



# NATIONAL INSTITUTE OF BIOLOGICALS NEWSLETTER

Issue 4 : October - December, 2024



**'BEST STALL' award won by NIB in the event**

**'Rise in Jammu and Kashmir 2024'**



As we conclude the final quarter of 2024, I take immense pride in reflecting on the achievements and advancements made at the National Institute of Biologicals (NIB). This period has been marked by significant strides in quality control, research, and regulatory oversight, reinforcing our commitment to safeguarding public health.

This quarter has also been notable for awards and recognitions, with NIB securing the Best Stall Award at "Rise in Jammu & Kashmir 2024". Additionally, I am proud to share that NIB has been recognized as one of the best performers of the National Learning Week, Karmayogi Saptah (19<sup>th</sup> – 27<sup>th</sup> October, 2024). These achievements underscore our commitment to continuous learning, professional development, and excellence in public service. The participation of our experts in global discussions on pharmaceutical regulations, diagnostics, and medical device quality assurance highlights our leadership in the field. NIB's laboratories have standardized 3 new Biologicals during this quarter taking the total number of Biologicals tested to 308.

A key focus for us has been capacity building and training. Through National Skill Development & hands-on Training Programs and Structured Laboratory technique specific trainings, we have empowered future scientists, fostering excellence in quality control and biopharmaceutical research. Through a series of scientific lectures, leadership programs, and technical training, we have strengthened the knowledge and skills of our scientists, ensuring they remain at the forefront of biomedical advancements.

I extend my gratitude to our dedicated team of scientists, researchers, and administrative staff whose unwavering efforts continue to uphold the institute's reputation as a pioneer in assuring quality of biologicals.

As we step into a new year, let us continue our pursuit of excellence, innovation, and service to public health, ensuring that the National Institute of Biologicals remains a trusted pillar in the healthcare ecosystem.

**Dr. Neelima Mishra**



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## Editorial Team

Dr. Charu M. Kamal	Ms. Sudha V. Gopinath	Dr. Rajesh Kumar Sharma	Dr. Saurabh Sharma
Editor	Associate Editor	Associate Editor	Associate Editor



# The Role of National Control Laboratories (NCLs) in Ensuring Safety and Trust

**Ms. Shalini Tewari**

*(Ms. Shalini Tewari, Scientist Grade-III, has over 30 years of expertise in QC testing of biological products at NIB. As Head of the Quality Management Unit, she leads accreditation activities to maintain ISO/IEC 17025 compliance across NIB labs, ensuring excellence and compliance in quality and regulatory standards. She with her team led NIB to win the prestigious Prof. S.K. Joshi Laboratory Excellence Gold Award in Testing, instituted by the Quality Council of India, recognizing outstanding achievements in quality services)*



In the ever-evolving realm of modern medicine, an unsung hero works tirelessly behind the scenes to safeguard public health. Across the country, from bustling cities to remote villages, biological and immunobiological products, life-saving biotherapeutics, diagnostic tools, vaccines, and plasma-derived therapies reach hospitals and clinics. These products represent hope, science, and innovation. Yet ensuring they meet the highest standards of safety, efficacy, and quality requires an independent and steadfast guardian: the National Control Laboratories (NCLs).

The origins of biological standardization and the control of therapeutic products date back to the work of Paul Ehrlich in Germany in the 1890s, as Director of the State Institute for Serum Research and Control in Berlin. Ehrlich devised a system for routine batch testing and evaluation, comparing each batch with a standard of known potency. This foundation solidified the importance of quality for all regulatory bodies overseeing biological products.

Quality is paramount for consumer trust, especially in the healthcare sector, where reliability, robustness, ease of use, and absence of deficiencies are non-negotiable. A robust Quality Control (QC) program is fundamental not only to maintaining regulatory standards but also to ensuring manufacturers successfully meet global market expectations.

