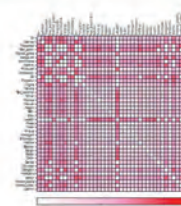


Biological Galaxy

ANNUAL REPORT 2022-23



ANNUAL REPORT
2022-23



Biological galaxy

Goat ovary immuno labelled for germline marker Vasa (green), guardian of germ cells Tap63 (red). A battery of small circles at the outer cortex region are oocytes. The medulla region in the middle contains neurovascular structures.

(Image courtesy: Dr. H.B.D. Prasada Rao)

Cover page concept:

Dr. G Taru Sharma and Dr. H.B.D. Prasad Rao

Inner page image courtesy:

Chaganti Srinivas



Annual Report

2022-23



National Institute of Animal Biotechnology

(An autonomous Institute of the Department of Biotechnology, Ministry of Science & Technology, Govt. of India)

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MISSION:

Development of sustainable and globally competitive livestock based economy through innovative science & technology development and entrepreneurship promotion.

VISION

To demonstrate excellence in science; develop technology and solutions in animal biotechnology leading to eventual commercialization.

OBJECTIVES

1. To undertake directed, basic and applied research towards technology and product innovation. Characterization of breeds and selective breeding to enhance productivity; develop technologies for multiplication of elite genotypes. Development of transgenic animals for producing molecules of pharmaceutical value. Enrichment of crop residues into high value products. Development of new generation vaccines, diagnostics and drugs.
2. To develop human resource across the value chain, primarily for translational research, industrial R&D; facilitate introduction of short term advanced training, new courses like MSc/ MVSc-PhD and Ph.D. degree with a focus on interdisciplinary science, innovation and the science of manufacturing.
3. To contribute to national policy formulation related to animal biotechnology, animal bio-safety issues and ethical issues.
4. To promote intellectual property protection, business development, technology transfer, and academia-industry partnerships.
5. To develop collaborative programmes with national and international partners with focus on translational research and product development.
6. To provide incubation facilities for entrepreneurs/ startup companies.
7. To create (i) extramural centers with emphasis on product innovation and translational research (ii) 'not for profit' companies; and (iii) facilitate the creation of 'for profit' companies

Human resource & Scientific Achievement

	Upto 31/03/2022	2022-2023	Total 31/03/2023
Publications	168	59	227
Patents	14	2	16
Awards and Recognition	32	26	58
EMR	77	8	85
Conference and Workshops conducted	22	9	31
Ph.D. Students	69	28	97
Scientists/Technical/Admin	38	7	45



From The Desk of Director

From The Desk of Director

National Institute of Animal Biotechnology (NIAB), an Autonomous Institute of Department of Biotechnology, Ministry of Science and Technology will soon be completing twelve years of its establishment and I draw a great pleasure in presenting the annual report of the for the year 2022-2023.

The major unmet need in the animal husbandry sector in India is the economical applications of the latest biotechnological tools for improving livestock health and productivity and, in turn addressing the one health issue at all three levels, local, National and global. NIAB achieves the same through the development of inhouse indigenous technologies through collaborations with other national and international research institutions and industries. The primary mandate is towards the development of a sustainable and globally competitive livestock-based economy for the public and industry through innovative and cutting-edge technologies for research & academic development. NIAB scientists are working in the upstream areas of Biotechnology for improving animal production and health for human welfare with a total scientific strength of 23 and two DST women scientists. A total of 97 students



are on board with us, during this year 4 students have submitted their Ph. D theses and out of these three students have already been awarded the degrees. The Research focus of the institute is in the major areas of Reproductive Biotechnology, Infectious Biology, Genomics, Transgenic Technology, Stem Cell Therapeutics, Bioinformatics, Nanobiology and Nutrition enrichment. NIAB aims at the basic and translational research leading to the development of various novel vaccine candidates, point of care diagnostics as well as therapeutics, institute is constantly promoting Bio-Entrepreneurship.

Inspite of being a very young, R&D establishment, outputs of NIAB in terms of potential for applicability as well as deployment are worth noting. During 2022-2023 institute received a good number of extramural grants in the mandated areas and has three major ongoing flagship projects. Published 53 research articles, 6 book chapters, applied 2 patents, making it to a total of 16 till date and one patent has been granted. It is noteworthy that the technology for veterinary applications face additional obstacles for highly regulated testing in the natural host, particularly

large animals, institute has transferred 3 technologies to the industries. For better interactions and research collaborations, MoU was signed with P.V. Narsimha Rao Telangana Veterinary University Hyderabad for collaborative research in high priority areas associated with veterinary and animal sciences. Another MoU was signed with the University of Hyderabad to collaborate on fundamental areas of biological sciences, with a special emphasis on Animal Biotechnology.

NIAB's Core Research Facilities provide researchers access to state of the art scientific instrumentation including Large Animal Farms (LAF) and Animal Resource and Experimental Facility for small laboratory animals, imaging, proteomics, genomics & bioinformatics and incubation centre. These facilities are available on a fee-for-service basis to the entire science community within and outside entities. Construction of NIAB's animal biosafety laboratory to handle level-2 pathogens could get started.

NIAB scientists prioritize their research work based on ongoing needs in the livestock sector to identify the issues at the grassroots level, which are then addressed in the laboratories aimed for further translations through inter/ intra institutional as well as industrial collaborations. During this year institute has organized two meetings of MILAN (Meeting of Indian Livestock-farmers and Agriculturists) with Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Kashmir at Srinagar and another was jointly organized by ICMR-Regional Medical Research Center and ICAR-Central Island Agriculture Research Institute at Port Blair, Andaman. As a part of Science Setu Program, scientists have delivered online/offline scientific talks as a part of India@75 celebration. NIAB Organized SERB accelerate Vigyan sponsored karyashala on "Ultrastructural imaging and its applications in livestock research", Laboratory Animal Scientists' Association conference 2022 was organized by DBT-NIAB; ICMR-NARFBR,

Hyderabad & LASA India, a One Health Workshop in collaboration with AIIMS- Bibinagar and NASI, an International Workshop on Nano Bioinformatics and annual review meeting of DBT-One Health Consortium for nationwide surveillance of zoonotic and transboundary diseases.

