

Mohammad Tarique, Ph.D.

Postdoctoral Research Fellow

Department of Child Health, School of Medicine

University of Missouri, Columbia, MO-65201, USA

Email: tariqueunmatched@gmail.com, mohammad.tarique@health.missouri.edu

Mobile: +1-(786)740-7982

Current Position

September 2020 to present, Postdoctoral Research Fellow,

Institution: University of Missouri, Columbia, MO, USA

Research Advisor: Dr. Haval Shirwan, Ph.D, Department of Child Health, University of Missouri, Columbia, MO, USA

Past Position

February 2017 to August 2020, Postdoctoral Research Associate

Institution: University of Miami, USA

Research Advisor: Dr. Vikas Dudeja, MD, Department of Surgery, University of Miami

Education

2011-2017 Ph.D., Biochemistry (Molecular Immunology)

Institution: All India Institute of Medical Sciences (AIIMS), New Delhi, India.

Research Topic: “T cell mediated immunity in leprosy patients”

Research Advisor: Professor Alpana Sharma

2007-2009: M.Sc., Biotechnology

Institution: Jamia Hamdard (Hamdard University) New Delhi, India.

2003-2005: B.Sc., Zoology and Chemistry

Institution: Lucknow University, Lucknow, India

Publications

- ✓ **Tarique M, Naz H, Saini C, Sharma H, Suhail M, Khanna N, Sharma A.** Association of IL-10 Gene Polymorphism With IL-10 Secretion by CD4 and T Regulatory Cells in Human Leprosy. *Frontiers in Immunology, 06 August 2020.*
- ✓ Ghulam Md Ashraf, Mahmoud Ahmed Ebada, Mohd Suhail, Ashraf Ali, Md Uddin, Anwar L Bilgrami, Asma Perveen, Amjad Husain, **Tarique M** et al; Dissecting Sex-Related Cognition between Alzheimer’s Disease and Diabetes: From Molecular Mechanisms to Potential Therapeutic Strategies. **Oxidative Medicine and Cellular Longevity. 2021**
- ✓ Mohd Suhail, **Tarique M**, Naoshad Muhammad, Huma Naz, Abdul Hafeez, Torki A Zughabi, Mohammad Amjad Kamal, Mohd Rehan. A critical transcription factor NF- κ B as a cancer therapeutic target and its inhibitors as cancer treatment options. **Current Medicinal Chemistry.2020**
- ✓ Saini C, Srivastava RK, **Tarique M**, Kurra S, Khanna N , Ramesh V and Sharma A. Elevated IL-6R on CD4+ T cells promotes IL-6 driven Th17 cell responses in patients with T1R leprosy reactions. *Scientific Reports (Accepted)*
- ✓ Ejas Palathingal Bava, John George, **Mohammad Tarique**, Srikanth Iyer, Preeti Sahay, Beatriz Gomez Aguilar, Dujon Edwards, Bhuwan Giri, Vrishketan Sethi, Tejeshwar Jain, Prateek Sharma, Utpreksha Vaish, Harrys Charles Jacob, Anthony Ferrantella, Rajinder

Dawra, Ashok Saluja, Vikas Dudeja. Pirfenidone Attenuates Local and Systemic Injury and Inflammation in Acute Pancreatitis Through Immune and Cytokine Modulation. *JCI Insight* (*Under revision*)

