

Curriculum Vitae



Name: Reza,

Family Name: Zolfaghari Emameh,

Affiliation: Dept. of Energy and Environmental Biotechnology, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, IRAN

Position: Assistant Professor (13.08.2017-Present),

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Educations:

- **Ph.D. of medical biotechnology**, BioMediTech, University of Tampere, FINLAND (December 2016).

Title of Ph.D. thesis: β -carbonic anhydrases: novel targets for diagnosis and treatment of parasitic infections.

Supervisor: Prof. Seppo Parkkila, Seppo.Parkkila@staff.uta.fi, www.tissuebiology.com

- **M.Sc. of virology**, Tarbiat Modares University (TMU), Tehran, Iran, 2001.

Title of M.Sc. Thesis: Evaluation of transfection efficiency by dendrosome nano particles method in umbilical vein endothelial cell (HUVEC) and human hepatoma-7 (Huh-7) and its comparison with calcium phosphate method.

- Supervisor: Dr. Majid Sadeghizadeh (Genetic group, Tarbiat Modarres University).

- **B.Sc. of microbiology**, Imam Hossein University, Tehran, Iran, 1998.

Research Interests:

Study on the different carbonic anhydrase (CA) families (α , β , γ , δ , ζ , η , and θ) from different origins including prokaryotes and eukaryotes including:

- The CAs from various pathogens including bacteria, parasites, and fungi can be the potential targets for natural and synthetic inhibitors as the new generation of antibiotics for treatment of bacterial infections. In our studies, we produce the recombinant bacterial CAs to affect the new compounds as the inhibitors on them.
- The CAs from various vectors, insects, and pests are the potential targets for inhibitors and pesticides. Therefore, the control of invasive pests and medically-important vector through inhibition of CAs can be a novel strategy in this field.
- The human CAs can be the potential markers for many diseases such as cancer. Therefore, the identification of overexpression for human CAs can prepare useful information about the stage of cancer in human.
- The CAs have a major role in the photosynthesis of plants, algae, phytoplankton, and cyanobacteria. On the other hand, photosynthesis and the final products of biochemical pathways in the photosynthetic organisms are led to production of fatty acids, which are applicable as biofuel. Therefore, the CA studies are important in the green and renewable energy studies as well.

Occupations:

- Assistant Professor, NIGEB, Tehran, Iran, Since Aug 2017
- Ph.D., University of Tampere, Tampere, Finland, 2012-2016
- Head of Semi-Purification in recombinant HBsAg production plant, Pasteur Institute of Iran (PII), 2004-2012
- Lab technician, Dr. Taghavi Medical Diagnostic Lab, Microbiology and Immunology Section, Tehran, Iran, 2001-2004

Experiences:

- Six months training, in downstream processes (semi-purification) for production of recombinant Hepatitis B vaccine in the Center of Genetic Engineering and Biotechnology (CIGB), Havana, CUBA, from Dec 2004 to June 2005 (Also, experience in upstream processes such as fermentation).
- GMP courses in production of biopharmaceuticals in Center of Genetic Engineering and Biotechnology (CIGB), Havana, CUBA, 2005.
- Validation courses, World Health Organization (WHO) office, Tehran, Iran, 2007.
- Familiar to some assays and techniques such as:
Cell culture, Bacterial culture, Electrophoresis, Blotting, DNA extraction, Transfection with calcium phosphate and Dendrosome or Lipofectin, Bacterial transformation, Gene cloning, Recombinant protein expression and purification, ELISA (Enzyme Linked Immunosorbent Assay), Microbiological assays, Fermentation, Cell Disruption, Harvesting and Separation with precipitation and Centrifugation, Filtration, Ultrafiltration, Chromatography, Bioinformatics, Genomics, and Big data analysis.
- Strain development study on *Bacillus* spp. to produce alkaline serine protease. This study has performed through application of bioinformatics, system biology, and experimental methods (2017-Present).

- Strain development study on non-bacterial probiotics such as yeast species to treat diarrhea or reduce the treatment period of intestinal infections. This study is included the fermentation, harvesting, drying, and formulation of final product (2017-Present).
- Study on the potentials of cyanobacterial species in the production of biofuel with focusing on the carbon uptake and carboxysomal carbonic anhydrase (2017-Present).

Teaching:

- "Environmental Biotechnology" to M.Sc. students of biotechnology (Since Aug 2017).
- "Bioinformatics" to M.Sc. students of biotechnology (Since Aug 2017).
- "Seminar" to M.Sc. students of biotechnology (Since Aug 2017).