Foundation Day lecture was delivered by Professor SC Lakhotia, Distinguished Professor BHU & SERB Distinguished Fellow on "Non-coding RNAs: Key regulatory players in the maintenance of cellular homeostasis". Dr. Lalji Singh memorial lecture-2021 was delivered by Prof. Partha P. Majumdar, Distinguished Professor, NIBMG, Kalyani on "Tracing Some Developments on Human Genetics in India". Institute Day lecture was given by Prof Priya Abraham, Director, National Institute of Virology, Pune, and Prof. Sharmila Bapat, Scientist-G, National Centre for Cell Science, Pune on "Our Planet, Our Health, Our Future" and on "Plasticity in Biological Systems" respectively. World Animal Day Lecture was delivered by Dr. Satish Kumar Gupta, Former Deputy Director, NII, New Delhi on "World Animal Day: Fertility Control measures to mitigate wildlife-human conflicts" whereas Prof. K. Vijay Raghavan, Former Principal Scientific Advisor to GoI shared his views on "Shaping our scientific goals" on the eve of 'World One Health Day Lecture'. Dr. Rajesh S. Gokhale, Secretary DBT, GOI interacted with NIAB fraternity and gave a talk entitled, "FOSTERING BIOTECH INNOVATIONS".

NIAB celebrated all the National festivals and important National days through different related activities. NIAB was awarded with the 1st prize for 2021 for exemplary performance observed during Swachhta Pakhwada' 2021 by DBT. Second PhD Mini symposium was conducted during December' 2022. National Science Day 2023 was celebrated with school students Prof. D. Balasubramanian, Distinguished Scientist & Director of Research Emeritus, L V

Prasad Eye Institute, Hyderabad delivered National Science Day Lecture on “The Birth and Growth of Biotechnology in India”.

This annual report elucidates the scientific outcome from each laboratory, which speaks volume of it's own. These outcomes also have a tremendous support and sincere efforts from technical, supportive and administrative groups of NIAB. I like to applaud and appreciate the dedicated and cohesive teamwork of the entire NIAB family for continuing the participatory approach for all the scientific and academic activities.

We are very grateful to Dr. Rajesh S. Gokhale, DBT Secretary for his trust and constant support towards all the institute activities. I would like to put on

records and acknowledge all the esteemed members of NIAB Society, Governing Body, Scientific Advisory Committee as well as Finance Committee for their critical inputs and continuous encouragement to team NIAB. Professional and administrative support from colleagues and friends of other sister organizations at Hyderabad viz., CDFD, CCMB, IIT, PVR Telangana Veterinary University and University of Hyderabad, as well as from other National & International collaborators is duly acknowledged.

NIABians are committed to further strengthen the ongoing research activities in the time to come and aspire to further bring this institute to greater heights.

31 March 2023

Dr. G. Taru Sharma



Research Theme

A. Stem Cell Biology



Photo Courtesy: Satarupa Dutta



Stem cells augmented scaffolds for the regenerative therapies in animals

G. Taru Sharma

Research Group

PhD Students :

- Mohd Athar (UGC-JRF)
- Ananya Aeri (DST-INSPIRE JRF)
- Reena Yadav (CSIR-JRF)
- Bhuvan Bhaskar Tripathi (DST-INSPIRE JRF)

Trainees

- Siddhi Nagar (since Jan 2023)
- Sachin Kumar (since Feb 2023)

Young Professional

- Dr. Swati Sahay (wef April'2022 to April'2023)

Intern

- Dr. Ayan Mukherjee (2022 Summer Research Fellowship, IASc-INSa-NASI) (July-September' 2022)

Collaborators & Affiliations

- Dr. Vikash Chandra, IVRI, Izatnagar
- Dr. Amarpal, IVRI, Izatnagar
- Dr. G. SaiKumar, IVRI, Izatnagar
- Dr. M. Lakshman, PVRTVU, Hyderabad
- Dr. Nirmalya Ganguli, NIAB, Hyderabad

Theme and Objectives of Research:

Our research focus is on stem cells (fetal & adult) biology with a specific focus to generate user friendly technologies with an ultimate translational interest to develop specific products for regenerative therapies in animals, using various scaffolds augmented with stem cells. Our vision is to generate a battery of biological scaffolds impregnated either/or with the stem cells its conditioned media/exosomes. In addition we plan to use various patches for the delivery of conditioned media derived exosomes for different clinical purposes. Team also works to understand and explore different stem cell signalling pathways and

the molecular mechanisms that regulate the expression of target genes during the differentiation of mesenchymal stem cells to specific lineages.

A) Ex vivo expansion of rabbit and caprine amniotic membrane-derived stem cells

The amniotic membrane (AM) is a highly biocompatible natural scaffold and has potential applications in regenerative medicine. Stem cells derived from the amniotic membrane show high telomerase activity and are relatively naiver compared to other mesenchymal stem cells. AM has various components which effectively block the immune response and prevent the possibility of rejection when

cargo is transported through it. Its antibacterial property makes it a good candidate for wound dressings. Currently, our lab is working on the wound healing ability of MSCs derived from AM of the rabbit and goat. Elucidating the therapeutic potential of fresh and frozen thawed amniotic membrane in wound healing using rabbit as a model.

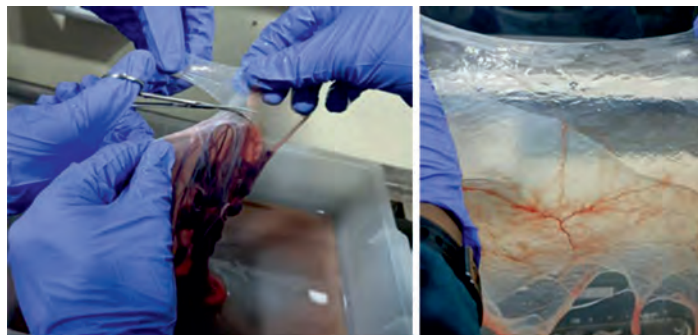


Figure 1: A) Separating AM from the caprine placenta; B) Separated, translucent white membrane AM