The need for regulation stems from the inherent information asymmetry between biological manufacturers and consumers, including medical practitioners. While manufacturers possess detailed knowledge about the products, consumers and healthcare providers are often unable to assess the quality independently. In this context, NCLs act as the gatekeepers of public health, independently testing products that form the backbone of modern medicine. From insulin and monoclonal antibodies to diagnostic kits, vaccines, and plasma-derived products, NCLs do more than verify compliance, they ensure safety and effectiveness through rigorous, unbiased testing, building trust among all stakeholders: manufacturers, healthcare providers, regulators, and, most importantly, the public.

The knowledge that an independent body rigorously tests these products instils a sense of responsibility among manufacturers, encouraging them to uphold the highest standards. This oversight sets a clear benchmark for quality and acts as a safeguard, discouraging leniency. Without such oversight, lapses in quality could jeopardize public health and erode trust.

Looking back, we see a time when pharmaceutical innovation outpaced regulatory frameworks. While medical breakthroughs promised cures, the absence of independent, rigorous testing meant that lapses in quality could easily go unnoticed, risking public health. The razor-thin margin for error in Biologicals and Immunobiologicals stems from their complexity, the sensitivity of their production processes, and the critical need to ensure patient safety, particularly for vulnerable populations. This recognition underscored the need for independent testing and led to the establishment of NCLs, tasked with ensuring that every product meets national and international standards. Products deemed "Not of Standard Quality" are withheld from the market, ensuring patient safety and safeguarding public health.

In NCL's well-equipped laboratories, scientists perform meticulous evaluations. Each product undergoes a series of precise tests, ensuring adherence to stringent quality benchmarks. Every test result is independent and unbiased, forming the backbone of regulatory compliance.

The value of such independent oversight is profound. It builds public confidence, fosters accountability, and ensures that safety and quality are never compromised. Manufacturers are motivated to maintain the highest standards, knowing their products will be scrutinized, reinforcing a culture of quality.

For manufacturers, NCLs provide assurance that their products meet stringent regulatory standards and are ready for market trust. For healthcare professionals, NCLs provide confidence in the tools and treatments they use daily. For the public, NCLs ensure that every vial, kit, and therapy is reliable, saving lives and improving health.

Through their unwavering dedication, NCLs bridge the gap between scientific innovation and public health, ensuring that every biotherapeutic, diagnostic, vaccine, and plasma-derived product serves its intended purpose. Their story is one of vigilance, expertise, and commitment- a testament to how independent testing safeguards humanity.

## References :

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2. Thomas Morrow and Linda Hull Felcone. Biotechnology Healthcare 2004 Sep; 1(4): 24-26, 28-29. Defining the difference: What Makes Biologicals Unique.
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4. Mari'a L. Pombo, Jose' L. Di Fabio, Mari'a de los A. Corte's. Biologicals 37 (2009) 271-276 Review of regulation of biological and biotechnological products in Latin American and Caribbean countries.
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6. Longstaff C1, Whitton CM, Stebbings R, Gray E. Drug Discovery Today. 2009 Jan; 14 (1-2):50-5. How do we assure the quality of biological medicines?
7. Gannu Praveen Kumar. Quality Control Issues In The Pharmaceutical Industry (<http://www.indus.org/healthcare/Scientific%20Sessions/Dr.%20G.%20Praveen%20Kumar%20%20Quality%20Control%20Issues%20in%20Pharmaceutical%20Industry.pdf>)
8. Cara N. Wilder, Ph.D., Elizabeth Kerrigan. American Pharmaceutical Review December 10, 2012. The Importance of Quality Control in the Production of Parenteral Drugs.

## NIB won the Best Stall award in the prestigious event 'Rise in Jammu and Kashmir 2024'

National Institute of Biologicals, Noida participated in the event of "Rise in Jammu & Kashmir 2024" at Jammu, J&K held on 03<sup>rd</sup> – 05<sup>th</sup> October, 2024. The event registered participation of several major participants from ministry and PSUs such as ISRO, DRDO, CWC, CSIR, CDAC, NHP, COIR Board, PowerGrid, ICAR, ICMR, BIS, IWAI, GSI, etc. Dr. Hemant Kumar Verma (Scientist Grade-II), Dr. Paras Jain (Junior Scientist), Shri Ajay Kumar Ade (Junior Scientist) and Shri Nikhil Pratap Singh (Assistant-II) participated in the event on behalf of NIB, NOIDA. The event highlighted the exhibitions of government functioning in different aspects of country's building economy. Apart from industry participation, huge interest of youth from local schools and colleges was also registered at the event. The event concluded on 05<sup>th</sup> October, 2024 with National Institute of Biologicals winning the "BEST STALL" award. The award was facilitated by Er. Gulam Ali, Member of Parliament (Rajya Sabha).

