

# Samira Elikaeae, PhD

## Postdoctoral fellow

Researcher and lecturer with 10+ years of experience in molecular biology, immunology, vaccine, infectious diseases, and drug discovery at prestigious research institutions. The bulk of my research expertise lies in vaccine development and drug discovery by following molecular manipulations using molecular cloning, CRISPR/Cas9 system, and other studies such as antibody and cytokine-based assays, eukaryotic and prokaryotic cell line techniques, flow cytometry, fluorescent microscopy, assay development like (PCR, qPCR, Western blot, ELISA), and immunogenicity and drug evaluations on small animals. Eager to provide teaching and cutting-edge research with sound quantitative methods while ensuring high ethical standards and commitment.

## Work History

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| <b>2023-1-<br/>Now</b>       | <b>Postdoctoral Fellow</b><br><i>University of California Los Angeles, CA</i>  |
| <b>2022-07 –<br/>2022-12</b> | <b>Affiliate Researcher</b><br><i>Pacific University Oregon School of Pharmacy, OR</i>   |
| <b>2019-12 -<br/>2022-06</b> | <b>Postdoctoral Fellow</b><br><i>Pacific University Oregon School of Pharmacy, OR</i> <ul style="list-style-type: none"><li>• Designed 3 research projects and alternative approaches and discussed results with professor.</li><li>• Contributed to and actively participated in research conception, design and execution to address defined problems.</li><li>• Co-investigator in R15 NIH grant.</li><li>• Published over 6 peer-reviewed articles.</li><li>• Taught 200 PharmD and graduate students on immunology, molecular biology, biochemistry, and research methods.</li><li>• Mentored 2 PharmD students in their research tracks and one of them received the best research prize.</li><li>• Presented and participated in discussions, seminars and lectures at seminar series events.</li></ul> |

## Contact

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### WWW

[scholar.google.com/citations?user=ZcjpVqYAAAAJ&hl=](https://scholar.google.com/citations?user=ZcjpVqYAAAAJ&hl=)

## Skills

- Analytical thinking
- Project Management
- Creative problem solving
- Data analysis
- Attention to detail
- DNA and RNA analysis
- Skilled in genotyping
- Cloning and gene expression
- CRISPR/Cas9 system
- Proficient in PCR

- Collaborated with colleagues to gather research and publish findings.
- Maintained accurate records of research findings and provided statistical analysis of data results.
- Reviewed and analyzed historical and emerging literature to develop and practice new technologies.
- Worked independently and as team member to achieve goals for 2.5 years.
- Graded tests and assignments and uploaded to school database.
- Committee member at curriculum, assessment and diversity committees.

#### **Key Achievement:**

- Research Incentive Grant awarded (2021- Pacific University Oregon).
- Established CRISPR/Cas9 system in lab to use easy for gene deletion and pharmaceutical approaches.
- Achieved favorable results for drug discovery in 2 conducted projects.
- Biology of Parasitism course graduated- Marine Biological Lab (Competitive unique and advance course on modern approaches to study of parasitic diseases).
- Got score of over 4.3/5 in teaching evaluation.

**2016-11 -  
2019-12**

#### **Researcher**

*Tehran University Of Medical Sciences, Tehran, Iran*

- Designed and performed 4 research projects and alternative approaches with head of lab.
- Streamlined research processes to meet tight deadlines for multiple projects.
- Contributed to prepare research proposals and submit funding applications.
- Published over 10 peer-reviewed articles.
- Collaborated with multidisciplinary research teams to identify relevant questions and determine best methods of collection.
- Trained and advised over 10 PhD and MSc students in their dissertations.
- Coordinated research lab.
- Generated data models and performed analysis to produce reports outlining results.

