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Education

- B.Sc. (1996-1998): Cellular and Molecular Biology, Faculty of Science, Tehran University, Tehran, Iran.
- M.Sc.(1999-2002) : Medical Immunology, Faculty of Medicine, Shahid Beheshti Medical School, Tehran, Iran.
- Ph.D. (2006-2012): Medical Biotechnology, Pasteur Institute of Iran, Tehran, Iran.

Experiences

- Research assistant of Cellular and Molecular Research Center, Faculty of medicine, Shahid Beheshti Medical School, 2002 – 2006.
- Sabbatical opportunity: Inserm, UMR 1098, September-May 2012, Besancon, France.
- Sabbatical opportunity: Pasteur Institute of Paris, Laboratory of Immunobiology of Dendritic Cells, October-December 2018, Paris, France.

Position

- Assistant professor at Pasteur Institute of Iran, Immunotherapy and *Leishmania* Vaccine Research Dept. Jan 2013 onward.

Area of Expertise

- Reverse Vaccinology and whole genome mining for new vaccine candidates,
- Peptide Vaccine Research for Leishmaniasis,
- Sub-unit vaccine development focusing on adaptive immune correlates that control early inflammatory conditions by innate immunity especially neutrophils,

Publications

1. MS Lajevardi, T Taheri, E Gholami, N Seyed, S Rafati, “**Structural analysis of PpSP15 and PsSP9 sand fly salivary proteins designed with a self-cleavable linker as a live vaccine candidate against cutaneous leishmaniasis**”, Parasites & vectors, 2022, 15 (1), 1-18.
2. N Seyed, F Zahedifard, S Habibzadeh, R Yousefi, MS Lajevardi, S. Rafati. “**Antibiotic-Free Nanoplasms as Promising Alternatives for Conventional DNA Vectors**”. Vaccines, 2022 10 (10), 1710.
3. MS Lajevardi, T Taheri, E Gholami, H Sarvnaz, S Habibzadeh, N Seyed, S. Rafati, “**Leishmania tarentolae as potential live vaccine co-expressing distinct salivary gland proteins against experimental cutaneous leishmaniasis in BALB/c mice model**”, Frontiers in Immunology, 2022, 13, 2478,
4. N Seyed, S Rafati. “**Th1 concomitant immune response mediated by IFN- γ protects against sand fly delivered Leishmania infection: Implications for vaccine design**”, Cytokine, 2021,155247.
5. AS Shermeh, F Zahedifard, S Habibzadeh, T Taheri, S Rafati, N Seyed. “**Evaluation of protection induced by in vitro matured BMDCs presenting CD8+ T cell stimulating peptides after a heterologous vaccination regimen in BALB/c model against Leishmania major**”. Experimental Parasitology, 2020, 223, 108082,
6. A Sadeghi Shermeh, S Habibzadeh, A Taghikhani, S Rafati, N Seyed. “**Optimized Mouse BMDC Isolation and Culture under Endotoxin-Free Conditions**”. Scientific Journal of Ilam University of Medical Sciences, 2021 29 (2), 43-54.
7. S Nahidi, E Gholami, Y Taslimi, S Habibzadeh, N Seyed, E Davarpanah. “**The outcome of arginase activity inhibition in BALB/c mice hosting Leishmania tropica**”. Parasite Immunology, 2020, 42 (3), e12691.
8. E. Davarpanah, N. Seyed, F. Bahrami, S. Rafati, R. Safaralizadeh, T. Taheri. “**Lactococcus lactis expressing sand fly PpSP15 salivary protein confers long-term protection against Leishmania major in BALB/c mice**”. PLoS Neglected Tropical Diseases, 2020, 14 (1).
9. N. Seyed, S. Rafati. “**Resolution and pro-resolving lipid mediators in Leishmania infection**”. Journal of Medical Microbiology and Infectious diseases. 2019; 7 (3):61-65.
10. N.S. Savar, F. Zahedifard, S.A. Shermeh, S. Rafati, N. Seyed. “**The Nano-plasmid vector as an alternative for the conventional pcDNA platform for vaccine design**”. European Journal of Immunology, 2019, 49: 1651-1651.

