

Dr. Dinesh Kumar Sahu

Member Secretary-IEC and IRC-PGICH

CDSO Registration No: ECR/1320/Inst/UP/2019

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POSTGRADUATE INSTITUTE OF CHILD HEALTH

(An Autonomous Institute Under Government Of Uttar Pradesh)

Sector-30, Noida, Gautam Budh Nagar, U.P. - 201310

Contact no: +91-8303572822

Email: sahu.d@ssphpgti.ac.in; dinesh23biotech@gmail.com

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EDUCATIONAL QUALIFICATIONS

Postdoctoral: Molecular Biology Unit; Center for Advance Research, King George's Medical University, Lucknow (India).

PhD: Utkal University, Orissa.

WORK EXPERIENCE

1. Research Officer (Permanent employees):
From Aug 2019 working as a "Research Officer" in Post Graduate Institute of Child Health, Noida (<http://www.ssphpgti.ac.in/>).
My responsibility involves:
Member Secretary, Research and Ethics committee
Establishment of BSL2/3 facility (Technical): standardization of REAL TIME based COVID diagnosis test in SSPHPGTI: Till date completed more than 12 lacks samples in our facility.
Establishment of New Advance Genomics and cell biology Research facility for Pediatrics (under processed).
2. National Postdoctoral Fellow – SERB:
From April.2017 to Aug. 2019 working as National Postdoctoral Fellow - SERB, Government of India in Molecular Biology Unit, Center for Advance Research, King George's Medical University-Lucknow (www.kgmu.org).
My responsibility involves:
Differential-expression of the Onco- and Tumor-Suppressor Genes involved in cell fate, survival and genome maintenance in fresh Wilms' tumor samples".
3. Postdoctoral Research Training: *Nov.2013-April.2017*
My responsibility involves:
Technically establish and standardization of 'Center for advance research facility' in KGMU, Lucknow and worked on co-relation between the transcriptome and genome profiling of different solid tumor samples basically; Wilm's, Brain tumors, Lung, Breast and CML from North Indians through CytoScan-HD, 750K array, OncoScan array, SNP array, Expression array (HTA) Axiom Biobank array. Further the identified CNV, SNPs and isoforms/isotranscripts and correlation between the transcriptome and genome profiling are validated through Next generation sequencing technology on PacBio and REAL TIME PCR.
4. Junior Scientist:
From Feb. 2013 to Nov. 2013, worked as a Junior Scientist at Xcelris Genomics-Ahmadabad in Next Generation Sequencing Laboratory (www.xcelrisgenomics.com).
My responsibility involves:
Processed Transcriptome-libraries from Rice, wheat, anther of flower, fungi, Buffalo-sperm, brevicacillus, filarisis, bamboo, etc., meta-transcriptome libraries from soil-sample, buffalo-gut microorganisms and WGS libraries from Rice, wheat, bamboo etc., run on Ion Torrent PGM, Miseq-Illumina platforms, and analyzed these data on different Bioinformatics software.

Achievements till today:

1. Successfully registered IEC, SSPHPGTI from CDSCO and DHR, Gov. of India and processed more than 120 proposals for ethical clearance.
2. Establishment of BSL2 facility (RT PCR COVID facility: Technical) in SSPHPGTI, Noida and till date successfully completed more than 12 lacks samples on RT PCR in our facility.
3. Technically establish and standardization of 'Center for advance research facility' in KGMU, Lucknow.
4. Worked with more than 100 libraries (WGS, WTS, amplicon) for different animals, bacteria, fungi samples, plants, run on ion torrent, Miseq Pac-Bio and Nanopore sequencing Platform, Bioinformatics analysis of data were done.
5. Successfully run and analyzed the more than 500 different types of arrays i.e. CytoScan-HD, 750K, OncoScan, SNP array, Expression array (HTA) Axiom Biobank array etc. from different patient samples.
6. Worked on more than 10 normalization and subtractive EST libraries and analyzed them, REAL TIME expression study of several genes, Database generation for *Labeo rohita*, Sequenced 8,000 clones in ABI- 3031XL genome analyzer (Sanger Sequencing) etc.
7. Slenderized nanostring, Agena and Nanopore technologies in KGMU, Lucknow.