## Participation in 19<sup>th</sup> International Conference of Drugs Regulatory Authorities (ICDRA 2024) organized by Central Drugs Standard Control Organization (CDSCO)

Dr. Charu Mehra Kamal, Scientist Grade - I, Dr. Gauri Misra, Scientist Grade - I, Dr. Ratnesh Kumar Sharma, Scientist Grade – II, Dr. Meena Kumari, Scientist Grade - II , Dr. Hemant Kumar Verma, Scientist Grade - II, Ms. Gurminder Bindra, Scientist Grade - III, Mrs. Rashmi Shrivastava, Scientist Grade - III, Mrs. Y. Madhu, Scientist Grade - III, Dr. Saurabh Sharma, Scientist Grade – III and Dr. Sanjay Mendiratta, Scientist Grade – III participated as exhibitors, for showcasing various activities like process, services undertaken at NIB, in 19<sup>th</sup> International Conference of Drugs Regulatory Authorities (ICDRA 2024) organized by Central Drugs Standard Control Organization (CDSCO) at Yashobhoomi, IICC, Dwarka Sector 25, Delhi from 14<sup>th</sup> - 18<sup>th</sup> October, 2024.



## NIB as one of the Best performers of National Learning Week

NIB was recognized as one of the best performers, with 81.08% completing a minimum of 4+ training hours in iGOT Platform. The institute was commended for its efforts in supporting Mission Karmayogi, vide letter from Ms. V. Hekali Zhimomi, IAS, Additional Secretary, Ministry of Health & Family Welfare, appreciating the institute's participation in National Learning Week (NLW) held from 19<sup>th</sup>-27<sup>th</sup> October, 2024.

## Workshop under EQAS (External Quality Assessment Scheme) for distribution of HIV proficiency test panel for HIV serology

One day workshop under EQAS (External Quality Assessment Scheme) for distribution of HIV proficiency test panel for HIV serology (Round 1, 2024-25) to State Reference Laboratories of Uttar Pradesh and Uttarakhand by NACO-NRL, NIB was held on 25<sup>th</sup> October, 2024. Technical Officers of 10 SRLs participated in the program which was presided by Head - IDKL and NRL In-charge and joined by Dr. Rakesh Rai, Deputy Director UPSACS.





## Certificate of Excellence

Dr. Gauri Misra, Scientist Grade - I received a certificate of excellence from Director-General ICMR, for showcasing Innovation titled “Allele-Specific primer probe sets for the rapid and Accurate Diagnosis & Differentiation of Omicron & Delta Variant of SARS-CoV-2” at DHR-ICMR Health Research excellence Summit 2024 on 14<sup>th</sup> November, 2024.

## Gazette notification CG-DL-E-11122024-259336 dated 10.12.2024.

Ms. Kanchan Ahuja, Scientist Grade-II & Dr. Pankaj K. Sharma, Scientist Grade-II notified as Medical Device Testing Officer (MDTO) vide Gazette notification CG-DL-E-11122024-259336 dated 10.12.2024.

## Meeting on Quality Control testing of Rabies Vaccine samples from domestic manufacturers at NIB, Noida

A series of discussions were held at CDSCO on 4<sup>th</sup> and 12<sup>th</sup> November, 2024 (virtual mode) to address the sample requirements from indigenous manufacturers of the Rabies vaccine. It was decided that a percentage of domestically produced Rabies vaccine samples, currently tested at CDL, Kasauli, will also be sent to NIB, Noida, for quality control testing.