11. E. Gholami, F. Oliveira, T. Taheri, N. Seyed, S. Gharibzadeh, S. Rafati. ***"DNA plasmid coding for Phlebotomus sergenti salivary protein PsSP9, a member of the SP15 family of proteins, protects against Leishmania tropica"***. PLoS Neglected Tropical Diseases, 2019, 13 (7), e0007585.
12. N. Seyed, N.C. Peters, S. Rafati. ***"Translating Observations from Leishmanization into non-Living Vaccines: The Potential of Dendritic Cell Based Vaccination Strategies against Leishmania"***. Frontiers in Immunology, 2018, 9: 1227.
13. Z. Abdossamadi, N. Seyed, F. Zahedifard, T. Taheri, S. Rafati, ***"Human Neutrophil Peptide 1 as immunotherapeutic agent against Leishmania infected BALB/c mice"***. PLoS Neglected Tropical Diseases, 2017, 11 (12): e0006123.
14. Z. Abdossamadi, N. Seyed, S. Rafati. ***"Mammalian host defense peptides and their implication on combating Leishmania infection"***. Cellular immunology, 2017, 309, 23-31.
15. N. Seyed , S. Rafati. ***"Innate Immunity Plays a Key Role in Leishmania Infection: Implications for Vaccine Design"***. Journal of Medical Microbiology and Infectious Diseases, 2016, 4(3 and 4): 39-44.
16. N. Seyed, T. Taheri, S. Rafati. ***"Post Genomics and Vaccine Improvement for Leishmania"***. Front Microbiol. 2016; 7: 467.
17. T. Taheri, N. Seyed, A. Mizbani, S. Rafati. ***"Leishmania-based expression systems"***. Appl Microbiol Biotechnol, 2016, 100 (17): 7377-85.
18. M. Zandieh, T. Kashi, T. Taheri, F. Zahedifard, Y. Taslimi, N. Seyed. ***"Assessment of Protection Induced by DNA and Live Vaccine Encoding Leishmania MHC Class I Restricted Epitopes against L. major Challenge in Balb/c Mice Model"***. Journal of Microbial and Biochemical Technology, 2015, 7: 427-438.
19. S. Sadeghi, N. Seyed, M.H. Etemadzadeh, S. Abediankenari, S. Rafati, T. Taheri. ***"In Vitro Infectivity Assessment by Drug Susceptibility Comparison of Recombinant Leishmania major Expressing Enhanced Green Fluorescent Protein or EGFP-Luciferase Fused Genes with Wild-Type Parasite"***. 2015. Korean Journal of Parasitology. 53(4): 385–394.
20. S. Seif, F. Kazemi, E. Gholami, N. Seyed, Y. Taslimi, S. Habibzadeh, ***"EGFP reporter protein: its immunogenicity in Leishmania-infected BALB/c mice"***. Applied Microbiology and Biotechnology, 2015:1-12.
21. T. Taheri, H.S. Nik, N. Seyed, F. Doustdari, M.H. Etemadzadeh, F. Torkashvand, S. Rafati. ***"Generation of stable L. major+ EGFP-LUC and simultaneous comparison between EGFP and luciferase sensitivity"***. Experimental parasitology, 2015, 150: 44-55.