TECHNICAL EXPERTISE

Molecular Biology:

DNA and RNA isolation from different plants, animals, bacteria and fungi samples, Quality check etc., CytoScan - HD, 750K, OncoScan, SNP array, Expression array (HTA) Axiom Biobank array of different Cancers and Hypospadias patient samples on Affymetrix platform, Axiom Biobank array on Gene Titan platform, processing and preparation of different libraries (WGS, WTS, amplicon), analysis on Agilent and LC- GX Bio-analyzers and next generation sequencing on Ion Torrent PGM, Miseq-Illumina and Pacific Biosciences (Pac-Bio) and Nanopore Sequencer from different plants, bacteria and animals samples, n counter; nanostring and REAL TIME PCR for expression study, PCR, RT-PCR, PAGE, cloning and expression, transfection on cell lines, immuno-precipitation, western blotting, immuno-staining (Confocal), recombinant protein purification, cryopreservation, maintenance of animal tissue culture, automated DNA sequencing, cDNA preparation, normalization and subtraction of the cDNA, RACE PCR, expression on pQE vector, pET vector, CMVflag vector, pGEX- 6P-1 vector.

Bioinformatics:

Microarray data analysis (i.e., CHAS, Nexus, Transcriptome Analysis Console, etc.), De novo assembly by different bioinformatics pipelines, Function annotation (Gene Ontology) by Bioinformatics software (i.e., Blast2Go, CGO etc.) Pathways analysis (i.e., KASS, KEGG etc.), REAL TIME data analysis by different software, Microsatellite and SNP analysis (i.e., perl script programme MISA etc), nCounter Nanostring data analysis etc.

Projects as PI and Co-PI

1. Principal Investigator: National Postdoctoral Fellow – SERB: 19,00,000/-
From 2017 to 2019: Differential-expression of the Onco- and Tumor-Suppressor Genes involved in cell fate, survival and genome maintenance in fresh Wilms' tumor samples.
2. Co-Principal Investigator: ICMR project: 20,00,000/-
From 2021 to 2023: Rajyoga Meditation based Healing laboratory for reducing stress, anxiety and faster recovery in Paediatric subset following elective surgery.
3. Principal Investigator: Intramural
miRNA profiling from Circulating Nucleic Acids in north Indian Childhood Acute lymphoblastic leukemia (ALL) and acute myeloid leukemia (AML) cases: a prospective study

LIST OF PUBLICATIONS: Cumulative Impact Factor: 55.1; Citations: 200, h-index: 9

Book:

1. Dinesh Kumar Sahu. (2016) Development, analysis and annotation of Expressed Sequence Tag (ESTs); LAP LAMBERT Academic Publishing; ISBN-13: 978-3-659-91222-1, ISBN-10: 3659912220. EAN: 9783659912221.

Journals:

First Author Contribution:

1. Mukul Kumar Singh, Mayank Jain, Hari Shyam, Dinesh Kumar Sahu, Archana Mishra, Pratap Shankar, Shailendra Kumar, vishwajeet singh. Association of severity and mortality of Covid- 19 cases among acute kidney injury and sexual dimorphism" molecular biology report; DoI (10.1007/s11033-022-07308-1) (Impact factor: 3.0)..
2. Pradhan SK, Sahu DK, Singh NR, Kumar U and Thatoi H (2022) Unveiling of metal-tolerance bacterial consortia in chromite mine by metagenomic approaches. Research Square (Communicated in Scientific Report).
3. Neetu Singh, Dinesh Kumar Sahu, Ratnesh Kumar Tripathi, Archana Mishra, Hari Shyam, Pratap Shankar, Mayank Jain, Nawazish Alam, Anil Kumar Devendra Kumar Gupta, Madan Lal Brahma Bhatt and Ravi Kant. (2020). Differentially expressed full-length, fusion and novel isoforms transcripts-based signature of well-differentiated Keratinized oral squamous cell carcinoma. *Oncotarget*, Vol. 11, (No. 34), pp: 3227-3243, DOI: <https://doi.org/10.18632/oncotarget.27693>. Equal First Author Contribution. (Impact factor: 5.168).
4. Neetu Singh N, Dinesh Kumar Sahu, Archana Mishra, Margaret Linan, Bianca Argente, Julia Varkey, Niranjan Parida, Rebecca Chowdhry, Hari Shyam, Nawazish Alam, Shivani Dixit, Pratap Shankar, Abhishek Mishra, Avinash Agarwal, Chris Yoo, Madan Lal Bhatt, Ravi Kant. (2018) Differential genomics and transcriptomics between tyrosine kinase inhibitor sensitive versus resistant BCR-ABL dependent chronic myeloid leukemia. *Oncotarget*, 9:30385 30418, <https://doi.org/10.18632/oncotarget.25752>. Equal First Author Contribution. (Impact factor: 5.168).
5. Dinesh Kumar Sahu, Soumya P. Panda, Prem K. Meher, Paramananda Das, Padmanav Routray, Jitendra K.Sundaray, Pallipuram Jayasankar and Samiran Nandi. (2015) Construction, de-novo assembly and analysis of transcriptome for identification of reproduction-related genes and pathways from a seasonal breeding carp rohu, *Labeo rohita* (Hamilton). *PlosOne* 10(7): e0132450. doi:10.1371/journal.pone.0132450. (Impact Factor: 3.54).
6. Dinesh Kumar Sahu, Soumya P. Panda, Sujata Panda, Paramananda Das, Prem K. Meher, Rupenangshu K. Hazra, Eric Peatman, Zhanjiang J. Liu, Ambekar E. Eknath and Samiran Nandi. (2013). Identification of reproduction-related genes and SSRmarkers through expressed sequence tags analysis of a seasonal breeding carp rohu, *Labeo rohita* (Hamilton) 524, 1–14. doi:10.1016/j.gene.2013.03.111. *Gene* (Impact factor: 3.6).

Second Author Contribution:

7. Neetu Singh, Dinesh Kumar Sahu, Archana Mishra, Preeti Agarwal, Madhumati Goel, Anil Chandra, Sunil Kumar Singh, Chhitij Srivastava, Bal Krishna Ojha, Devendra Kumar Gupta, Ravi Kant. (2016) Multiomics approach showing genome-wide copy number alterations and differential gene expression in different types of North-Indian pediatric brain tumors. *Gene*, 1;576 (2 Pt 2):734-42. doi:10.1016/j.gene.2015.09.078. *Gene* (Impact factor: 3.6).
8. Neetu Singh, Dinesh Kumar Sahu, Madhumati Goel, Ravi Kant, Devendra K Gupta. (2015) Retrospective analysis of FFPE based Wilm's Tumor samples through Copy Number and Somatic Mutation related Molecular Inversion Probe Based Array. *Gene*, 565(2):295-308. doi: 10.1016/j.gene.2015.04.051. *Gene* (Impact factor: 3.6).
9. Neetu Singh, Dinesh Kumar Sahu, Parth Purwar, Sanjeev Gupta, Raghubendra Singh Dagur, Anil Kumar Tripathi, Jaya Dixit, Ravi Kant, Devendra Kumar Gupta. (2015) Study of CGH array on patient with Amelogenesis Imperfecta, Jalili Syndrome, Situs Inversus and oligozoospermia. *Journal of Genetic Disorders & Genetic Reports*, 4:1 doi.org/10.4172/2327-5790.1000122. (Impact Factor: 0.61).
10. Neetu Singh, Dinesh Kumar Sahu, Rebecca Chowdhry, Archana Mishra, Madhu Mati Goel, Mohd Faheem, Chhitij Srivastava, Bal Krishna Ojha, Devendra Kumar Gupta, Ravi Kant. (2016) IsoSeq analysis and functional annotation of the infratentorialependymoma tumor tissue on PacBio RSII platform. *MetaGene*, 23;7:70-5. 10.1016/j.mgene.2015.11.004. (Impact factor:0.88).