- Western blot
- Florescence microscopy
- Flow cytometry
- Cell lines culture
- Leadership
- Grant and proposal writing
- Teaching

#### **Software**

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- Primer designing and analyzing tolls and programs: Primer 3, LeishGEdit, BioEdit
- Phylogenetic software: MEGA
- Reference manager software programs such as: Zotero, Endnote, Mendeley
- Statistical software: Prism and SPSS
- Microsoft office

#### **Languages**

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- English and Persian

#### **Additional Information**

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- Residency Status: U.S. Permanent Resident

- Conducted epidemiological studies based on molecular characterization.
- Conducted pharmaceutical approaches of Nano particles in treatment of infectious diseases.
- Delivered personalized educational, behavioral and emotional support to individual students to enable positive research outcomes.
- Contributed in holding over 8 workshops on direct examination, culture, serological and molecular methods for diagnosis of cutaneous Leishmaniasis.
- Executive Committee member at the Second Educational Symposium on "Proteomics and its Position in Medical Science Research" and "New Generation Sequencing, Advanced Bioinformatics Techniques and New Genetic Modification Techniques".
- Presented and participated in over 8 conferences.

**Key Achievement:**

- Established gene knock-out system to use for live attenuated vaccine development.
- Achieved favorable results for live attenuated vaccine development and evaluations in 2 conducted projects which were published in high rank journals.
- Established and maintained tissue culture cell lines in lab.

2009-01 -  
2011-02

**Medical Laboratory Technologist**

*Children's Medical Center, TUMS, Tehran, Iran*

- Utilized expertise in microbiology, chemistry and hematology to help with diagnosis of medical issues.
- Used critical thinking to break down problems, evaluate solutions and make decision.
- Conducted research, gathered information from multiple sources and presented results.
- Taught and trained over 20 MLS students.

2006-03 -  
2006-09

**Research and Development Technologist**

*Pasteur Institute, Tehran, Iran*

- Conducted research on recombinant erythropoietin production.
- Supported senior management with creation and enhancement of continuous improvement of research procedures.

- Coordinated supporting lab for 6 months.
- Kept work areas extremely clean and sanitized properly to avoid errors in research.
- Verified regulatory compliance and protocol adherence through comprehensive inspections.
- Maximized efficiency by meticulously organizing and administering experiments.

## Education

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- 2011-02 - 2016-11**      **Ph.D.: Medical Laboratory Sciences - Medical Parasitology**  
*Tehran University of Medical Sciences - Tehran, Iran*  
 (My degree mostly equivalent to molecular biology-immunology in the US)  
**Key Achievement:**
- Achievement the title of the best graduated (2016-Tehran, Iran).
  - Got 100% score (20/20) in dissertation.
- 2006-09 - 2009-02**      **Master of Science: Medical Laboratory Sciences - Medical Parasitology**  
*Kashan University of Medical Sciences - Kashan, Iran*
- 2003-02 - 2022-02**      **Bachelor of Science: Medical Laboratory Sciences**  
*Tehran University of Sciences - Tehran, Iran*

## Accomplishments

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- Research Intensive Grant Awarded at Pacific University School of Pharmacy, 2021- Oregon, USA
- Achievement the title of the best PhD graduated- Tehran University of Medical Sciences. Medical Parasitology and Mycology Dept., 2016-Tehran, Iran.
- Member Of “Exceptional Talents Development Center” (That consists of the most intelligent and talented students at universities of Iran), 2011-Tehran, Iran.
- Ranked within the top one percent in the Nationwide University Entrance Exam (known as Konkour) for the PhD program in medical laboratory sciences-medical Parasitology, 2010-Tehran, Iran.

- Received full tuition-waiver scholarship from Tehran University of Medical Sciences for PhD, 2010-2016- Tehran, Iran.
- Received full tuition-waiver scholarship from Kashnan University of Medical Sciences M.Sc., 2006-2009- Tehran, Iran.
- Best oral prize- National-Student Conference of nanotechnology, 2009-Tehran, Iran.
- Published more than 25 peer-reviewed articles.
- Presented research discoveries in more than 8 congresses.