- ✓ Huma Naz **Mohammad Tarique**, Mohd Suhail, Hari Shankar, Naoshad Muhammad5, Darksha Usmani, Mohammad Ashraf, Torki A. Zughai. Calcium-/Calmodulin-Dependent Protein Kinase IV (CAMKIV): A Multifunctional Enzyme and Its Role in Various Cancer: An Update. *Current Molecular Biology Reports*
- ✓ Hari Shankar, Shukla Saluja, Monica Rawat, Gyanendra Singh, **Mohammad Tarique**, Naoshad Mohammad, Huma Naz. The Causal Association Between Occupational, Environmental, and Lifestyle Factors and Reproductive Cancer Risk. *Current Molecular Biology Reports*
- ✓ Naz H, **Tarique M**, Ahamad S, Alajmi MF, Hussain A, Rehman MT, Luqman S, Hassan MI. Hesperidin-CAMKIV interaction and its impact on cell proliferation and apoptosis in the human hepatic carcinoma and neuroblastoma cells. *J Cell Biochem.* 2019 Apr 25.
- ✓ **Tarique M**, Naz H, Kurra SV, Saini C, Naqvi RA, Rai R, Suhail M, Khanna N, Rao DN, Sharma A. Interleukin-10 Producing Regulatory B Cells Transformed CD4+CD25- Into Tregs and Enhanced Regulatory T Cells Function in Human Leprosy. *Front Immunol.* 2018 Jul 23; 9:1636.
- ✓ Saini C, **Tarique M**, Ramesh V, Khanna N, Sharma A. $\gamma\delta$ T cells are associated with inflammation and immunopathogenesis of leprosy reactions. *Immunol Lett.* 2018 Jul 10. pii: S0165-2478(18)30122-6.
- ✓ Sethi V, Kurtom S, **Tarique M**, Lavania S, Malchiodi Z, Hellmund L, Zhang L, Sharma U, Giri B, Garg B, Ferantella A, Vickers SM, Banerjee S, Dawra R, Roy S, Ramakrishnan S, Saluja A, Dudeja V. Gut Microbiota Promotes Tumor Growth in Mice by Modulating Immune Response. *Gastroenterology.* 2018 Jul;155(1):33-37
- ✓ Suhail M, Sohrab SS, Qureshi A, **Tarique M**, Abdel-Hafiz H, Al-Ghamdi K, Qadri I. Association of HCV mutated proteins and host SNPs in the development of hepatocellular carcinoma. *Infect Genet Evol.* 2018 Jun; 60:160-172.
- ✓ **Tarique M**, Saini C, Naz H, Naqvi RA, Khan FI, Sharma A. Fate of T cells and their secretory proteins during the progression of leprosy. *Curr Protein Pept Sci.* 2018;19(9):889-899.
- ✓ Naz H, **Tarique M**, Khan P, Luqman S, Ahamad S, Islam A, Ahmad F, Hassan MI. Evidence of vanillin binding to CAMKIV explains the anti-cancer mechanism in human hepatic carcinoma and neuroblastoma cells. *Mol Cell Biochem.* 2018 Jan;438(1-2):35-45.
- ✓ Saini C, Kumar P, **Tarique M**, Sharma A, Ramesh V. Regulatory T cells antagonize proinflammatory response of IL-17 during cutaneous tuberculosis. *J Inflamm Res.* 2018 Sep 28; 11:377-388.
- ✓ **Tarique M**, Saini C, Naqvi RA, Khanna N, Sharma A, Rao DN. IL-12 and IL-23 modulate plasticity of FoxP3+ regulatory T cells in human Leprosy. *Mol Immunol.* 2017 Mar; 83:72-81
- ✓ **Tarique M**, Saini C, Naqvi RA, Khanna N, Rao DN. Increased IL-35 producing Tregs and CD19+IL-35+ cells are associated with disease progression in leprosy patients. *Cytokine.* 2017 Mar; 91:82-88.
- ✓ **Tarique M**, Naqvi RA, Ali R, Khanna N, Rao DN. CD4+TCR $\gamma\delta$ +FoxP3+ cells: An unidentified population of immunosuppressive cells towards disease progression leprosy patients. *Exp Dermatol.* 2017 Oct;26(10):946-948.
- ✓ Saini C, **Tarique M**, Rai R, Siddiqui A, Khanna N, Sharma A. T helper cells in leprosy: An update. *Immunol Lett.* 2017 Apr; 184:61-66.
- ✓ Naz H, Khan P, **Tarique M**, Rahman S, Meena A, Ahmad S, Luqman S, Islam A, Ahmad F, Hassan MI. Binding studies and biological evaluation of β -carotene as a potential inhibitor of

human calcium/calmodulin-dependent protein kinase IV. *Int J Biol Macromol.* 2017 Mar; **96**:161-170.