Additionally, NIB NOIDA will initiate qualification and validation procedures for testing newer vaccines, including the Haemophilus influenzae type b vaccine and the Meningococcal vaccine.

## Quality Assurance / Quality Control of Bio-Therapeutics, Prophylactics and In-Vitro Diagnostics

1. Recombinant Products laboratory has released the Certificate of Analysis of a new anti-diabetic molecule Semaglutide tablets received in NIB for the first time.
2. Blood Products Laboratory submitted Comments on draft Monograph for Human Fibrinogen to IPC, Ghaziabad
3. Dr. Meena Kumari, Scientist Grade-II and Mr. Tara Chand, Scientist Grade-III participated in joint inspection with CDSCO for the grant of permission in Form CT-11 to manufacture Recombinant Human Albumin-20% Drug Substance and Recombinant Human Albumin 5%, 10% and 20% albumin in 50mL/100mL fill volumes-Drug Product at manufacturing facility of M/s Shilpa Biocare Private Limited (100% Export Oriented Unit), Dist. Yadgir, Karnataka, India for the purpose of examination, test and analysis from 28<sup>th</sup> – 29<sup>th</sup> November, 2024.

## Nomination/ Participation of NIB Scientists in various Meetings/ Workshops/ Conferences / Seminars

1. Ms. Kanchan Ahuja, Scientist Grade - II & Dr. Pankaj Kumar Sharma Scientist Grade - III participated in ASSOCHAM Conference on Diagnostics organized by The Associated Chambers of Commerce & Industry of India at Hotel Lalit, Barakhamba Road, New Delhi – 110001 on 1<sup>st</sup> October, 2024.
2. Dr. Gauri Misra, Scientist Grade - I, attended 'Life Sciences Start-up Summit' as an expert in the panel on Novel Innovations addressing Healthcare Demands: “The Significance of Health Research and Quality Control Regulation” from 4<sup>th</sup> – 5<sup>th</sup> October, 2024 at Institute of Life Sciences (ILS-DBT), Bhubaneswar supported by Biotechnology Industry Research Assistance Council (BIRAC), DST, Govt. of India.
3. Dr. Gauri Misra, Scientist Grade - I attended the 40<sup>th</sup> National Reference Laboratory (NRL) Workshop, held in hybrid mode from 7<sup>th</sup> – 9<sup>th</sup> October, 2024 in Melbourne, Australia.
4. Dr. Gauri Misra, Scientist Grade-I, as an expert virtually attended “The first hub BIRAC meeting” organized by DBT BIRAC on 8<sup>th</sup> November, 2024.
5. Dr. Hemant Kumar Verma, Scientist Grade - II attended “Training Session for all Procuring Entities of Ministry of Health & Family Welfare by IEMs for implementation of Integrity Pact” organized by Ministry of Health & Family Welfare Department of Health & Family Welfare [Procurement-I (EPW) Section] on 8<sup>th</sup> October, 2024 through VC mode.
6. Ms. Sudha V. Gopinath Scientist Grade - II, Ms. Shalini Tewari, Scientist Grade - II and Dr. Subhash Chand, Scientist Grade - III attended joint EDQM-USP webinar on “Overcoming obstacles in establishing pharmacopoeial reference standards: insights from case studies” held on 10<sup>th</sup> October, 2024.
7. Dr. Shikha Yadav, Scientist Grade - I was invited ad hoc specialist by Dr. Montip Gettayacamin, Regional Director for Southeast Asia, AAALAC International for performing site visit of one unit on 10<sup>th</sup> October, 2024 to assess their institutional animal care and use program for AAALAC accreditation purposes.