## Publication

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- 1- N. S. Carter, Y. Kawasaki, S. S. Nahata, **S. Elikae**, S. Rajab, L. Salam, M. Y. Alabdulal, K. K. Broessel, F. Foroghi, A. Abbas, R. Poormohamadian, S. C. Roberts. Polyamine Metabolism in Leishmania Parasites: A Promising Therapeutic Target. *Medical Sciences*. 2022; 10 (2). doi: 10.3390/medsci10020024
- 2- F. Golshani Asl, M. Moheballi, R. Jafari, A. A. Akhavan, M. R. Shirzadi, Z. Zarei, R. Fadaei, J. Ramezanzpour, Gh. Hassanpour, Sh. Izadi, H. Hajjaran, **S. Elikae**. *Leishmania* spp. infection in Rhombomys opimus and Meriones libycus as main reservoirs of zoonotic cutaneous leishmaniasis in central parts of Iran: Progress and implications in health policy. *Acta Tropica*. 2021 Dec 7; 226:106267. doi: 10.1016/j.actatropica.2021.106267.
- 3- **S. Elikae**, Z. Zarei, A. Khamesipour, B. Akhoundi, A. R. Borjian, M. J. Abbaszadeh Afshar, Q. K. Allely, S. Heidari, M. Moheballi. Live attenuated *Leishmania major* p27 gene knockout as a novel vaccine candidate: A study on safety, protective immunity and efficacy against canine leishmaniasis caused by *Leishmania infantum*. *Acta Tropica*. 2021 Oct. 9; 225:106153. doi: 10.1016/j.actatropica.2021.106153.
- 4- M. J. Abbaszadeh Afshar, **S. Elikae**, R. Saberi, S. Mohtasebi, M. Moheballi. Expression analysis of centrin gene in promastigote and amastigote forms of *leishmania infantum* iranian isolates: a promising target for live attenuated vaccine development against canine leishmaniasis. *BMC Veterinary Research*. 2021;

14;17(1):162.

5- S. Minaeian, M. Moheballi, **S. Elikae**, B. Akhoundi, B. Salemi, K. Khanaliha. Antileishmanial activity of *Allium hirtifolium* on promastigote and amastigote developmental stages of the parasite, *Leishmania major*. Medicinal Plants-International Journal of Phytomedicines and Related Industries. 2020; 12(1):5-10.

6- Z. Kakooei, H. Hajjaran, B. Akhoundi, S. Charehdar, **S. Elikae**, Z. Shafeghat, H. Hassanpour, M. T. Satvat, E. Kazemi-Rad, M. Moheballi. Treatment Failure in Cutaneous Leishmaniasis Patients Referred to the School of Public Health, Tehran University of Medical Sciences during 2008–2017. Journal of Arthropod-Borne Diseases. 2020; 31;14(4):363-375.

7- A. Heidari, M. Moheballi, M. Vahed, K. Kabir, Z. Zarei, B. Akhoundi, **S. Elikae**, H. Barati, M. Sezavar, H. Keshavarz, Z. Kakooei, H. Hajjaran. Molecular and Seroepidemiological Survey of Visceral Leishmaniasis in Owned Dogs (*Canis familiaris*) in New Foci of Rural Areas of Alborz Province, Central Part of Iran: A Cross-Sectional Study in 2017. Journal of Arthropod-Borne Diseases. 2020; 14(1): 38–46.

8- **S. Elikae**, M. Moheballi, S. Rezaei, H. Eslami, A. Khamesipour, H. Keshavarz, MR. Eshraghian. Vaccination using live attenuated *Leishmania major* p27 gene knockout induces protection in BALB/c mice. Vaccine. 2019; 37(24):3221-3228.

9- S. Mohtasebi, M. Moheballi, **S. Elikae**, B. Akhoundi, A. Rahimi Foroushani, A. Teimouri, H. Yarizadeh. In vitro and in vivo anti-parasitic activity of biogenic antimony sulfide nanoparticles on *Leishmania major* (MRHO/IR/75/ER). Parasitology Research. 2019; 118(9):2669-2678.

10- S. Khalili, M. Moheballi, P. Shayan, S. Mohammadi-Yeganeh, M. Moosazadeh Moghaddam, **S. Elikae**, B. Akhoundi, MK. Sharifi-Yazdi, E. Ebrahimzade. Investigation of the Antimicrobial Activity A Short Cationic Peptide Against Promastigote and Amastigote Forms of *Leishmania major* (MHRO/IR/75/ER): An In Vitro Study. Experimental Parasitology. 2019; 196:48-54.

11- F. Firouzjaie-Karder, B. Akhoundi, M. Moheballi, F. Azmoudeh, A. Rahimi-Foroushani, F. Mesgarian, H. Hajjaran, **S. Elikae**, H. Mortazavi, Y. Shakiba. Study of Tregulatory cells profile among acute and chronic human

cutaneous leishmaniasis: a comparative study using flow cytometry method. *Iranian Journal of Parasitology*. 2019; 14(2): 190-196.