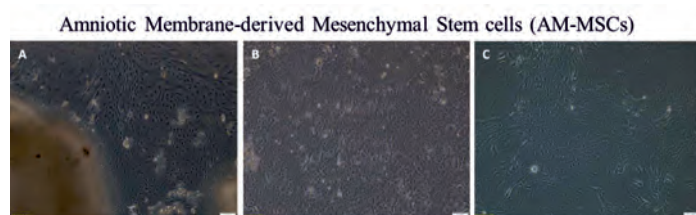


Figure 2: A) MSCs populating around AM tissue; B) Confluent AM MSCs C) AM MSCs at P3

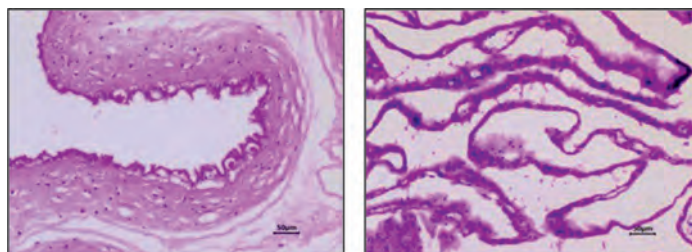


Figure 3: Histology of fresh and frozen thawed amniotic membrane

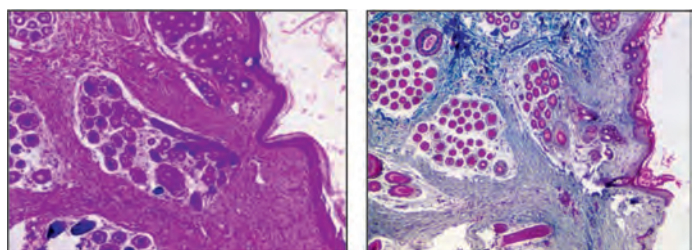


Figure 4: Histopathology of wound treated with fresh amniotic membrane (40x, H&E & MST)

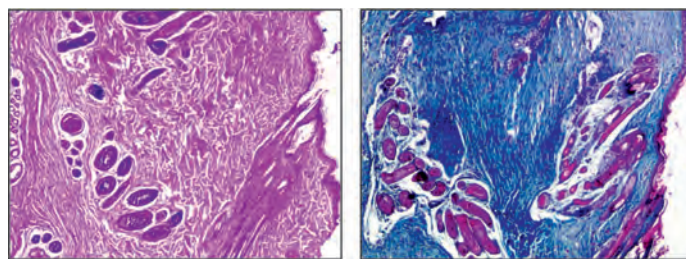


Figure 5: Histopathology of wound treated with amniotic membrane derived stem cells.

B) B) Understanding the signaling cascade involved in the Osteogenic commitment of canine bone marrow derived stem cells (BM-MSCs)

- Expansion, evaluation and characterization of Canine Bone Marrow derived Mesenchymal Stem cells (cBM-MSCs) to understand the signalling pathways

When standard treatments fail to treat a variety of disorders in companion animals (dogs, cats, goats, and rabbits), stem cells have emerged as strong possibilities for therapeutics. Canine BM-MSCs were expanded and propagated in-vitro from the marrow fluid collected from the iliac crest of dogs. Phenotypic characterization of cBM-MSCs was examined via molecular expression of cell surface markers as per the ISCT guidelines, viz. CD73, CD90, CD105 (positively expressed), and CD34, CD 45 (negatively expressed) from highly conserved regions. Furthermore, tri-lineage differentiation of cBM-MSCs is examined by Alizarin Red S, Alcian blue, and, Oil red O staining to identify Osteogenic, Chondrogenic, and Adipogenic lineages respectively.

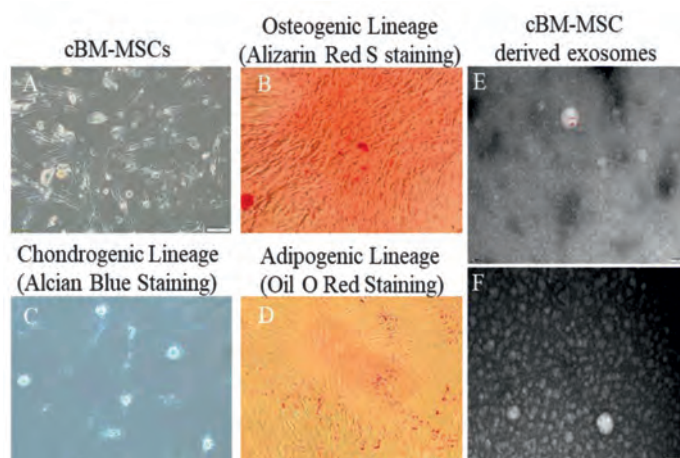


Figure 6: A) Cultured cBM-MSCs B-D) Trilineage differentiation of canine BMSCs E-F) TEM images of cBM-MSC exosomes

Currently, we are using these cBM-MSCs to unravel the molecular mechanisms and the molecules that promote their differentiation. In addition to this, we are also interested to explore the therapeutic potential of conditioned media and exosomes secreted from cBM-MSCs in wound healing. Laboratory is currently in the process of checking the quality of the isolated cBM-MSC exosomes by specific cell surface markers.

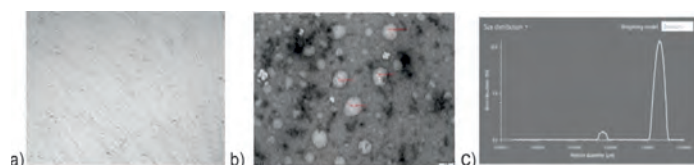


Figure 7: a) Confluent adult MSCs b) TEM of exosomes (40,000 X magnification) isolated from MSCs conditioned media c) Particle size distribution of exosomes

