

Dr. Shumaila Naz

Tenured Associate Professor

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Profile

Dr. Shumaila Naz is an accomplished molecular parasitologist and immunologist with expertise in infectious diseases, molecular diagnostics, immunoinformatics, and translational biotechnology. She is currently serving as an Associate Professor at the Department of Biotechnology, National University of Medical Sciences (NUMS), Rawalpindi, Pakistan, and has also led the Section of Biotechnology. She is head of the Departmental Quality Assurance Committee and also convenor of NUMS Art and Media Society.

Dr. Naz has over 15 years of experience in academic teaching, advanced research, and program development, with a strong focus on cutaneous leishmaniasis, parasitic diseases, host–pathogen interactions, and vaccine design. Her research integrates molecular biology, next-generation sequencing, recombinant DNA technology, and immunological assays to develop diagnostic and therapeutic strategies. She has received international research training at the University of the Sunshine Coast, Australia, and training in Next Generation Sequencing Bioinformatics from the Wellcome Genome Campus, UK. She has also completed specialized GxP training at the International Vaccine Institute (IVI), South Korea, and international research visit to Ege University, Izmir, Turkey.

Dr. Naz has led multiple nationally and internationally funded research projects as Principal Investigator, including those funded by HEC, PSF-TUBITAK, and NUMS. She has an extensive publication record in high-impact journals, contributing significantly to molecular epidemiology, genome analysis, and immunodiagnosics of neglected tropical diseases.

Research Interest

Parasitology and Immunology; Recombinant DNA technology; Immuno-diagnostics; vaccines and biological products; Host-pathogen interaction

Selected Publications

Irshad Ullah, Arsh Bibi, **Shumaila Naz***. Draft genome sequence of *Leishmania tropica* isolated from a cutaneous leishmaniasis patient in Pakistan. Microbiol Resour Announc. 2025.

Bashair Sheikh Pervez, Arshad Islam, Azhar Minhas, Yusuf Ozbel, Seray Toz, Shahid Waseem, Obaid Hayat, and **Shumaila Naz***. Evaluation of IgG anti-L. tropica antibody response as a biomarker for cutaneous leishmaniasis using ELISA in endemic regions of Pakistan. *Journal of Microbiological Methods* (2025): 107340.

Shumaila Naz*, Muhammed Nalcaci, Obaid Hayat, Seray Toz, Azhar Minhas, Shahid Waseem, Yusuf Ozbel. Genetic diversity and epidemiological insights into cutaneous leishmaniasis in Pakistan: a comprehensive study on clinical manifestations and molecular characterization of *Leishmania* species. *Parasitol Res* 123, 320 (2024).

Shumaila Naz*, Aiman Aroosh, Naeem Raza, Arshad Islam, Anam Fatima, Yusuf Ozbel, Seray Toz, Obaid Hayat, Shahid Waseem. Comparative analysis of the severity and progression of cutaneous leishmaniasis caused by *Leishmania tropica* in untreated and glucantime-treated patients. *Acta Tropica*. 2023.

Shumaila Naz*, Aiman Aroosh, Naeem Raza, Arshad Islam, Yusuf Ozbel, Seray Toz, Haroon Ahmed, Shahid Waseem. 2022. Multiparametric Approach to Assess the Disease Severity and Progression of Cutaneous Leishmaniasis Infection. *Acta tropica*.

Huma Shehwana, Sadaf Ijaz, Areeba Fatima, Shelley Walton, Zafar Iqbal Sheikh, Waseem Haider, and **Shumaila Naz***. 2021. Transcriptome analysis of host inflammatory responses to the ectoparasitic mite *Sarcoptes scabiei* var. *hominis*. *Frontiers in immunology*.

Awards/Achievements/Grants

Principal Investigator, “Prototype development of molecular markers for diagnosis of leishmaniasis through whole genome sequencing” (NUMS-TIF, Rs. 5 Million, ongoing)

Principal Investigator, “Molecular Profiling of Artemisinin Resistance in Plasmodium falciparum” (NUMS-IRF, Rs. 1 Million, ongoing)

Principal Investigator, PSF-TUBITAK funded project on diagnosis of cutaneous leishmaniasis (Rs. 3.57 Million, completed)

Principal Investigator, Exploring the microbiome profile in cutaneous leishmania” (NUMS-IRF, Rs. 1 Million, completed)

Travel Grant, Wellcome Genome Campus (UK), 2019 – NGS Bioinformatics Training

Indigenous PhD Scholarship, Higher Education Commission (HEC), Pakistan

IRSIP Scholarship (HEC) with international research training in Australia

Gold Medalist (M.Phil Zoology), PMAS Arid Agriculture University