12- M. Mosayebi, M. Moheballi, A. Farazi, MR. Shirzadi, D. Akhlagi, R. Haj Hossein, **S. Elikae**. Genital leishmaniasis caused by *Leishmania major* in glans penis: a rare case from Iran. *Iranian Journal of Parasitology*. 2019; 14(3): 472-476.

13- H. Azizi, H. Mirzaeei, A. Bagheri, A. Khamesipour, H. Yaghoobi, A. Mirzapour, M. Khatami, **S. Elikae**, A. bazi. A survey on the adjuvant role of Naloxone alone or combined with Alum in vaccination against fasciolosis in BALB/c mice. February 2019; *Acta Parasitologica*. DOI: 10.2478/s11686-019-00030-2.

14- **S. Elikae**, M. Moheballi, S. Rezaei, H. Eslami, A. Khamesipour, H. Keshavarz, MR. Eshraghian. Development of a new live attenuated *Leishmania major* p27 gene knockout: Safety and Immunogenicity evaluation in BALB/c mice. *Cellular Immunology*. 2018; 332:24-31.

15- **S. Elikae**, M. Moheballi, H. Eslami, S. Rezaei, HR. Najafian, E. Kazemi-Rad, H. Keshavarz, MR. Eshraghian, H. Hajjaran, MA. Oshaghi and Sara Ayazian mavi. Comparison of p27 gene expression in *Leishmania Major* promastigote and amastigote by real-time RT-PCR. *Iranian Journal of Parasitology*. 2018; 13(2):186-192.

16- S. Jafarpour Azami, A. Teimouri, H. Keshavarz, A. Amani, F. Esmaeili, H. Hasanpour, **S. Elikae**, H. Salehiniya, S. Shojaee. Curcumin nanoemulsion as a novel chemical for the treatment of acute and chronic toxoplasmosis in mice. *International Journal of Nanomedicine*. 2018; 13:7363–7374.

17- S. Khalili, M. Moheballi, E. Ebrahimzadeh, P. Shayan, S. Mohammadi Yeghaneh, M. Moosazadeh Moghaddam, **S. Elikae**, B. Akhoundi, MK. Sharifi-Yazdi. Antimicrobial Activity of an Anti-Microbial peptide Against Amastigote Forms of *Leishmania major*. *Veterinary Research Forum*. 2018; 9(4):323-328.

18- M. Moheballi, K. Arzamani, Z. Zarei, B. Akhoundi, H. Hajjaran, Raeghi S, Z. Heidari, SM. Motavalli-Haghi, **S. Elikae**, A. Mousazadeh-Mojarrad, Z. Kakoei. Canine Visceral Leishmaniasis in Wild Canines (Fox, Jackal, and Wolf) in Northeastern Iran Using Parasitological,

- Serological, and Molecular Methods. Journal of Arthropod-Borne Disease. 2016; 10(4): 538–545.
- 19- HR. Najafian, M. Mohebal, SM. Rezayat, AR. Partoazar, J. Esmaili, **S. Elikae**, K. Hatam Nahavandi, MR. Jaafari, M. Mahmoodi, MR. Shirzadi and H. Mortazavi. Nanoliposomal miltefosine for the treatment of cutaneous leishmaniasis caused by *Leishmania major* (MRHO/IR/75/ER): The drug preparation and *in vitro* study. International Journal of Pharmaceutical Research & Allied Sciences. 2016; 5(3):97-107.
- 20- K. Hatam Nahavandi, AH. Mahvi, M. Mohebal, H. Keshavarz, S. Rezaei, H. Mirjalali, **S. Elikae** and M. Rezaeian. Molecular Typing of *Eimeria ahsata* and *Eimeria crandallis* Isolated From Slaughterhouse Wastewater. Jundishapur Journal of Microbiology. 2016; 23; 9(4):e34140.
- 21- S. Mahmoudi, **S. Elikae**, H. Keshavarz, B. Pourakbari, S. Mamishi. Pediatric Hydatidosis in Iranian Referral Pediatrics Center. Iranian Journal of Parasitology. 2012; 7(2):87-91.
- 22- M. Mohebal, MM. Rezayat, K. Gilani, S. Sarkar, B. Akhouni, J. Esmaeili, T. Satvat, **S. Elikae**, S. Charehdar, H. Hooshyar. Nano silver in the treatment of localized cutaneous leishmaniasis caused by *Leishmania major* (MRHO/IR/75/ER): an *In vitro* and *In vivo* study. DARU Journal of Pharmaceutical Sciences. 2009; 17(4):285-289.
- 23- S. Azarmi, A. R. Zahraei-Ramazani, M. Mohebal, Y. Rassi, A. A. Akhavan, **S. Elikae**, S. Mohtasebi, R. Abdoli, M. Mahmoudi. Study on *Leishmania* spp. infections in reservoirs host (Rodentia: Gerbillidae) and their ectoparasites in a hyperendemic focus of zoonotic cutaneous leishmaniasis in center of Iran. Zoonoses and Public Health. 2022; Submitted.
- 24- **S. Elikae**, M. Seraj. Toxoplasmosis in TORCH. Tashkhis. 2010; No.69. (In Persian).
- 25- V. Raeesi, M. Zibaei, J. Abdi, M J. Abbas Zadeh, **S. Elikae**, A. Amin, Z. Kakouei. Protozoology. First edition. Tehran. The compilation group Dr. Khalili .2017. 436 pages. (BOOK, In Persian)