Regenerative potential of MSCs have gained enormous clinical attention, as these immuno-privileged cells have less chance of rejection. It is observed that cBM-MSCs exhibit osteogenic, chondrogenic, and adipogenic potential when pinched. However, the signaling cross-talk that facilitates cBM-MSCs osteogenic and adipogenic commitments is yet to be understood with clarity. Identifying the regulatory molecules that control the specific lineage differentiation of cBM-MSCs would provide better insight to treat various defects. Transforming growth factor- β (TGF- β)/ Bone morphogenetic protein (BMP) has a dual role in regulating osteogenic and adipogenic differentiation via SMAD-dependent and SMAD-independent paths. Our previous results showed that SMAD4 has a crucial role in the osteogenic commitment of cBM-MSCs (Uffaq et. al.2022). In extension to this, we are trying to understand if SMAD4 has the capability to induce osteogenesis independent of TGF β /BMP signaling as the nuclear localization of SMAD4 even in the absence of a TGF β signal has been reported. In this connection, we are interested to explore SMAD4 co-partners that induce RUNX2 (osteogenic marker) expression in cBM-MSCs. It has already been shown that the SMAD family interacts with the transcriptional co-activator with PDZ binding motif (TAZ) and this interaction regulates cell fate. So, we are exploring the function of non-canonical, TGF β /BMP-independent SMAD4-TAZ interaction in osteogenic signaling. For this, we have generated shSMAD4 and shTAZ clones and screened for the best clones with efficient knockdown. We will monitor the osteogenic capacity of shSMAD4 or/and shTAZ cBM-MSCs compared to scramble control cBM-MSCs by examining the RUNX2 expression.

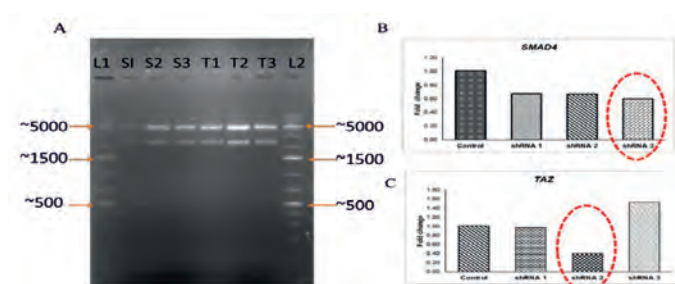


Figure 8: A) TAZ and SMAD4 shRNA clones confirmed using restriction enzyme digestion (L1 & L2: DNA ladder; S1-S3: SMAD4 clones; T1-T3: TAZ clones) B) Gene knockdown evaluation for three different sets of shRNA for SMAD4 and TAZ using qRT-PCR.

Publications :

1. Huidrom, L.D.; Dhanaji, S.N.; Pandey, S.; Chandra, V.; **G. Taru Sharma**. Embryo-Uterine Cross-Talk: Exploration of the Immunomodulatory Mechanism in Buffalo. *Animals* 2022, 12, 3138. <https://doi.org/10.3390/ani12223138>
2. Khan Sharun, Sathish Muthu, Pratheesh D. Mankuzhy, Abhijit M. Pawde, Vikash Chandra, Jose M. Lorenzo, Kuldeep Dhama, Amarpal, **G. Taru Sharma** (2022) Cell-free therapy for canine osteoarthritis: Current evidence and prospects. *Veterinary Quarterly*, 224-230, DOI: 10.1080/01652176.2022.2145620.
3. Khan Sharun, T. H. Musa, H.H. Musa, Rohit Kumar, A.M. Pawde, Vikash Chandra, Hardeep Singh Tuli, Kuldeep Dhama, Amarpal, **G. Taru Sharma** (2022) Mapping global trends in adipose-derived mesenchymal stem cell research: A bibliometric analysis using scopus database. *Annals of Medicine and Surgery* 77, 103542, 1-8.
4. Jose Bosco, Samad, H.A, Bharati J, Veligatala T, Konda P, Khan S, Tripathi, M.K, Punetha. M, Chouhan V, **Sharma G. Taru**, Puneet K, Singh G. (2022) Evaluation of thermo-adaptability between Tharparkar (Bos indicus) and crossbred (Bos indicus X Bos taurus) calves in a controlled environment *Journal of Thermal Biology* 110(4):103381, DOI: 10.1016/j.jtherbio.2022.103381.

5. Sivanarayanan TB, Bhat IA, Sharun K, Palakkara S, Singh R, Remya 5th, Parmar MS, Bhardwaj R, Chandra V, Munuswamy P, Kinjavdekar P, Pawde AM, Amarpal, **G.Taru Sharma**. Allogenic bone marrow-derived mesenchymal stem cells and its conditioned media for repairing acute and sub-acute peripheral nerve injuries in a rabbit model. *Tissue Cell*. 2023 Mar 2;82: 102053. doi: 10.1016/j.tice.2023.102053.

Newsletter Article

Kiranmai Joshi, Varadendra Mazumdar, Mohd Athar, HBD Prasad Rao, Girish Radhakrishnan, **G. Taru Sharma** (2023) ISSRF Newsletter entitled "A Kaleidoscopic View of Advances in Reproductive Health Research as India Turns 75" ;9-12; Issue 31 | February, 2023 ISSN 2395-2806.



The lab group (Left to right): Siddhi Nagar, Reena Yadav, Bhuvan Bhaskar Tripathi, Dr. G. Taru Sharma, Ananya Aeri, Mohammad Athar, Sachin Kumar.



Stem cell and allied therapies in livestock

Sandeep Goel

PhD Student

- Ibraz Kori, DBT-JRF (since May 2022)
- Utkarsha, CSIR-JRF (since Oct 2022)

Project personnel

- Michelle Abraham, RA-1 (since May 2022)

Collaborators & Affiliations

- Dr. Sandeep Kushwaha (NIAB, Hyderabad)
- Dr. Paresh Sharma (NIAB, Hyderabad)
- Dr. Pankaj Suman (NIAB, Hyderabad)

Theme of Research

Dairy animals are crucial in the livestock industry's economics, amounting to around 200 million tons of milk production in India. Clinical conditions, such as mastitis, wounds, lameness, fracture, and other musculoskeletal disorders, negatively affect milk production and reproductive efficiency in dairy livestock species. The conventional treatment does not suffice for their effective recovery, with sequels such as fibrosis of the udder post-mastitis, non-healing of deep muscular wounds, and non-union of bone post-fracture being some familiar occurrences.

