on mouse fibrosarcoma cell line. *J Cell Physiol* 2019;234(4):4987-4996.
- (17) Nedaeinia R, Sharifi M, Avan A, Kazemi M, Rafiee L, Ghayour-Mobarhan M, et al. Locked nucleic acid anti-MIR-21 inhibits cell growth and invasive behaviors of a colorectal adenocarcinoma cell line: LNA-anti-MIR as a novel approach. *Cancer Gene Ther* 2016;23(8):246-253.
- (18) Vatandoost N, Ghanbari J, Mojaver M, Avan A, Ghayour-Mobarhan M, Nedaeinia R, et al. Early detection of colorectal cancer: from conventional methods to novel biomarkers. *J Cancer Res Clin Oncol* 2016;142(2):341-351.
- (19) Moslemi M, Vafaei M, Khani P, Soheili M, Nedaeinia R, Manian M, et al. The prevalence of ataxia telangiectasia mutated (ATM) variants in patients with breast cancer patients: a systematic review and meta-analysis. *Cancer Cell Int* 2021; 21(1).
- (20) Manian M, Sohrabi E, Eskandari N, Assarehzadegan M-, Ferns GA, Nourbakhsh M, et al. An integrated bioinformatics analysis of the potential regulatory effects of mir-21 on t-cell related target genes in multiple sclerosis. *Avicenna J Med Biotechnol* 2021;13(3):149-165.
- (21) Faraji H, Nedaeinia R, Nourmohammadi E, Malaekheh-Nikouei B, Sadeghnia HR, Ziapour SP, et al. A review on application of novel solid nanostructures in drug delivery. *J Nano Res* 2018;53:22-36.
- (22) Nedaeinia R, Sharifi M, Avan A, Kazemi M, Nabinejad A, Ferns GA, et al. Inhibition of microRNA-21 via locked nucleic acid-anti-miR suppressed metastatic features of colorectal cancer cells through modulation of programmed cell death 4. *Tumor Biol* 2017;39(3).
- (23) Changizi-Ashtiyani S, Seddigh A, Najafi H, Hossaini N, Avan A, Akbary A, et al. *Pimpinella anisum* L. ethanolic extract ameliorates the gentamicin- induced nephrotoxicity in rats. *Nephrology* 2017;22(2):133-138.
- (24) Alizadehmohajer N, Shojaeifar S, Nedaeinia R, Esparvarinha M, Mohammadi F, Ferns GA, et al. Association between the microbiota and women's cancers – Cause or consequences? *Biomed Pharmacother* 2020;127.

- (25) Hosseini M, Khatamianfar S, Hassanian SM, Nedaeinia R, Shafiee M, Maftouh M, et al. Exosome-encapsulated microRNAs as potential circulating biomarkers in colon cancer. *Curr Pharm Des* 2017;23(11):1705-1709.
- (26) Ranjbar M, Salehi R, Javanmard SH, Rafiee L, Faraji H, Jafarpour S, et al. Correction: The dysbiosis signature of *Fusobacterium nucleatum* in colorectal cancer-cause or consequences? A systematic review (*Cancer Cell International*, (2021), 21, 1, (194), 10.1186/s12935-021-01886-z). *Cancer Cell Int* 2022;22(1).
- (27) Alizadehmohajer N, Zahedifar S, Sohrabi E, Shaddel Basir S, Nourigheimasi S, Falak R, et al. Using In Silico Bioinformatics Algorithms for the Accurate Prediction of the Impact of Spike Protein Mutations on the Pathogenicity, Stability, and Functionality of the SARS-CoV-2 Virus and Analysis of Potential Therapeutic Targets. *Biochem Genet* 2022.
- (28) Ranjbar M, Salehi R, Haghjooy Javanmard S, Rafiee L, Faraji H, jafarpor S, et al. The dysbiosis signature of *Fusobacterium nucleatum* in colorectal cancer-cause or consequences? A systematic review. *Cancer Cell Int* 2021;21(1).
- (29) Nedaeinia R, Faraji H, Javanmard SH, Ferns GA, Ghayour-Mobarhan M, Goli M, et al. Bacterial staphylokinase as a promising third-generation drug in the treatment for vascular occlusion. *Mol Biol Rep* 2020;47(1):819-841.
- (30) Piroozmand A, Zadeh SMM, Madani A, Soleimani R, Nedaeinia R, Niakan M, et al. The association of high risk human papillomaviruses in patients with cervical cancer: An evidence based study on patients with squamous cell dysplasia or carcinoma for evaluation of 23 human papilloma virus genotypes. *Jundishapur J Microbiol* 2016;9(4).
- (31) Nedaeinia R, Manian M, Jazayeri MH, Ranjbar M, Salehi R, Sharifi M, et al. Circulating exosomes and exosomal microRNAs as biomarkers in gastrointestinal cancer. *Cancer Gene Ther* 2017;24(2):48-56.
- (32) Alizadehmohajer N, Behmardi A, Najafgholian S, Moradi S, Mohammadi F, Nedaeinia R, et al. Screening of potential inhibitors of COVID-19 with repurposing approach via molecular docking. *Netw Model Anal Health Informatics Bioinformatics* 2022; 11(1).
- (33) Emami Nejad A, Najafgholian S, Rostami A, Sistani A, Shojaeifar S, Esparvarinha M, et al. The role of hypoxia in the tumor microenvironment and development of cancer stem cell: a novel approach to developing treatment. *Cancer Cell Int* 2021; 21(1).
- (34) Nourmohammadi E, Hosseinkhani S, Nedaeinia R, Khoshdel-Sarkarizi H, Nedaeinia M, Ranjbar M, et al. Construction of a sensitive and specific lead biosensor using a genetically engineered bacterial system with a luciferase gene reporter controlled by pbr and cadA promoters. *Biomed Eng Online* 2020; 19(1).
- (35) Nedaeinia R, Avan A, Ahmadian M, Nia SN, Ranjbar M, Sharifi M, et al. Current Status and Perspectives Regarding LNA-Anti-miR Oligonucleotides and microRNA miR-21 Inhibitors as a Potential Therapeutic Option in Treatment of Colorectal Cancer. *J Cell Biochem* 2017; 118(12):4129-4140.