## Conferences

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1. **S. Elikae**, M. Moheballi, H. Eslami, S. Rezaei, H. Keshavarz, A. Khamesipour. Null mutant preparation of Iranian strain of *Leishmania major* (MRHO/IR/75/ER) p27 gene knockout and evaluation of its safety in *BALB/c* mice. 6th World Congress on Leishmaniasis, 16th-20th May 2017. Toledo, Spain (**Poster**).
2. **S. Elikae**, M. Moheballi, H. Keshavarz, B. Akhondi, S. Mohtasebi, H. Eslami. Evaluation of p27 gene knockout mutant of *Leishmania major* (MRHO/IR/75/ER) with Light and Electron Microscopy. Microscopy Conference, 21-25 August, 2017. Laussane, Switzerland (Poster).
3. S. Mohtasebi, G. Mowlavi, I. Mobedi, H. Abbasian, **S. Elikae**. Light microscopy and scanning electron microscopy studies of the scolex of cestode *Passerilepis parina* (Fuhrmann 1908). Microscopy Conference, 21-25 August, 2017. Laussane, Switzerland (Poster).
4. **S. Elikae**, M. Moheballi, H. Eslami, H. Keshavarz, S. Rezaei, A. Khamesipour. Live Attenuated Iranian strain of *Leishmania major* (MRHO/IR/75/ER) p27 Gene Knockout Parasites Are Nonpathogenic in *BALB/c* Mice. 3rd International & 10th National Congress of Parasitology & Parasitic Diseases of Iran (NICOPA10), 1-3 November, 2017. Shiraz, Iran (Oral).
5. F. Ahmadipour, Y. Rassi, HR. Basseri, AA. Akhavan, H. Abak, F. Golampour, M. Moheballi, B. Akhondi, **S. Elikae**. Agglutinin activity in the gut of *Phelebotomus papatasi*. 1th International Congress on vector-borne diseases and climate changes & 3RD. Iranian national congress on medical entomology, 3-5 December 2017. Tehran, Iran (Poster).
6. S. Khalili, M. Moheballi, E. ebrahimzadeh, P. Shayan, S. Mohammadi Yeghaneh, M. Moosazadeh Moghaddam, **S. Elikae**, B. Akhondi, MK. Sharifi-Yazdi. **Study of anti-leishmanial effect of CM11 on promastigote form of *Leishmania major***. 9th International Congress of Laboratory and Clinic, 3th-6th Esfand, 1395. Tehran, Iran (Poster).
7. Nano silver in the treatment of localized cutaneous leishmaniasis caused by *Leishmania major*. Fourth national-student congress of nanotechnology, Tehran, Iran; 2009 (**Oral**).

8. **S. Elikae**, M. Sepahi, L. Shafiee, R. Mardani, R. Yousefifar, H. Kaghazian. Different methods of viral inactivation. The 10th Iranian Pharmaceutical Sciences Conference (IPSC 2006), 21-24 August; 2006. Tehran, Iran (Oral).