Veterinary regenerative medicine research has focused principally on companion and sports animals, but very few reports on livestock species limit the future of regenerative medicine applications. Mesenchymal stem cells (MSCs) have received much attention over the years, and the establishment of cell differentiation methods has made stem cell therapy clinically attractive in veterinary medicine. Besides, MSCs are easy to isolate, and the cells display significant therapeutic plasticity as reflected by their advantageous characteristics: the ability to enhance tissue renovation, the immunomodulatory and anti-

inflammatory effects, and the possibility of applications for both autologous and allogeneic therapies. Our lab focuses on developing MSC-based therapy in livestock species with its translational research applications. We propose augmenting conventional treatment by aiding both animal welfare and economic benefits, making it cost-effective and affordable.

Deciphering the mechanism of fibrotic mastitis and development of stem cell-based therapy for its reversal

Mastitis significantly impacts animal welfare and the economy among bovine diseases. It adversely affects the lucrative benefits of animal producers/farmers and leads to a significant production loss in the dairy sector. Clinical mastitis severely impacts udder tissue and reduces animal value and milk production due to mammary tissue damage and reduced activity of epithelial cells. Organ fibrosis represents the typical consequence of functional cell replacement by fibrotic tissue, resulting in the reduction of organ performance. Unfortunately, no single therapeutic strategy is available to improve or revert more than 50% of the post-mastitis structural damage of the mammary gland. We envisage understanding the mechanism of fibrosis in mammary tissues and utilising mesenchymal stem cells to reverse fibrosis. To achieve this, we isolated and established goat mammary cell (gMC) lines from mammary tissues (Fig. 1A) and milk (Fig. 1B) and characterised them (data not shown). We induced fibrosis in the gMC using bleomycin, a glycopeptide antibiotic and a non-heme iron protein used as an anti-

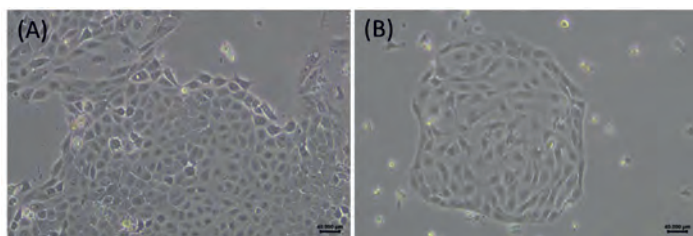


Fig. 1. Goat mammary cells (gMC) in culture. (A) Cells isolated from mammary tissue and (B) milk (B). Note typical epithelial morphology. Scale bar = 40 µm.

cancer drug. Our results demonstrated that bleomycin (at 1 µg/ml concentration) could significantly induce fibrosis in gMCs, as indicated by Sirius red staining of the bleomycin-induced cells (Fig. 2).

We are studying the expression of pro-fibrotic proteins

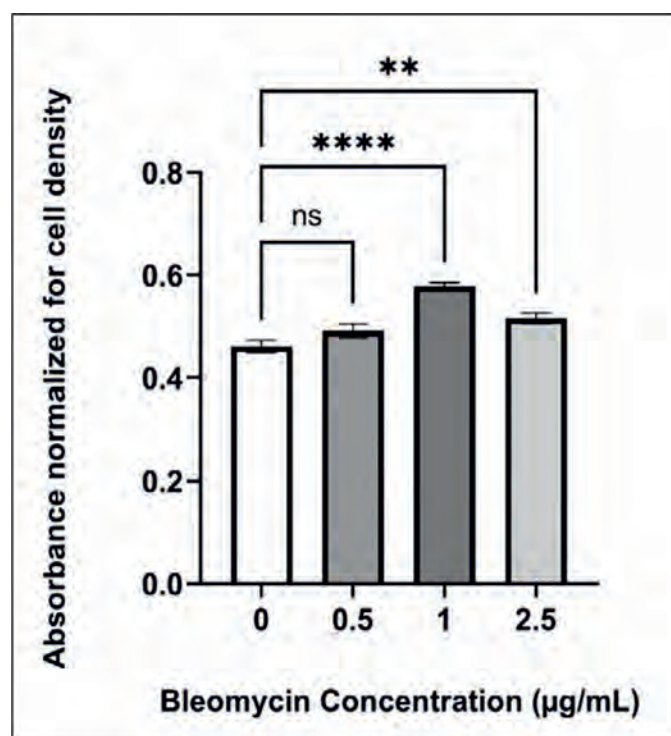


Fig. 2. Bleomycin induction of fibrosis in goat mammary cells. The y-axis indicates Sirius red absorbance normalized against cell density. NS, non significant, **** $P < 0.001$, ** $P < 0.01$

such as SMA, COLA1 and VIM in the induced cells. Further, we propose to evaluate conditioned media from primed AD-MSCs in reversing fibrosis in fibrosis-induced cells. The study proposes to decipher the mechanism of fibrotic reversal in mastitis. This study will also provide scientific evidence underlying the therapeutic potential of MSCs.

Priming effect of hypoxia to enhance its therapeutic potential of stem cells

For a large-scale expansion of MSCs, optimising conditions requires careful consideration to maintain native MSC characteristics in vitro. The therapeutic potential of mesenchymal stromal cells depends on their ability to survive and proliferate under adverse in vivo scenarios in a particular disease. Previously, we investigated the effects of hypoxic (2% oxygen) and normoxic (21% oxygen) culture conditions on goat AD-MSCs in the early or late passages. Our results demonstrated that AD-MSCs cultured in hypoxic conditions have a significant advantage compared to those cultured in normoxic conditions, as indicated by a lower population doubling time, higher colony

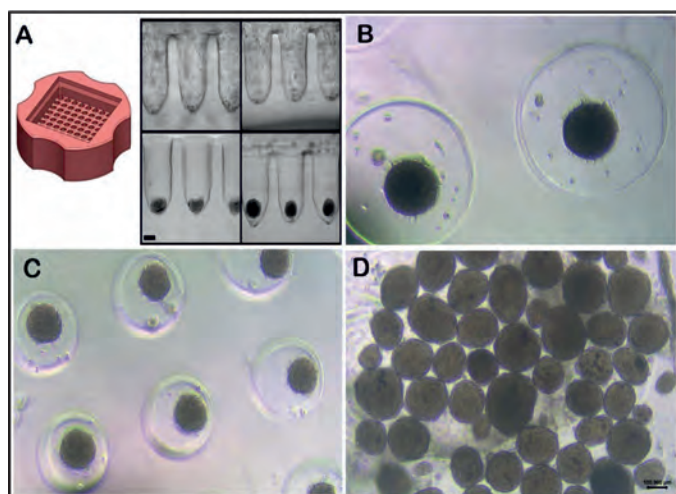


Fig. 3. Generation of AD-MSCs 3D spheroids. (A) Agarose micro-moulds used for gravity assembly of AD-MSCs for generating spheroids. (B) Spheroids in 81 wells micro-moulds. (C) 256 wells micro-moulds. (D) Spheroids collected from micro-moulds 72 hr after assembly. Scale bar=100 μ m.

