Rajesh Kumar Das

Curriculum Vitae

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Objectives

Seeking an acceptable research position in a reputed organisation wherein I can utilize my brilliant communication and interpersonal skills with extensive knowledge of contemporary scientific methods and indepth subject understanding with a genuine interest in research and development. Looking forward to work in a healthy and mutually productive scientific environment and simultaneously expanding my skills, knowledge and research expertise.

Interests

Molecular genetics, molecular biology, cell signalling and disease biology

Education

2014-2019	Integrated M.Sc. in Life Sciences, School of Biological Sciences, National Institute of Science Education and Research (NISER) Bhubaneswar, India Gpa: 7:22/10
March 2012	Passed ISC 12th (Biology, Mathematics, Physics, Chemistry, English,Environmental education) Score: 71/100
March 2010	Passed ICSE 10th Score: 78/100

Research Experience

July 2017-May 2019

Worked on "Pathogenesis of Fuchs' endothelial corneal dystrophy" (M.Sc. thesis project) at NISER, Bhubaneswar

Supervisor: Dr. Debasmita P. Alone

Abstract: Fuchs' endothelial corneal dystrophy (FECD) is a multifactorial age related degenerative condition of the posterior cornea characterised by bilateral progressive loss of corneal endothelial cell function leading to severely impaired vision. Genome Wide Association Studies (GWAS) studies have detected several genes, as well as areas of chromosomal loci associated with the pathogenesis of the disease. My thesis research is aimed to study few specific genes, namely KANK4, LAMC1 and ATP1B1 that may have a significant association with the disease in Indian population using Sanger Sequencing, followed by genotyping and studying their functional significance of disease pathogenesis.

May 2017-July 2017

Summer Student at Centre of Advanced Studies, Kolkata

Title: Optimization of picogreen based invitro assay of HIV-RT

Supervisor: Dr. Binay Chaubey

Abstract: One of the most important drug target for HIV drugs is the HIV reverse transcriptase. This enzyme helps in synthesizing a complementary DNA strand that initiates from a primer using either RNA or single stranded DNA as a template. This assay is based on measurement of DNA molecules that are being synthesized by HIV-RT. During this assay, when the RNA is reverse transcribed into DNA, it forms a RNA-DNA hybrid which later becomes a double stranded DNA due to the digestion of RNA by the p51 subunit of HIV- RT that has RNAase H activity. After the formation of the double stranded DNA, picogreen gets incorporated and is then measured by fluorometer.

May 2016 -July 2016 | Summer Student at IISc , Bangalore
Title: Overexpression, purification and characterisation of plant virus like particles(VLPs)
Supervisor: Prof. H.S Savithri

Abstract: Virus-like particles resemble viruses, but are non-infectious because they contain no viral genetic material. The expression of viral structural proteins, such as Envelope or Capsid, can result in the self- assembly of virus like particles (VLPs).Most applications use virus like particles(VLPs) because they are native viral capsid proteins without nucleic acid and therefore do not cause infection. The several copies of viral capsid proteins assemble together and mimic the conformation of the native virus. Virus like particles serve as excellent candidates for nanobiotechnology applications because of their several special features. A sensitive and a reliable method for the detection of disease is crucial for its treatment and successful therapy. The pathogens can be detected via antigens or identification of genomic sequences. Hence, the sensitivity of detection is very important for proper diagnosis.

May 2015 -July 2015 | Summer Student at NISER, Bhubaneswar
Title: Degeneration of Y- chromosome in course of Evolution
Supervisor: Dr. Ramanujam Srinivasan

Abstract: The sexual diversity that creates the difference among the existing species is due to these two set of sex- chromosomes. This reduction in the size of the Y chromosome is the result of a process known as Y chromosome degeneration. In this process the Y chromosome loses most of its genes over several generations during the course of evolution. A major consequence of this gene loss in Y chromosome is that it lacks recombination over most of its length due to its unique shape and limits the transmission of this segment to males. It is due to this reason that classical linkage mapping studies cannot be applied to Y chromosomes. Moreover, Y chromosomes also have a high content of repetitive and ampliconic sequences that makes the genome sequencing projects challenging. Some studies have shown that certain species have already completely lost their Y chromosome due to its continuous degeneration.

Research Paper Published

Title - Fuchs Endothelial Corneal Dystrophy associated risk variant, rs3768617 in LAMC1 shows allele specific binding of GFI1B (https://pubmed.ncbi.nlm.nih.gov/35031421/)

Conferences

17-18 Nov '18: National seminar on occasion of the 20th Odisha Bigyan O pribesh congress (OBPC)- NISER, Bhubaneswar

6 Jan '17: 2nd Meeting of Indian Immunology Society - Odisha Chapter, at NISER, Bhubaneswar

26-29 April '16 : 2nd Orientation Workshop on Laboratory Animal Sciences - Institute of Life Science ,Bhubaneswar

15 June '16: Symposium on New Horizons in Biology - Indian Institute of Science, Bangalore.

Competitive Exams Faced

IIT-GATE Exam - All India GATE Score 454 in 2019
Joint Graduate Entrance Examination for Biology and Interdisciplinary Life Sciences (JGEEBILS) Qualified
NEST Exam - All India Rank 110 in 2014
Central University, Rajasthan - All India Rank 4 in 2014
OUAT Qualified

Languages

Fluent in English, Hindi, Odia (Native)

Relevant Courses

Molecular Biology
Microbiology
Genetics
Enzymology
Basic Cell Biology
Advanced Cell Biology
Basic Immunology
Advanced Immunology
Evolutionary Biology
Ecology
Bioinformatics
Virology
Immune regulation

Experimental Skills

PCR, qPCR, RTPCR
Agarose Gel Electrophoresis, SDS-PAGE
Molecular Cloning, Genotyping, Sanger Sequencing
DNA and RNA isolation, Buffers and KIT Preparation
Cell culture assays and cells stock maintenance
Protein expression and purification, Column Chromatography
Standardisation and optimization of experimental procedures and products

Computer Skills

Computer:	MS-Office (Powerpoint, Word, Excel)
Familiar OS :	Windows

Awards and Achievements

17-18 Nov '18:	Best oral presentation in OBPC National seminar at NISER, Bhubaneswar
26-29 April '16 :	Oral presentation in Workshop on Laboratory Animal science at Institute of Life Science ,Bhubaneswar
15 June '16:	Symposium on New Horizons in Biology - Indian Institute of Science, Bangalore.
2014-2019:	Inspire Fellowship

Working Experience

Visiting Biology Faculty in Wisdom Institute, Balasore
Research Assistant in Biotech Desk (Gene to Protein), Nacharam, Hyderabad

Summary

An enthusiastic, skillful, smartworking, optimistic individual with umpteen potential and believes in all round development for both the organisation and its employees. I will always contribute my best potential and play an important part in the advancement of the firm.