8. Dr. Meena Kumari, Head, BPL was invited as an expert member for the meeting of the UG/PG Board of Studies held on 15<sup>th</sup> October, 2024 at Department of Biotechnology, UIET, KUK, Kurukshetra (on line mode).
9. Dr. Gauri Misra, Scientist Grade - I, as an external expert attended the 2<sup>nd</sup> and 3<sup>rd</sup> Project Review Group Committee (PRG) meeting held at ICMR (HQ) on 18<sup>th</sup> October, 2024 and 12<sup>th</sup> December, 2024 respectively.
10. Dr. Gauri Misra, Scientist Grade - I, as an external expert, virtually attended the 22<sup>nd</sup> TAC Meeting of MedTech Mitra, which was initiated on 23<sup>rd</sup> October, 2024 and 11<sup>th</sup> November, 2024.
11. Dr. Ratnesh Kumar Sharma, Scientist Grade - II was nominated to attend 'Capacity Building Programme on Preventive Vigilance' in Ministry of Health and Family Welfare, Nirman Vihar, New Delhi on 28<sup>th</sup> October, 2024.
12. Dr. Gauri Misra, Scientist Grade - I as an expert virtually attended "The malaria IVD Performance Evaluation protocol review meeting" of the ICMR appointed Working Group organized by ICMR Headquarters on 5<sup>th</sup> November, 2024.
13. Dr. Shikha Yadav Scientist Grade-I has been nominated as the main CPCSEA Nominee in the IAEC of Galgotias University, Greater Noida by CCSEA and she attended their IAEC meeting for review and approval of their research protocols and also performed annual inspection of their Animal House on 13<sup>th</sup> November, 2024.
14. Dr. Gauri Misra, Scientist Grade - I, as an expert virtually attended "The technical working group meeting to conduct a landscape review of diagnostic kits for priority emerging infectious disease" organized by National one Health Programme for prevention and control of Zoonosis, National Center for Disease Control, New Delhi on 14<sup>th</sup> November, 2024.
15. Dr. Gauri Misra, Scientist Grade - I delivered a keynote lecture at the workshop "Gel to gene mastering PCR prime design and Electrophoresis" on the topic "PCR as a frontline method for Molecular Diagnostics" organized by Gautam Buddha University, Greater Noida, U.P. on 20<sup>th</sup> November, 2024.
16. Dr. Gauri Misra, Scientist Grade-I, an external expert has virtually attended a meeting with respect to Clarification of the point raised by Hemogenomics Pvt. Ltd., on the tender notice for implementation of NAT Technology in IRCS Blood Center on 19<sup>th</sup> November, 2024.
17. Dr. Hemant Kumar Verma, Scientist Grade - II attended, as expert member, the meeting for "Deliberation of the representations received in the GeM portal as well through email for the procurement of Desktop Computers (Qty-350) for ICMR Headquarters, New Delhi" on 21<sup>st</sup> November, 2024 through VC mode.
18. Dr. Gauri Misra, Scientist Grade-I, was invited as a speaker by IIT Delhi, Department of Biomedical Engineering on Pre-Market Compliance Workshop organized by mPragati on 5<sup>th</sup> December, 2024 and delivered a lecture on "Fundamental of In-vitro Diagnostics Testing Methodology for Developing Regulation-Compliance IVDS".
19. Dr. Manjula Kiran, Scientist Grade - III, Vaccine & Antisera Lab was invited to deliver a talk at the 50<sup>th</sup> Conference of Association of Clinical Biochemists of India (ACBICON) 2024 organized by Department of Biochemistry, PGIMER, Chandigarh from 4<sup>th</sup>-7<sup>th</sup> December, 2024. She presented a talk on "Quality Control Testing of Biologicals: An Important Step for a Molecule from Laboratory (API) to Life (Finished Product)".
20. Dr. Gauri Misra, Scientist Grade - I, as an expert, attended "The first hub BIRAC meeting" organized by DBT BIRAC on 6<sup>th</sup> December, 2024.
21. Dr. Shikha Yadav, Scientist Grade-I has been nominated as a member of IAEC Committee of MAX PETZ Hospital Pvt. Ltd. by CCSEA, Ministry of Fisheries, Animal Husbandry and Dairying and she attended their IAEC meeting on 11<sup>th</sup> December, 2024 for review and approval of their research proposals.