formation ability, and higher cell viability/metabolic activity. Hypoxic culture of MSCs can prolong cell viability in vivo, while the aggregation of MSCs using a 3D culture system increases cell survival, trophic factor secretion, and tissue formation in vivo. We hypothesised that MSCs cultured in hypoxic conditions combined with 3D culture would increase cell viability and promote pro-angiogenic/anti-inflammatory, immunomodulatory and therapeutic potential compared with cells culture in normoxic 2D culture.

Therefore, we evaluated gene expression changes in AD-MSCs 3D spheroids generated from cells cultured either in hypoxic or normoxic conditions (Fig. 3). Our results showed that the spheroids generated from cells cultured in hypoxic conditions had elevated expression of cell proliferation-specific (MKI67) and hypoxia-induced transcription factor (HIF1A) genes (Fig. 4). The spheroids generated from cells cultured in hypoxic conditions also had upregulated chemokine (CCL2) and chemokine receptor (CXCR4), tissue remodelling enzyme (MMP1), and cytokines/chemokine-specific (TGFB1 and IL8) genes expression. However, the expression of apoptosis (TP53) and senescence-specific (P21) transcripts were also elevated in the spheroids generated from cells cultured in hypoxic conditions. These findings suggest that a hypoxic environment for culturing 3D spheroids is superior for the ex vivo expansion of AD-MSCs, and can provide a better model that more accurately mimics in vivo conditions for use in MSCs-based regenerative therapy instead of using large animals or other animal models. However, further experiments are needed to standardise the size of spheroids, oxygen concentration, and passage number, as apoptotic and senescence-specific genes were also upregulated in hypoxia.

Publications :

None

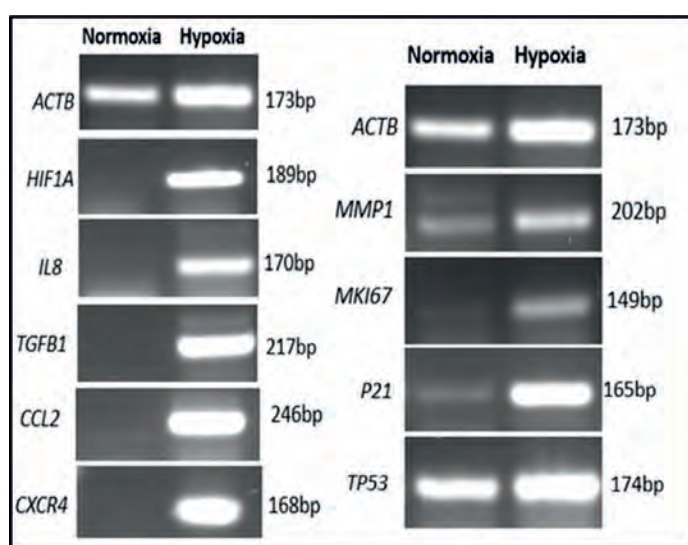


Fig. 4. Expression profile of AD-MSCs 3D spheroids in hypoxic and normoxic conditions.



The lab group (Left to right): Utkarsha, Anandhu, Ibrah Kori, Dr. Sandeep Goel, Nutan Mali and Michelle Abraham.



Organoids as model systems for livestock diseases and Nanobiotechnology

Vinod Kumar

Research Group

PhD Students

- Sanjay Rawat (UGC - JRF)
- Dipali Patel (UGC - JRF)

Master Interns

- Prashant Kumar Mishra
- Bharti Behra

Collaborators

- Dr. Rajesh Kumar, Indian Institute of Technology, Kanpur, India

Education and Training

Dr. Vinod Kumar received his Master and PhD degree in Biotechnology from CSJM University Kanpur (2005), India and from the Banaras Hindu University (2014), Varanasi, India, respectively. During his doctoral training, he developed advanced carbon nanostructures for various biomedical applications. In his PhD tenure, he got an opportunity to visit National Tsing Hua University, Taiwan, as Research Exchange Student (May 2012-November 2012) and receive a Training on "Fabrication of Graphene Field Effect Transistor for Biosensing". Upon completion of his doctoral degree, he underwent for his first postdoctoral training (2014-2016) from the Institute of Nano Science & Technology and developed an expertise in Nano-bio-analytical systems/devices for an early stage screening of cardiac disease biomarkers.

Subsequently, he moved to the Ben-Gurion University of the Negev, Israel, where continued expanding his skills in advanced analytical domains i.e. Coiled-coil modified Nanopores etc. During his tenure at Ben-Gurion University of the Negev (2016-2019), he got training in the fabrication and bio-functionalization of nanopore towards improved analytical outcomes for small molecules, and for error-free nucleic acid/ peptide sequencing. Following his return to India (2020), as a senior researcher at the Sanjay Gandhi Postgraduate Institute of Medical Sciences in Lucknow, he began investigating the role of nanomaterials in stem cell engineering, with the goal to develop a pancreatic organoid (as a model system) for understanding the pathophysiology of various environmental diabetogens in Type 2 diabetes, while also designing biopolymer-based edible scaffolds for the development of alternative protein source.

Theme of Research

We are interested in bringing innovative solutions to livestock health and productivity by introducing next-generation, state-of-the-art model systems and devices. The main focus of the laboratory is to design and develop novel nano-biomaterials based approaches for advanced organoid cultures, and organoid-on-a-chip (BioMEMS) as a novel disease model to understand and develop reliable therapy for complex livestock diseases. Lab is also striving to translate in-house developed cutting-edge micro/nanofluidic technologies into regenerative engineering, 3-D bioprinting, and in bioanalysis, with an end goal of transferring them to the commercial market through collaborations with industry.