Third and forth Author Contribution:

11. Neetu Singh, Archana Mishra, Dinesh Kumar Sahu, Mayank Jain, Hari Shyam, Ratnesh Kumar Tripathi, Pratap Shankar, Anil Kumar, Nawazish Alam, Riddhi Jaiswal, Shailendra Kumar. (2020). Comprehensive Characterization of Stage IIIA Non-Small Cell Lung Carcinoma. Volume: 12 Pages: 11973 DOI: 10.2147/CMAR.S279974. Cancer management and research (Impact factor: 3.0).
12. Archana Mishra, Neetu Singh, Hari Shyam, Mayank Jain, Dinesh Kumar Sahu, Pratap Shankar, Nawazish Alam, Anil Kumar, Riddhi Jaiswal, Shailendra Kumar. (2020). Differential expression profiling of transcripts of IDH1, CEA, Cyfra21-1, and TPA in stage IIIa non-small cell lung cancer (NSCLC) of smokers and non-smokers cases with air quality index. Volume 766 Pages 145151 DOI: 10.1016/j.gene.2020.145151. Gene (Impact factor: 3.6).
13. Ravi Shankar, Nita Radhakrishnan, Seema Dua, Satyam Arora, Megha Rana, Dinesh Kumar Sahu, Sumit Rai, Devendra Kumar Gupta. (2020). Convalescent plasma to aid in recovery of COVID-19 pneumonia in a child with acute lymphoblastic leukemia. Pages 102956 DOI: 60(1):102956. 10.1016/j.transci.2020.102956, Journal Transfusion and Apheresis Science (Impact factor: 1.38).
14. Akhilanand Chaurasia, Neetu Singh, Dinesh K Sahu, Archana Mishra. (2019). Comparative Evaluation of role of Lysyl oxidase gene (LOXG473A) expression in pathogenesis and malignant transformation of Oral Submucous Fibrosis. Journal Journal of clinical and experimental dentistry Volume 11 Issue 10 Pages e858 DOI: 10.4317/jced.55980 (Impact factor: 0.43).
15. Sarika Jaiswal, Samiran Nandi, Mir Iquebal, Rahul Jasrotia, Sunita Patra, Gayatri Mishra, Uday Udit, Dinesh Kumar Sahu, U Angadi, Prem Meher, Padmanav Routray, Jitendra Sundaray, Dhananjay Verma, Paramananda Das, Pallipuram Jayasankar, Anil Rai, Dinesh Kumar. (2021). Revelation of candidate genes and molecular mechanism of reproductive seasonality in carp fish (*Labeo rohita* Ham) by RNA sequencing. 10.21203/rs.3.rs-118092/v1 DOI: 10.21203/rs.3.rs-118092/v1. BMC Genomics. (Impact factor: 3.9).
16. Rebecca Chowdhry, Neetu Singh, Dinesh Kumar Sahu, Ratnesh Kumar Tripathi, Archana Mishra, Anjana Singh, Indrashis Mukerjee, Nand Lal, Madan Lal Brahma Bhatt, Ravi Kant. (2018) Dysbiosis and variation in predicted functions of the granulation tissue microbiome in HPV positive and negative severe Chronic Periodontitis. BioMed Research International Article (Impact factor: 2.476).
17. Rebecca Chowdhry, Neetu Singh, Dinesh Kumar Sahu, Ratnesh Tripathi, Archana Mishra, Anjana Singh, Hari Shyam, Nand Lal, Madan Lal Brahma Bhatt and Ravi Kant. (2018) 16s rRNA long read sequencing of the granulation tissue of non-smokers and smokers severe Chronic Periodontitis patients. BioMed Research International Article ID 4832912, <https://doi.org/10.1155/2018/4832912> (Impact factor: 2.476).
18. Devendra Kumar Gupta, Neetu Singh, Dinesh Kumar Sahu. (2014) TGF- β mediated crosstalk between Malignant Hepatocyte and Tumor Microenvironment in Hepatocellular Carcinoma: A potential target for systemic therapy. Cancer Growth and Metastasis, 7, 1–8. doi:10.4137/CGM.s14205. (RG Journal Impact: 4.58 *).
19. S. Tripathy , R. Sen , S.K. Padhi , Dinesh Kumar Sahu, S. Nandi , S. Mohanty , N.K.Maiti. (2014) Survey of the transcriptome of *Brevibacillus borstelensis* exposed to low temperature shock. Gene, 550, 207–213. doi:10.1016/j.gene.2014.08.030. (Impact Factor: 3.6).
20. Neetu Singh, Devendra Kumar Gupta, Shilpa Sharma, Dinesh Kumar Sahu, Archana Mishra, , Devendra Kumar Yadav, Jiledar Rawat, Arun Kumar Singh , Margaret Linan, Chris Yoo. (2018) Single-nucleotide and Copy-number variance related to severity of Hypospadias. Pediatric Surgery International, 34(9):991-1008 <https://doi.org/10.1007/s00383-018-4330-5> (Impact factor:1.476).
21. Neetu Singh, Umesh Pratap Verma, Rebecca Chowdhury, Archana Mishra, Dinesh Kumar Sahu, Ashutosh Shrivastava, Nandlal and Ravi Kant. (2016) Enumeration and Characterization of Mesenchymal Stem Cells from Age-dependent Human Dental Tissue. Journal of Stem Cell Research & Therapy; 6; 9. doi: 10.4172/2157-7633.1000359. (Journal Impact Factor: 2.76*).
22. Poonam Motiani, P K Sharma, Arpita Gupta, Mukal k jain, D K Sahu. Current practice and attitudes regarding the perioperative use of cuffed tracheal tubes for periatric and neonatal tracheal intubation: a servay based evaluation among indian anesthesiologies. The indian Anaesthetists forum.