22. Dr. Hemant Kumar Verma, Scientist Grade - II attended, as expert member, “The ICMR pre-bid meeting for the Procurement of Desktop Computers (89 Nos.) at ICMR – NIMR” on 19<sup>th</sup> December, 2024 through VC mode.
23. Mr. Jaipal Meena, Scientist Grade - III, Vaccine & Antisera Lab presented a poster entitled “Indigenous Development of an Immunoassay for Precise Detection of Total Immunoglobulin Against Rabies in Post-Vaccination Serum” at National Conference on Advanced Materials for Sensor, Under the Series “Sensor for Society” on 19<sup>th</sup> December, 2024 at Jawaharlal Nehru University, New Delhi.
24. Ms. Sudha V. Gopinath Scientist Grade - II, participated in a virtual meeting organised by Training Division, Ministry of Health and Family Welfare held on 20<sup>th</sup> December, 2024. The meeting was called on to review the progress of courses to be developed by partner Institutions as per Annual capacity Building Plan of MoHFW for year 2024-25.
25. Sh. Q. W. Zaheeruddin -Deputy Director (Admin) and Ms. Sudha V. Gopinath Scientist Grade -II participated in a virtual meeting organised by Training Division, Ministry of Health and Family Welfare held on 23<sup>rd</sup> December, 2024. The meeting was called on to review the progress of formulation of Capacity Building Plan (CBP) and establishment of Capacity Building Unit (CBU).



## TRAININGS

1. A Lecture cum Interaction session on “SciFlow- an innovative writing and publishing platform for scientific publishing” was held in Hybrid mode on 15<sup>th</sup> October, 2024 at NIB.
2. Dr. Swati Shalini, Junior Scientist attended “2-Day Capsule Course on Medical Device Quality and Risk management” held during 21<sup>st</sup> – 22<sup>nd</sup> October, 2024 at National Institute of Training for Standardisation; Noida conducted by Bureau of Indian Standards.
3. One-day Laboratory visit of 31 students including M. Tech. - Biotechnology, M.Sc. Microbiology & PhD scholars from Jaypee Institute of Information Technology (JIIT) Noida, was held on 6<sup>th</sup> November, 2024 at NIB.
4. Two weeks residential National Skill development and Training (NSDT) programme on “Quality Control of Biologicals” for 38 M.Sc. Biotechnology Students from Shaheed Mahendra Karma Vishwavidyalaya, Bastar, (Chhattisgarh) and Himachal Pradesh University, Shimla, (Himachal Pradesh) was held at NIB from 18<sup>th</sup> – 29<sup>th</sup> November, 2024.
5. Lecture cum Interaction Session on “Smart Sensing platforms for SARS-COV-2” governed with a special talk by Dr. Sonu Gandhi (Scientist-E, National Institute of Animal Biotechnology NIAB, Department of Biotechnology, (Ministry of Science and Technology, Government of India) was held on 26<sup>th</sup> November, 2024 at NIB.
6. Lecture cum Interaction Session on “Procurement in Scientific Research” governed with a special talk by Mrs. Rekha Saxena Scientist-G, National Institute of Cancer Prevention and Research, Noida Indian Council of Medical Research (ICMR), Ministry of Health and Family Welfare was held on 29<sup>th</sup> November, 2024 and 27<sup>th</sup> December, 2024 at NIB.
7. Five days training titled “Ethical use & care of laboratory animals in research and regulatory testing” for 13 participants from various universities held from 2<sup>nd</sup> - 6<sup>th</sup> December, 2024 was conducted at In vivo bioassay and Animal facility, NIB.
8. Sh. Deepak Mahajan (Junior Program Officer) and Sh. Nikhil Pratap Singh (Assistant-II) attended One-day workshop on Content Creation and Monitoring MoHFW Courses on IGOT Platform under Mission Karmayogi at NIHFW, New Delhi held on 06<sup>th</sup> December, 2024.
9. Sh. Deepak Mahajan (Junior Program Officer) and Sh. Nikhil Pratap Singh (Assistant-II) attended an Online CERT-In's training program on "Cyber Crisis Management Plan (CCMP)" on 20<sup>th</sup> December, 2024.