Key proposed research areas:

1. Development and characterization of organoids as an advanced in vitro 3-D disease model system

Organoids, miniaturized are 3-D versions of an organ also called “mini-organs” produced in laboratory conditions serve as a model system to study biological functions, diseases, and treatments, more realistically and in greater detail than ever before. Therefore, the primary research goal of the Lab is to develop highly competent organoid model systems for studying the pathophysiology and developing new therapeutic means for complex zoonotic diseases.

2. Nano-biomaterials based strategies to engineer the niche and cell surface for efficient growth of organoid model

The use of well-defined 3-D nano-biomaterials that support and promote organoid formation is an intriguing research topic with the potential to dramatically enhance the reproducibility and relevance of organoids. Synthetic nano-biomaterials can provide modified cell surfaces and a chemically defined milieu or niche that allows exact mimicking of matrix characteristics to affect the cell proliferation and differentiation. Another research goal of the Lab is to create innovative nano-biomaterials for modifying niche and cell surface features to generate efficient organoids models.

3. Organoids-on-a-chip/ 3-D bioprinting

The microfluidic culture device with cells/tissue known as an organ-on-a-chip, these devices can precisely recapitulate the organ-level (multi-tissue) architecture and functions of in vivo organs. Such a system might serve as a reliable model for investigating the disease mechanism in animals and developing innovative therapeutics. As a result, Lab is also interested in developing organoid-on-a-chip devices, first at the single organoid level followed by multi-organoid level, utilizing MEMS technology and 3-D bioprinting. In addition Lab is also interested in synthesis of tunable “bioink” for bioprinting of organoids and tissue constructs.



The lab group (Left to right): Miss Dipali Patel, Dr. Vinod Kumar, Mr. Sanjay Rawat



3D Biofabrication for Tissue Engineering and Regenerative Medicine

Janani Radhakrishnan

Research Group

- Sakeena Banu, Project Associate – I (Since Jan 2023)
- Saroj Chand Tadanki, Masters Trainee (Since Feb 2023)

Education & Training

Dr. Janani Radhakrishnan completed her M. Sc. (2011) in Biomedical Science (5 year integrated course) from Bharathidasan University, Tamil Nadu and pursued Ph.D. (2017) as DST INSPIRE research fellow at the Centre for Nanotechnology and Advanced Biomaterials (CeNTAB), SASTRA University, Thanjavur. During Ph.D., various tissue engineered scaffolds including injectable hydrogels with nano-engineered gradient osteo-chondral mimetic characteristics for regeneration were developed. Further, she has customized an extrusion-based 3D bioprinter for precise dispensing of viable bioink at Indian Institute of Technology Madras (IITM), Chennai during her postdoctoral research (2018-2020). She has been selected for DST INSPIRE faculty fellowship and continued 3D bioprinting electrically conducting hydrogel constructs for cardiac tissue engineering at CSIR – Central Leather Research Institute, Chennai from December 2020. She has joined NIAB in August 2022.

Theme of Research

Living tissues are intrinsically designed with complex three-dimensional (3D) architectures and multicellular composition. The multi-orchestrated microstructures, extracellular matrix composition and cellular components synchronously play vital role in tissue functions and cell behaviour. Disease or injury leads to severe tissue damage and loss in function. Though reparative mechanisms intrinsically comes to rescue, the response fails to form competent tissue and thereby warrants interventions for efficient regeneration. Our research focus on the development of reliable, cost-effective, easy-to-handle, facile fabrication of pre-formed and injectable / 3D printed tissue engineered constructs that facilitate tissue regeneration. Advanced biofabrication strategies include convergence and development of 3D bioprinting, spheroids, dynamic cultures and stem cells in tissue-mimetic constructs that instills functional tissue regeneration at implant site. The advent of 3D bioprinting has revolutionized tissue engineering with precise spatio-temporal positioning

of cells and biomaterials that closely recapitulates the tissue complexity. Success of 3D bioprinting largely relies on achieving printable sol as bioink that precisely positions cells and tissue analogous matrices as robust gel constructs. Development of tailorable bioink with appropriate viscoelastic properties that exhibit sol-gel transition during printing or post-printing processes will be the major objective. In particular, we aim at developing tissue-mimetic 3D bioprinted constructs to treat chronic wounds and bone fractures in animals. Biocompatible, biodegradable polymers from synthetic and natural sources will be chosen and chemically modified to achieve specific functionalization. The active functional groups in polymers will be interacted to form robust hydrogels by crosslinking

methods such as photo-responsive, ionic, enzymatic and physical. 3D crosslinked network of hydrogels form the ground substance with tunable properties and further be engineered with nanomaterials and cells for biofabrication of bone-mimetic constructs. Biofabrication design will achieve meso-micro scale pores with interconnected microstructure, mineralization and mechanical properties that match the native bone characteristics. Bioprinted constructs will be investigated in vitro using stem cells, subjected to dynamic culturing for tissue maturation and validated in in vivo rabbit models. The system will emerge as reliable organotypic tissue models that facilitate disease study, drug discovery and therapeutics with potential impact in veterinary medicine.



The lab group (Left to right): Saroj Chand Tadanki, Dr. Janani Radhakrishnan, Sakeena Banu



Autophagy Pathways to improve animal health during nerve injury

Madhavi Gorla
DST-INSPIRE Faculty

Collaborators

- Bindu Madhava Reddy, University of Hyderabad
- Naresh Babu V Sepuri, University of Hyderabad

Theme of Research

As a DST-INSPIRE Faculty, I am primarily associated with Dr. G. Taru Sharma's lab and mentored by her. Mainly working on understanding the signaling cascade that is crucial for the differentiation of canine mesenchymal stem cells to osteoblasts specifically. Unraveling this signaling will provide a better insight into the potential targets and an effective strategy for repairing bone defects in canine systems.

In parallel, we are also exploring the molecular pathways that play a crucial role in controlling the protein homeostasis in the nerve system and how it gets altered during pathological insults such as injury, viral infections, etc. The primary focus is on spinal cord injury (SCI), which is a common cause of disability that can result from physical trauma to the spine, leading to permanent or temporary loss of spinal cord function and causing sensory and motor neuron deficits. In addition to the initial mechanical damage, a secondary inflammatory response causes the release of free radicals, leukotrienes, and prostaglandins that further cause injury to the nervous tissue. This exacerbated inflammatory response hinders neuron regeneration. Acute spinal cord injuries are commonly associated with spinal fracture and it is more common in dogs.