22. N. Seyed, T. Taheri, C. Vauchy, M. Dosset, Y. Godet, A. Eslamifar, I. Sharifi, O. Adotevi, C. Borg, P. S. Rohrlich, S. Rafati. ***"Immunogenicity Evaluation of a Rationally Designed Polytope Construct Encoding HLA-A*0201 Restricted Epitopes Derived From Leishmania major Related Proteins in HLA-A2/DR1 Transgenic Mice: Steps Toward Polytope Vaccine."*** PLoS ONE, 2014, 9(10) e108848.
23. T. Taheri, E. Gholami, F. Saatchi, N. Seyed, Y. Taslimi, S. Rafati ***"Expressional comparison between Episomal and stable transfection of a selected tri-fusion protein in Leishmania tarentolae"***. Vaccine Research, 2014, 1(1): 1-9.
24. N. Seyed, T. Taheri, C. Vauchy, M. Dosset, I. Sharifi, P. S. Rohrlich, S. Rafati. ***"Rationally designed DNA construct encoding MHC class I restricted epitopes derived from Leishmania major proteins successfully provokes Cytotoxic CD8 T cell responses in Balb/c mice."*** Frontiers in Immunology. Conference abstract: 15th international congress of immunology. Doi: 10.3389/conf.fimmu. 2013.02.00987
25. N. Seyed, F. Zahedifard, Sh. Safaiyan, E. Gholami, F. Doustdari, K. Azadmanesh, M. Mirzaei, N. Saeedi Eslami, A. Khadem Sadegh, A. Eslamifar, I. Sharifi, S. Rafati. ***"In Silico Analysis of Six Known Leishmania major Antigens and In Vitro Evaluation of Specific Epitopes Eliciting HLA-A2 Restricted CD8 T Cell Response"***. PLoS Neglected Tropical Diseases. 2011. 5 (9): e1295.
26. A. Bolhassani, E. Gholami; F. Zahedifard; N. Moradin; P. Parsi; F. Doustdari; N. Seyed; B. Papadopolou; S. Rafati. ***"Leishmania major: Protective capacity of DNA vaccine using amastin fused to HSV-1 VP22 and EGFP in BALB/c mice model"***. Experimental parasitology 2011; 128(1): 9-17.
27. A. Bolhassani, T. Taheri, Y. Taslimi, S. Zamanilui, F. Zahedifard, N. Seyed, F. Torkashvand, B. Vaziri, S. Rafati. ***"Fluorescent Leishmania species: development of stable GFP expression and its application for in vitro and in vivo studies"***. Exp Parasitol. 2011, 127 (3): 637-644.
28. M. Salehi, A. Bolhassani, T. Taheri, E. Mohit, N. Seyed, F. Zahedifard, Y. Taslimi, M. Sattari and S. Rafati. ***"Construction of a recombinant Leishmania tarentolae expressing human papillomavirus type 16 E7 gene and evaluation of its immunogenicity in C57BL/6 mice model"***. Clinical Biochemistry, 2011. 44 (13): S74.
29. H. Saadat, P. Pakzad, N. Seyed. ***"Assesment of Anti-Streptokinase Antibody in Patients with Heart Diseases and Normal Subjects"***. Iranian Journal of Immunology, 2004, 1(1): 63-70.

30. B. Kazemi, F. Fallahian, N. Seyed "***Molecular cloning of the streptokinase mutant gene***".
Pakistani Journal of Biological Sciences, 2006, 9(3): 546-548.
 31. B. Kazemi, F. Yasaee, M. Bandehpour, N. Seyed. "***Diagnosis of Trichomonas Vaginalis Infection by Urine PCR Analysis Compared to wet mount Microscopic Screening***".
Journal of Medical Sciences, 2004, 4(3): 206 – 209.
 32. B. Kazemi, N. Seyed, P. Shekari, M. Bandehpour, Z. Sharifnia, K. Parivar . "***Production of mutant recombinant streptokinase protein***". Archives of Clinical Infectious Diseases, 2008, 3(4): 179-183.
 33. M. Bandehpour, N. Seyed, M. Shadnough, P. Pakzad, B. Kazemi, "***Using recombinant Chlamydia Major Outer Membrane Protein (MOMP) in ELISA diagnostic Kit***" ,Iranian Journal of Biotechnology, 2006, 4(4): 239-244.
 34. B. Kazemi, N. seyed, M. Bandehpour, P. pakzad, "***Cloning, Expression, and purification of Truncated Chlamydia Trachomatis Outer membrane Protein 2 (Omp2) and its application in an ELISA assay***", Iranian Journal of Immunology, 2008, 5(3): 148-155.
 35. B. Kazemi, N. Seyed, E. Moslemi, M. Bandehpour, M. Bikhof Torbati, N. Saadat, A. Eidi, E. Ghayoor, F. Azizi, "***Insulin receptor gene mutations in Iranian patients with type II Diabetes Mellitus***", Iranian Biomedical Journal, 2009, 13 (3): 161-168.
 36. M. Bandehpour, Z. Sharifnia, N. Mohajeri, M. Taherkhani, N. Seyed, A. Koochaki, F. Yarian, R. Shirvani, P. Pakzad, H. Saadat, B. Kazemi. "***Comparative study of the reactivity of natural and mutated streptokinase with total anti-streptokinase Abs in human sera***". Blood Coagulation and Fibrinolysis. Blood Coagulation & Fibrinolysis: 2012, 23 (8): 734–738.
- Book Chapter:** T. Taheri, N. Seyed. S. Rafati. "***DNA Integration in Leishmania Genome: An Application for Vaccine Development and Drug Screening***". Vaccine Design, Volume 1403 of the series Methods in Molecular Biology, Springer, 603-622.