- ✓ Jameel E, Naz H, Khan P, **Tarique M**, Kumar J, Mumtazuddin S, Ahamad S, Islam A, Ahmad F, Hoda N, Hassan MI. Design, synthesis, and biological evaluation of pyrimidine derivatives as potential inhibitors of human calcium/calmodulin-dependent protein kinase IV. *Chem Biol Drug Des.* 2017 May; **89(5)**:741-754.
- ✓ **Tarique M**, Naqvi RA, Santosh KV, Kamal VK, Khanna N, Rao DN. Association of TNF- α -(308(GG)), IL-10(-819(TT)), IL-10(-1082(GG)) and IL-1R1(+1970(CC)) genotypes with the susceptibility and progression of leprosy in North Indian population. *Cytokine.* 2015 May; **73(1)**:61-5.

Awards and Fellowships

- ✓ Awarded early career Investigator by Digestive Disease Week (DDW), San Diego, USA (2019)
- ✓ Young Investigator Award by American Pancreatic Association (APA) (2018)
- ✓ Awarded Junior Research Fellowship by University Grant commission, New Delhi, India (2010-2012)
- ✓ Awarded Senior Research Fellowship by University Grant commission, New Delhi, India (2012-2016)

National Level Tests Qualified

- ✓ Selected for Doctoral programme conducted by All India Institute of Medical Sciences (AIIMS), New Delhi, India (2011).
- ✓ National Eligibility Test Conducted by University Grants Commission (UGC) and Council of Scientific and Industrial Research (CSIR) for Junior Research Fellow and Lectureship in June 2009 with All India Rank (AIR) 142.
- ✓ Junior Research Fellow Conducted by University Grants Commission (UGC) and Council of Scientific and Industrial Research (CSIR) for Junior Research Fellow and Lectureship in December 2009 with All India Rank (AIR) 114
- ✓ Junior Research Fellow Conducted by University Grants Commission (UGC) and Council of Scientific and Industrial Research (CSIR) for Junior Research Fellow and Lectureship in June 2010 with All India Rank (AIR) 184
- ✓ Junior Research Fellow Conducted by Indian Council of Medical Research (ICMR) in July 2009.
- ✓ Qualified national level examination conducted by Indian Institute of Technology (IIT) Roorkee Graduate Aptitude Test for Engineering (GATE) in 2009 with percentile 97.72 and All India Rank (AIR) 305.
- ✓ All India Entrance Examination for M.Sc. (Biotechnology) conducted by Jamia Hamdard (Hamdard University), New Delhi in 2007.

Professional Memberships

- ✓ Member, American Pancreatic Association
- ✓ Member, American Gastroenterological Association
- ✓ Member, Indian Immunology Society

Reviewer in Scientific Journals

Scientific Reports, Frontiers in Immunology, Cancer Cell International, BMC Cancer, Current Protein and Peptide Sciences, Journal of Cellular Biochemistry, Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis, Bioinformation, Frontiers Physiology.

Funding and Grants

Grant of \$50,000 by American Pancreatic Association (APA, 2018)

