

Dr. Shiekh Nadeem

Assistant Professor

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Educational Qualification:

PhD Biotechnology

Thesis Title "*Study of Neuronal Gene Regulation by Genome Analysis.*"
Institute of Genomics and Integrative Biology- CSIR Delhi

M. Sc Biotechnology

Kashmir University, India

B. Sc English, Biology, Chemistry

Kashmir University, India

PhD Research Highlights

Expression and purification of normal and expanded PolyQ human TBP (TATA Binding Protein) variants that causes SCA17 neurodegeneration.

Kinetics and thermodynamics of **DNA-TBP** interactions with the different N-terminally expanded (polyQ) variant of human TATA binding protein.

Whole human genome annotation for CAG-CTG repeats in human genome and prediction of novel genes as candidates for neurodegenerative disorders using gene ontology-based classification utilizing DAVID tool and microarray.

Analysis of microarray expression pattern of CAG repeat containing genes.

Localization and distribution of human TBP variants in Transfected neuronal cell lines and study of protein interaction partners in normal versus SCA17 mutant protein expressed cell lines via coimmunoprecipitation.

Prediction of miRNA mediated regulation of TATA Binding Protein, which harbours the causative mutation in the neurodegenerative disorder, SCA17.

Genome wide search for Identification of RNA localization signals in neuronally expressed genes.

M.Sc. Dissertation "Protective effects of *Rumex dentatus* on membrane lipid peroxidation" carried out at University of Kashmir, India.

Technical Skills:

- Protein expression, Purification, Protein estimation (BCA assay) and protein concentration and dialysis and ELISA.
- Chromatographic techniques. Affinity, Immunoaffinity, size exclusion, ion exchange chromatography.
- Plasmid isolation, competent cell preparation and bacterial transformation.
- Native PAGE, SDS PAGE, Silver staining and Western blotting.
- Electrophoretic Mobility shift Assay (EMSA).
- Fluorescence Resonance Energy transfer (FRET) for detecting DNA-protein interactions.
- Isothermal titration calorimetry.
- Stem cell culture, Neuronal cell culture, Transfection, Microarray, DNA and RNA purification and estimation, PCR and RT-PCR, Northern Blotting.
- Mouse Model.
- Microarray analysis, Coimmunoprecipitation. Immunotechniques.
- Quantitative and qualitative estimation of carbohydrates, proteins, and lipids.

Computer and Bioinformatics knowledge:

Microsoft Excel, Microsoft Word, PowerPoint, experience to handle bioinformatics data and use of various bioinformatic tools and softwares. Like DAVID, GENECODIS, GENEGO, miRanda, RNAhybrid and Target Scan, NCBI Unigene, UCSC Genome Browser, NCBI PubMed, UTR resource, Blast (diff types), nucleotide-nucleotide, Align 2 seq, , Genome blast,, ExPASy Tool, Clustalw, MultiAlin, Motif searching tool, biobase

Fellowships/ Awards/ Achievements:

Qualified national level examination UGC-CSIR NET-JRF that grants university level **Assistant Professorship** across all universities.

Qualified CSIR-JRF under Roll No: 313973

Qualified CSIR-JRF under Roll No: 301388

Qualified CSIR-JRF under Roll No: 301932

Granted Junior research fellowship (JRF)
and Granted Senior research fellowship
(SRF) from

Council of Scientific and Industrial Research (CSIR) India. Granted
Department of Biotechnology (DBT) fellowship for MSc



Teaching Experience

Assistant Professor (2021-Present)

Jammu and Kashmir higher education, India



Courses taught to B.Sc:

Transcription regulation in prokaryotes and eukaryotes, Developmental Biology, Structural Biology & Endocrinology, Protein structure & Chemistry, Cell Biology & Genetics, Biochemistry and Molecular Biology, Microbiology & Immunology, Biotechniques & Biostatistics, cell Cycle, Signalling and Cancer, Environmental Biotechnology, Microbial and Industrial Biotechnology Plant Biotechnology & Tissue Culture, Recombinant DNA technology Enzymology & Hybridoma technology Time and space in biology, biological rhythms, Bioinformatics.

Conferences/Seminars/ Symposium/Workshops:

Conferences organized and Presentations delivered

- **Oral presentation: Proteomics**, Bioscience conference from department of Biochemistry 16- 18 October 2021, Government Degree college Hardware, Kashmir.
- **Oral presentation: Neurodegeneration**, Trends in Biotechnology, conference from department of Biochemistry/ Biotechnology 15-16 November 2021, Government Degree college Hardware, Kashmir.
- **Oral presentation: HIV structure, replication, transcription**, conference on AIDS , 1 December 2021, Government Degree college Hardware, Kashmir.

Conferences participated and Presentations delivered

- **Oral Presentation: Transcription regulation by PolyQ domain of human TBP in neurodegeneration**, XXIX Annual conference of Indian Academy of Neurosciences 30th October- 1st November 2011, DRDO Delhi.
- **Oral Presentation: Protein aggregation and neurodegeneration**, Biosparks 2013/11th Annual conference from School of Life Sciences 15- 16 February 2013, JNU New Delhi.
- **Oral Presentation: Bioinformatics bases Genome wide search for Identification of RNA localization signals across phyla**, NextGen Genomics & Bioinformatics Technologies (NGBT) Conference 17th -19th November 2014, NIMHANS, Bangalore India

Posters:even

Nadeem.S. Transcription dysregulation in neurodegeneration, 19th Biennial Meeting hosted by the Tata Institute of Fundamental Research 11-14 January 2012.

Nadeem.S. CAG- CTG distribution in Human Genome, 8th Annual Research Festival, SLS, Biosparks 11-12 March 2010 JNU, New Delhi.

Workshops/ Saminars:

Workshops organized, Presentations delivered and training imparted

- Organized Biochemistry/Biotechnology Joint Workshop on Handling of laboratory equipments 25-28 July 2021
- Organized Bioscience Workshop on various molecular biology techniques 1-7 Sep 2021

Workshops/Seminars attended

- Attended International Symposium on "Frontier in Molecular Medicine" 13th-14th Feb. 2009, SCMM, JNU, India.
- Attended AIIMS Delhi CSIR-IGIB Joint Workshop on Exome Sequence Analysis and Interpretation 25-26 July 2018
- Attended 3rd Certificate Course on Laboratory Animal Science (CCLAS) Dec. 5th – 16th, 2016 CSIR- Institute of Genomics and Integrative Biology, New Delhi, India

Publications

1. Expression and purification of functionally active three different polyQ variants of full-length human TATA binding protein in bacterial expression system (under submission, **Journal of Advanced Research**)
2. CAG repeat distribution in human genome and prediction of genes as candidates for neurodegenerative disorders. (Manuscript under preparation).
3. Transcription regulation by PolyQ domain of human TBP in neurodegeneration. (Manuscript under preparation).