NCBI DATABANK SUBMISSION

1. Transcripts of *infratentorial ependymoma* tumor tissue have been submitted to the NCBI/SRA under accession no. SUB1031314.
2. Affymetrix Human Transcriptome array data of BCR-ABL samples in 46 Chronic Myeloid Leukemia cases in NCBI, GEO accession number; GSE77191.
3. 3Affymetrix Oncoscan array data of BCR-ABL samples in 46 Chronic Myeloid Leukemia cases in NCBI, GEO accession number; GSE77571.
4. 4,600 ESTs from *Labeo rohita* have been submitted to the NCBI dbEST database.
5. Transcripts from *Labeo rohita* have been submitted to the NCBI SRA database (accession number: SRA051586).

International/National Meetings organize

1. Organized the "International Pediatric colorectal club 2020 congress" at Super Speciality Paediatric Hospital & Post Graduate Teaching Institute, Noida, India (12-14 Dec 2020) as Member of Local Organization committee, SSPHPGTI, Noida.
2. Organized the first Indo-**UK training workshop on "Current Trends in Genomic and Molecular Medicine"** at Molecular Biology Unit, Center for Advance Research King George's Medical University, Lucknow, UP, India (19-21 November 2018) as Member of Local Organization committee, KGMU, Lucknow.
3. Resource faculty at AIIMS Rishikesh in "symposium on Genomic based future health perspective" on 26 March 2018.
4. Organized International symposium on "Applicability of Genomics Technologies in Oncology and Constitutional Genetic Disorders" at Molecular Biology Unit, Center for Advance Research King George's Medical University, Lucknow, UP, India (14th October 2016) Member of Local Organization committee, KGMU, Lucknow.

AREAS OF INTEREST:

Molecular biology, Functional genomics and Cell biology.