Conferences and Seminars

- ✓ Oral presentation “Role of Sonic Hedgehog Pathway in The Pathogenesis of Chronic Pancreatitis in Mouse Models.” Digestive Disease Week (DDW)-2019, San Diego, USA.
- ✓ Poster Presentation “Depletion of Gram-Positive Bacteria in the Gi Tract with Oral Vancomycin Prevents Morphine Associated Worsening of Injury in Acute Pancreatitis” Digestive Disease Week (DDW)-2019, San Diego, USA.
- ✓ Poster Presentation “Morphine Treatment in Acute Pancreatitis Affects Macrophage Functions Leading to Increase in Inflammation and Delay in Recovery” Digestive Disease Week (DDW)-2019, San Diego, USA.
- ✓ Poster Presentation “Activation of Sonic Hedgehog (Shh) Pathway leads to Fibrosis in Mouse Models of Chronic Pancreatitis” in American Pancreatic Association (APA)-2018, Miami, USA
- ✓ Poster presentation “Fate of TCR $\gamma\delta$ cells during progression of leprosy.” Immunocon Conference – 2014 at Madurai Kamraj University, Madurai, India.
- ✓ Poster presentation “Identification and Characterization of a new sub-type of immunosuppressive cells (CD4+TCR $\gamma\delta$ +FoxP3+cells) during progression of leprosy.” Immunocon Conference -2013 at UCMS, New Delhi, India.
- ✓ Active participation in New Horizon in Basic and Clinical Research” Department of Biochemistry, AIIMS 2012 at AIIMS, New Delhi, 110029, India.
- ✓ Active participation in Recent Trends in Protein Structural Biology Conference – 2013 at Jamia Millia Islamia, New Delhi, 110025, India.
- ✓ Active participation in Regional Seminar on “Intellectual Property Protection and Management” organized by Corporation in collaboration with Central Council for Research in Unani Medicine from 11th- 12th February 2009 held at Jamia Hamdard, New Delhi, India

Techniques/ Skills

- ✓ Multi-parameter Flow cytometry
- ✓ Real Time-PCR
- ✓ Immunohistochemistry (IHC)
- ✓ Immunofluorescence (IF)
- ✓ ELISA, ELISpot
- ✓ PBMCs isolation
- ✓ T cell isolation and culture
- ✓ Dendritic cell culture
- ✓ Western blotting
- ✓ Confocal microscopy
- ✓ Orthotopic tumor induction

- ✓ Xerograph of tumor
- ✓ Maintain cancer cell lines
- ✓ Peptide synthesis and Immunization of mice and raising antibodies.
- ✓ Animal and Insect Tissue culture and Transfection of animal cell lines.
- ✓ SiRNA delivery in PBMCs culture
- ✓ Genomic and Plasmid DNA isolation and purification, Restriction digestion & Ligation
- ✓ Isolation, purification and estimation of RNA
- ✓ Growth, Preparation of competent cells and transformation of bacteria.
- ✓ Isolation, characterization and Estimation of Proteins.
- ✓ Sub cellular fractionation and gradient centrifugation.

Practice of handling experimental laboratory animals

- ✓ Mouse handling
- ✓ Gavage
- ✓ Tail vein injection
- ✓ Intranasal and intradermal Immunization.
- ✓ Bleeding of mice by tail vein method, retro-orbital puncture.
- ✓ Spleenocyte isolation and T cell proliferation assay.
- ✓ Bone marrow derived macrophage isolation and culture
- ✓ Pancreatic Stellate Cells (PSCs) isolation and culture.
- ✓ Acinar cells isolation and culture.
- ✓ Lung wash and intestinal wash collection.

Computer Skills

- ✓ Operating System: Microsoft Windows Vista and XP
- ✓ Hardware and networking: Installing new hardware and software (operating system),
- ✓ Microsoft Office, Graph pad Prism, Excel, Power Point
- ✓ Adobe Photoshop, Image ProPlus, Gel Proanalyzer, Quantity One, Image Ready
- ✓ LSM examiner (Confocal image analysis), CellQuest (FACS analysis software)
- ✓ Flowjo, FACS Diva analysis

References

- ✓ **Dr. Alpana Sharma, Ph.D.**
Professor,
Department of Biochemistry
AIIMS, New Delhi, India-110029
Email-dralpanasharma@gmail.com
- ✓ **Dr. Savita Yadav, Ph.D.**
Professor,
Department of Biophysics,
AIIMS, New Delhi, India-110029
Email- savita11@gmail.com

- ✓ **Dr. Mahendra K. Singh, Ph.D.**
Research Assistant Professor,
Department of Surgery, Miller School of Medicine,
University of Miami, Miami, FL-33136, USA
Email- mahendragbc@gmail.com

- ✓ **Dr. Vikas Dudeja, MD**
Associate Professor,
Department of Surgery, Miller School of Medicine,
University of Miami, Miami, FL-33136, USA
Email- vikas.dudeja@med.miami.edu