Awards:

- Two 3-years grants were awarded by Ministry of Science, Research, and Technology (MSRT) of IRAN for two collaborative projects with South African Universities starting from 01.01.2018
- Awarded by Minister of Health and Medical Education of IRAN for active role in production of recombinant biopharmaceuticals.
- The top graduated student in M.Sc. degree with average grade of 18.72/20.00
- 2nd position in biotechnology prize, "***Application of dendrosomes in gene therapy***", Tarbiat Modares University (TMU), 2001.

List of Publications:

- 1- **Zolfaghari Emameh R**, Barker HR, Hytönen VP, Parkkila S. Involvement of β -carbonic anhydrase (β -CA) genes in bacterial genomic islands and horizontal transfer to protists. *Appl Environ Microbiol*. 2018 May 25, doi: 10.1128/AEM.00771-18.
- 2- Faraji F, Karjoo Z, Vakili Moghaddam M, Heidari S, **Emameh RZ**, Falak R. Challenges Related to the Immunogenicity of Parenteral Recombinant Proteins: Underlying Mechanisms and New Approaches to Overcome It. *Int Rev Immunol*. 2018 May 31, doi: 10.1080/08830185.2018.1471139.
- 3- Soheilifara MH, Taheri RA, **Zolfaghari Emameh R**, Moshtaghian A, Kooshki H, Motie MR. Molecular Landscape in Alveolar Soft Part Sarcoma: Implications for Molecular Targeted Therapy. *Biomed Pharmacother*. 2018 Apr: 889-896.
- 4- Fakhar M, Soosaraei M, Khasseh AA, **Zolfaghari Emameh R**, Hezarjaribi HZ. A bibliometric analysis of global research on toxoplasmosis in the Web of Science. *Vet World*. 2018 Oct 11(10): 1409-1415.
- 5- Mohammadi M, Falak R, **Zolfaghari Emameh R**, June SM, Kardar GA. Computational Analysis of Specific IgE epitopes Responsible for Allergy to Fish. *Curr Immunol Rev*. 2018, 14: 130 – 136. doi : 10.2174/1573395514666180622121750.
- 6- **Zolfaghari Emameh R**, Purmonen S, Sukura A, Parkkila S. Surveillance and diagnosis of zoonotic foodborne parasites. *Food Sci Nutr*. 2017;00:1–15.
- 7- **Zolfaghari Emameh R**, Barker HR, Syrjänen L, Urbański L, Supuran CT, Parkkila S. Identification and inhibition of carbonic anhydrases from nematodes. *J Enzyme Inhib Med Chem*. 2016 Aug 25:1-9.
- 8- **Zolfaghari Emameh R**, Barker H, Tolvanen ME, Parkkila S, Hytönen P Vesa. Horizontal gene transfer of beta carbonic anhydrase gene sequences from prokaryotes to protozoan and metazoan eukaryotes. *Parasit Vectors*. 2016 Mar 16;9(1):152.
- 9- **Zolfaghari Emameh R**, Kuuslahti M, Näreaho A, Sukura A, Parkkila S. Innovative molecular diagnosis of *Trichinella* species based on β -carbonic anhydrase genomic sequence. *Microb Biotechnol*. 2016 Mar;9(2):172-9.

- 10- **Zolfaghari Emameh R**, Kuuslahti M, Vullo D, Barker HR, Supuran CT, Parkkila S. *Ascaris lumbricoides* β carbonic anhydrase: a potential target enzyme for treatment of ascariasis. *Parasit Vectors*. 2015 Sep 18;8:479.
- 11- **Zolfaghari Emameh R**, Syrjänen L, Barker H, Supuran CT, Parkkila S. *Drosophila melanogaster*: a model organism for controlling Dipteran vectors and pests. *J Enzyme Inhib Med Chem*. 2015 Jun;30(3):505-13.
- 12- **Zolfaghari Emameh R**, Barker H, Hytönen VP, Tolvanen ME, Parkkila S. Beta carbonic anhydrases: novel targets for pesticides and anti-parasitic agents in agriculture and livestock husbandry. *Parasit Vectors*. 2014 Aug 29;7(1):403.
- 13- **Zolfaghari Emameh R**, Barker H, Tolvanen ME, Ortutay C, Parkkila S. Bioinformatic analysis of beta carbonic anhydrase sequences from protozoans and metazoans. *Parasit Vectors*. 2014 Jan 21;7:38.