Dr. Shumaila Zulfiqar

Assistant Professor
Department of Biotechnology
Kinnaird College for Women University
shumaila.zulfiqar@kinnaird.edu.pk

Dedicated and skilled researcher with a PhD in Biotechnology, specializing in the genetic andmolecular investigation of rare neurological and eye disorders. Extensive experience in identifying novel pathogenic variants through advanced molecular biology and bioinformatics techniques. Proven track record of international research collaboration, and impactful publications. Seeking a postdoctoral position to further contribute to the understanding of neurogenetic diseases and develop innovative therapeutic strategies.

Research Interests

- Molecular and genetic bases of rare eye and neurological disorders
- Identification of novel pathogenic genes and variants
- Neurogenetics and molecular mechanisms of hereditary disorder

Education

PhD in Biotechnology

- National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan
  Pakistan Institute of Engineering and Applied Sciences, Islamabad
- Uppsala University, Sweden

PhD Thesis: Clinical and Genetic Investigations of Rare Neurological Disorders in the Pakistani Population

Molecular Biology Techniques:

RT-PCR, gel electrophoresis, Western blotting, Southern blotting, DNA/RNA extraction, cloning, Sanger sequencing, cell culture, transfection

Bioinformatics:

Drug design, molecular docking, homology modeling, Sanger sequence analysis, whole exome sequencing data analysis, phylogenetic analysis, primer design (AARMS).

Laboratory Management:

Experimental design, hypothesis testing, lab equipment maintenance, inventory management, safety protocols, and SOPs.

Analytical & Research Skills:

Critical thinking, literature review, grant writing, manuscript preparation, data analysis using R, Python, SPSS.

Communication & Collaboration:

Scientific writing, presentation skills, teamwork in multidisciplinary environments, mentoring students.

Project Management:

Leading research projects, setting milestones, tracking progress, course designing for

undergraduate and postgraduate students.

Publications:

1. Alyas J, Khalid N, Fatima H, Arif T, Ishaq S, Chouhadary S, Zulfiqar A, Azhar MU, Zulfiqar S. An Insight into Male Infertility: A Narrative Review. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences. 2024 Jun 27;61(2).
2. A Cross-Sectional Study Elucidating Associated Predictors in Postpartum Depression among Pakistani Women. *Proceedings of the Pakistan Academy of Sciences: Part B (Life and Environmental Sciences)*, 2023.
3. Whole Exome Sequencing Identifies a Novel Variant Causing Cockayne Syndrome TypeI in a Consanguineous Pakistani Family. *International Journal of Neuroscience*, 2022.
4. Investigation of Prevalence and Awareness of Polycystic Ovary Syndrome among Pakistani Females: Polycystic Ovary Syndrome in Pakistani Women. *Proceedings of the Pakistan Academy of Sciences: Part B (Life and Environmental Sciences)*, 2022.
5. Counseling in Inherited Disorders. In *Omics Technologies for Clinical Diagnosis and Gene Therapy: Medical Applications in Human Genetics*, 2022.
6. Identification of a Novel Variant in GPR56/ADGRG1 Gene through Whole ExomeSequencing in a Consanguineous Pakistani Family. *Journal of Clinical Neuroscience*, 2021.
7. Whole Exome Sequencing Identifies Novel Variant Underlying Hereditary Spastic Paraplegia in Consanguineous Pakistani Families. *Journal of Clinical Neuroscience*, 2019.
8. Homozygous GRID2 Missense Mutation Predicts a Shift in the D-Serine Binding Domain of GluD2 in a Case with Generalized Brain Atrophy and Unusual ClinicalFeatures. *BMC Medical Genetics*, 2017.
9. A Missense Variant in ITPR1 Provides Evidence for Autosomal Recessive SCA29 with Asymptomatic Cerebellar Hypoplasia in Carriers. *European Journal of Human Genetics*, 2017.
10. Role of Genetic Studies towards Solving Problems of Human Society. *Nature & Science*,2015.