(36) Mirhafez SR, Tajfard M, Avan A, Pasdar A, Nedaeinia R, Aghasizade M, et al. Association between serum cytokine concentrations and the presence of hypertriglyceridemia. Clin Biochem 2016; 49(10-11):750-755.

(37) K DORRY, R NEDAEINIA, V HEMAYATKHAH JAHROMIE, M NADERIAN, The Effects of Anabolic-Androgenic Steroid Drugs Consumption on Blood Factors in Bodybuilder's Athletes in Jahrom, Iran. Medical Laboratory Journal 4 (1). 2014.

(38) GOLI, H EZZATPANAHI, M GHAVAMI, M CHAMANI, R NEDAEINIA, Multiplex-Polymerase Chain Reaction as a Mastitis Screening Test for Major Pathogens in Dairy Cattle Farms at Different Size Scales and in Several Parities. M. JOURNAL OF RESEARCH IN AGRICULTURAL SCIENCE 8 (114), 23-33. 2012.

## PRESENTATIONS

1- R.Nedaeinia<sup>1</sup> and A.Fassihiani<sup>2</sup>. Reaction of sugar beet cultivars to *Erwinia carotovora subsp. Betavascularum* the causal agent vascular necrosis and rot of sugar beet, 16th Iranian Plant Protection Congress, 23 Aug-1. Sept. 2004 (Tabriz-Iran).

2- R.Nedaeinia<sup>1</sup> and A.Fassihiani<sup>2</sup>. Study on the strains of bacterial vascular necrosis and sugar beet soft rot in Fars province. 16th Iranian Plant Protection Congress, 23 Aug-1 Sept. 2004 (Tabriz-Iran).

3- A.Fassihiani<sup>1</sup> and R.Nedaeinia<sup>2</sup>. Host range of *Erwinia carotovora subsp. betavascularum* the causal agent bacterial vascular necrosis and soft rot of sugar beet, 16th Iranian Plant Protection Congress, 23 Aug-1 Sept. 2004 (Tabriz-Iran).

4- R.Nedaeinia<sup>1</sup> and A.Fassihiani<sup>2</sup>. Etiology of Sugar Beet Soft Rot in Fars province, the 1st National Iranian Conference of Applied Microbiology, Alzahra University- July 2007 (Tabriz-Iran).

5- S.Javadi\_ R.Nedaeinia \_M.Hejazi \_M.Zahedi. Qualitative evaluation of hamburgers for supply in Isfahan in 2002, the 1st Congress of Food Safety and 52nd Congress of Medical News dated on 16 Oct. 2007 (Isfahan-Iran).

6- R.Nedaeinia<sup>1</sup> and A.Fassihiani<sup>2</sup>. Evaluation of physiological and biochemical diversity among *Pectobacterium*s, the causal agent for vascular necrosis of sugar beet in Fars province, the 1st Congress of Food Safety and 52nd Congress of Medical News dated on 16 Oct. 2007 (Isfahan-Iran).

8- S.Javadi\_ R.Nedaeinia \_M.Hejazi, Application of nanobiotechnology in food Industry, Islamic Azad University- jooybar branch. May 8, 2008 (Jooybar-Iran).

## Membership of Society

1. Iranian Biology Society
2. Iranian Society of Microbiology

## English Chapter book:

Nedaeinia, R. *et al.* (2022). Lifestyle Genomic interactions in Health and Disease. In: Kelishadi, R. (eds) Healthy Lifestyle. Integrated Science, vol 3. Springer, Cham. [https://doi.org/10.1007/978-3-030-85357-0\\_3](https://doi.org/10.1007/978-3-030-85357-0_3).

## STATEMENT OF RESEARCH

My interests are: detection and identification of a disease with unknown etiology, the use of antisense oligonucleotides (ASO) to modulate gene expression with target degradation by RNase H-mediated cleavage, splicing modulation, non-coding RNA inhibition, gene activation, and programmed gene editing. Also, ASOs can be used as the therapeutic potential of cancer and cancer resistance to

treatment. The use of ASO also targets microbial agents such as viruses. In addition, I have previously performed studies about Gapmer technology such as Locked nucleic acid (LNA) anti-miR-21 for inhibiting cell growth and invasive behaviors of a colorectal adenocarcinoma cell line. We have designed chicken embryo modeling to inhibition of cancer cell metastasis to the lung epithelium and their diagnosis by ALU-q PCR using the  $2^{-\Delta\Delta CT}$  method.