Scientific Curriculum

- Attending 4th World Congress on Leishmaniasis, Worldleish4, February 3-7 2009, Lucknow, India.
- Poster presentation at 14th International Congress of Immunology, August 2010, Kobe, Japan.
- Attending Scientific Meeting of the Young researchers of RIIP Paris, November 10, 2011.

- Oral presentation at 5th World Congress on Leishmaniasis, Worlleish5, May 13-17, 2013, Porto de Galinhas, Brazil.
- Oral presentation at Anual Scientific Meeting of researchers of Pasteur Institute International Network, Paris, September 10-13, 2014.
- Attending EMBO conference “Microbiology after Genomics revolution” (Genome 2014) Pasteur Institute of Paris, June 24-27, 2014.
- Attending theoretical and practical training course in “Metabolomics and it’s data analysis in Systems Biology”, Pasteur Institute of Iran, January 3-4, 2015.
- Poster presentation at Annual Scientific Meeting of researchers of RIIP Paris, October 10-13, 2015.
- Attending MOOC vaccinology course, Pasteur Institute of Paris, September 2015.
- Contributing in MATI regional meeting of “Pasteur Institute International Network”, November 7-9, 2016, Tehran, Iran.
- Attending annual Scientific Meeting of researchers of Pasteur Institute International Network, Paris, Nov 29- Dec 2, 2016.
- Attending Innate Immunity and Infectious Diseases course, Pasteur Institute of Paris, April 10-25, 2017, Paris, France.
- Poster presentation at 6th World Congress on Leishmaniasis: “CD8+ T cell contribute to protection against Cutaneous Leishmaniasis in BALB/c model: Implication for vaccine design”, Worlleish6, May 2-5, 2017, Toledo, Spain.
- Oral presentation at 14th International Congress of Immunology and Allergy, April 26-28, 2018, Tehran, Iran.
- Attending Advanced Immunology course, Pasteur Institute of Paris, November 19- December 21, 2018, Paris, France.
- Attending 17th International Congress of Immunology, October 19-23, 2019, Beijing, China.

Workshops

- Workshop holding on “Immunoinformatics and vaccine design”, 12th International Congress of Immunology and Allergy, April 29-May2, 2014. Tehran, Iran.
- Workshop holding on “Flow cytometry Basics and Applications”, Pasteur Institute of Iran, February 16-17, 2015, Tehran, Iran.

- Workshop holding on “Flow cytometry Basics and Applications”, Pasteur Institute of Iran, February 24-25, 2015, Tehran, Iran.
- Workshop holding on “Flow cytometry Basics and Applications”, Pasteur Institute of Iran, February 16-17, 2016, Tehran, Iran.
- Workshop holding on “Basics of ELISA: applications and Set up”, Pasteur Institute of Iran, February 19, 2017, Tehran, Iran
- Collaborating in the organization of the second workshop on “*Leishmania* and Leishmaniasis”, Pasteur Institute of Iran, November 9-13, 2016, Tehran, Iran.
- Workshop holding on “Biosafety and Biosecurity”, Pasteur Institute of Iran, November 31-December 1, 2019. Tehran, Iran.
- Workshop holding on “Recombinant Vaccine Design and production”, Pasteur Institute of Iran, February 2020, Tehran, Iran.
- Workshop holding on “High Throughput Technologies in Translational Immunology”, Pasteur Institute of Iran, March 2021, Tehran, Iran.

Technical expertise and computational knowledge

- Cell culture
- Flow cytometry
- Immunoassays including cytotoxicity assays, ELISpot, ICCS, CFSE, ELISA
- PCR and electrophoresis
- Gene cloning
- Western blotting
- Immunoinformatics and *in silico* peptide prediction