10. Dr Jyoti Sharma, Scientist Grade – III, Dr. Swati Shalini, Junior Scientist and Mr. Subhash Kumar, Junior Scientist attended 3 days training programme on “Mass Spectrometry Based Multi-Attribute Monitoring of Post-translational Modifications in Biopharmaceuticals”, “Recent Advances in Higher Order Structure Characterization of Biopharmaceuticals” and “Impact of Formulation on Stability of Biopharmaceuticals” at the 2024 CBT Course Series, IIT-Delhi.
11. Lectures organized under National Learning week at NIB - i) Basics & principle of volumetric analysis by Dr J. P. Prasad, ex-DD(QC), NIB, ii) Application of Statistical Tools in Biomedical Research by Dr. D. K. Yadav (Faculty, Head Dept. of Statistics & Demography) NIHF New Delhi, iii) Stress Management by Dr. Vinay Sharma (professional Corporate Trainer & Senior Adviser), iv) Leadership and team management by Dr. Nidhi Phutela-Director-Symbiosis Centre for Management Studies, Noida, v) Artificial Intelligence in Medical Diagnostics by Dr. Sanjay Singh and Dr. Adarsh Srivastava (Roche Diagnostics India Pvt. Ltd.).

## PUBLICATIONS

1. Immunotherapy by modulating the gut microbiome and related pathophysiology in mice Suresh Kumar, V. Samuel Raj, Ramendra Pati Pandey, Immune CONNECT (2024)-The Official Newsletter of the Indian Immunology Society (IIS), Issue II, October 2024.
2. Kumar S, Deeba F, Sharma P, Kumar L, Kumari R, Chaudhary M, Yadav S, Pal A, Chander H, Anvikar A, Yadav S. Analysis of historical data to accelerate deletion of Abnormal Toxicity Test requirement for biologicals and vaccines. Toxicology Reports. 2024. 101815. Published 2024 Nov 15. doi.org/10.1016/j.toxrep.2024.101815.
3. Dr. Gauri Misra's, PhD student Ms. Rashmi has presented a poster on the Title: “Investigation the CBX Family in Breast Cancer: Prognostics Implication of CBX3” in Workshop on Computational Oncology: Integrating experiments and computational models (WOCON-24) organized by IIT-BHU, Varanasi in collaboration with the Param Hansa Centre for Computational oncology, IISc Bangalore during 17<sup>th</sup> -18<sup>th</sup> December, 2024.
4. Ms. Rashmi, Ms. Manika P Sharma & Dr. Gauri Misra have published the following abstracts in the Young Scientist Conference (YSC), in the India International Science Festival (IISF) 2024 (Page Nos.-373 & 385) on 20/12/2024 “Investigating the CBX Family in Breast Cancer: Prognostic Implications of CBX3” “Silencing Serine/Threonine Kinases to Disrupt Breast Cancer Signaling Pathways”.
5. Mrinalini Roy, Shubham Mathur, Pramodkumar P. Gupta, Sanket Kaushik, Gauri Misra, S.L. Kothari and Vijay Kumar Srivastava. Elucidation of EhSec1 and Interaction with EhSyntaxin1A/1B of Entamoeba Histolytica via Docking and Molecular Simulations' December 2024 (I.F- 0.5). ISSN (Print):1570-1646, ISSN (Online):1875-6247 Pooja Bharali, Subhash Chand, Harish Chander. A Cost-Effective and Robust Cell-Based Bioassay Method for Evaluating the Bioactivity of Trastuzumab-like Antibodies. Biomedicines 13, no. 1: 23. https://doi.org/10.3390/biomedicines13010023. (Impact Factor: 3.9)
7. Book chapter: Kumar, A., Dubey, A. K. and Misra, G. (2024). 'Role of Cytokines in Chikungunya Infection' in the Book 'Cytokine Response Against Major Human Viral Infections' Edited by Samant, M. and Khare, P. Elsevier -Academic Press, London, UK.



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Please feel free to share your valuable thoughts & feedback for the betterment of the edition. We look forward to hear from you!!!