One of the important cellular mechanisms disrupted

after SCI is autophagy, an adaptive process that clears harmful cellular material. Autophagy is a conserved intracellular mechanism and plays a critical role in maintaining cell homeostasis by removing damaged proteins, lipids, and organelles. The impaired autophagy after SCI potentiates neuroinflammation and causes further tissue damage. Thus, the restoration of autophagy flux by autophagy-enhancing pharmacological drugs would be an effective therapeutic strategy to treat SCI. We will explore the possible effect of autophagy in injured canine spinal neurons as the role of autophagy-mediated cell homeostasis is not very well studied in canine models. Subsequently, we will also understand the molecular events that will be restored after the activation of autophagy at the injury site which would provide additional therapeutic targets for SCI treatment in a canine model.

Ongoing projects

Project 1 (funding body: DST-INSPIRE Faculty grant):

In this project, we are trying to address the role of ubiquitin ligase adaptor proteins and their downstream signalling mechanism in neuron health.

Project 2 (funding body: DST-SERB Core Research Grant): In this project, we are exploring the events of neuroinflammation during neuron degeneration.



Finding Targets to Therapeutics in Animal Health and Diseases

Bhaswati Chatterjee

Research Group

- Dr. Bhaswati Chatterjee

Principal Investigator

- DST-Women Scientist

Collaborators

- Dr. Suman Thakur: CCMB, Hyderabad

In this project, we are exploring the early biomarker of diabetic cardiomyopathy using high resolution mass spectrometry based quantitative proteomics and metabolomics.

Theme of Research

The research is under the umbrella of probing the biomarkers in animal health and diseases using mass spectrometry based proteomics and metabolomics. Further, modern biology techniques will be used to elucidate the mechanism of the animal diseases. The outcome of the studies will be validated using targeted mass spectrometry and western blot/immunohistochemical studies. The peptides will be designed to develop therapeutics. These biomarkers may serve as targets for the development of new therapeutics.

Discovery of early biomarkers of Diabetic Cardiomyopathy using high resolution Mass Spectrometry based Quantitative Metabolomics and Proteomics (Funded Project by DST-WOSA as PI)

Diabetic cardiomyopathy (DC) is one of the complications associated with diabetes that is identified by functional and structural changes in the heart such as elevated left ventricular mass,

myocardial fibrosis and abnormal diastolic function in the absence of cardiac risk factors, such as coronary artery disease, hypertension, and significant valvular disease. This disease leads to heart failure with accumulation of fluids in lungs or legs. The imaging techniques such as magnetic resonance imaging and echocardiography have found to be capable of detecting abnormalities in cardiac morphology and functions. Positron emission tomography is also used to determine myocardial metabolic abnormalities.

As there is a prevalence of diabetic cardiomyopathy in human medicine, interestingly, studies on diabetic cardiomyopathy have been started in recent years in veterinary medicine. Notably, diastolic dysfunction is found to be common in diabetic cats. Thus, diabetic cardiomyopathy might be a reality in cats, similar to human beings. Furthermore, it was reported diabetic dogs with diabetes greater than one year had diastolic dysfunction compared to dogs with diabetes for less than one year.

High resolution mass spectrometry has evolved as an important technology to understand DC and will provide new insights involved in progression and mechanistic details of DC thereby helping to find the biomarkers for early stage of detection of DC. Proteins and metabolites often have complementary roles

by jointly performing specific biological functions including regulation of the functions of proteins and controlling different cellular processes. These complementary roles and synergistic interactions are captured by the interaction network studies.

Using an extensive set of proteins and metabolites fingerprints of DC patients, this study aimed to find the proteins and metabolites as the potential biomarkers of DCM. For this, first we have studied the proteins and metabolites fingerprints of DC patients and found that some of the protein fingerprints of DC at high confidence scores ($\geq 70\%$) shows protein-protein interaction networks such as A2M-APOA1; A2M-IL6; A2M-SERPINA1; ACADM-ECH1; ACADM-HADH; ACADVL-ECH1; ACADVL-HADH; ACAT1-HADH; ADIPOQ-LEP; ADIPOQ-INS; ADIPOQ-IL6; ADIPOQ-TNF; APOA1-SERPINA1; APOA1-INS; C3-SERPINA1; ECH1-HADH; GPX3-GSTM2; GPX3-GSTM3; GSTM2-PRDX6; GSTM2-GSTM3; GSTM3-PRDX6; IGFBP7-INS; IL6-LEP; IL6-INS; IL6-LTA; IL6-TNF; INS-LEP; INS-NPPA; INS-TNF; LEP-TNF; LTA-TNF; MYL2-MYOZ2; MYL2-TPM1; MYL2-TNNT2; PRDX1-PRDX2; PRDX2-PRDX6 and TNNT2-TPM1.

The metabolites fingerprints of DC at high confidence scores ($\geq 70\%$) showed metabolite-metabolite

interaction between such as octanoylcarnitine-hexanoylcarnitine and octanoylcarnitine-decanoylcarnitine.

Notably, the proteins and metabolites fingerprints of diabetic cardiomyopathy patients were analysed together to study the interaction network between them at a cut-off of high confidence scores ($\geq 70\%$). The protein-metabolite interactions found at high confidence scores ($\geq 70\%$) are IL6-bilirubin; GPX3-butyrate; LEP-butyrate; GSTM2-butyrate; TNF-bilirubin; ACADM-octanoylcarnitine.

Further studies will be done using mass spectrometry based proteomics and metabolomics to find the protein and metabolites as potential biomarkers of DC using patient samples, mouse samples and other animals. The outcome of the above studies will be validated using targeted mass spectrometry and western blot.

Publications :

B Chatterjee*, S S Thakur*. 2023 Proteins and metabolites fingerprints of gestational diabetes mellitus forming protein-metabolite interactomes are its potential biomarkers *Proteomics*. Mar 15:e2200257. doi: 10.1002/pmic.202200257.



Research Theme

B. Animal Health

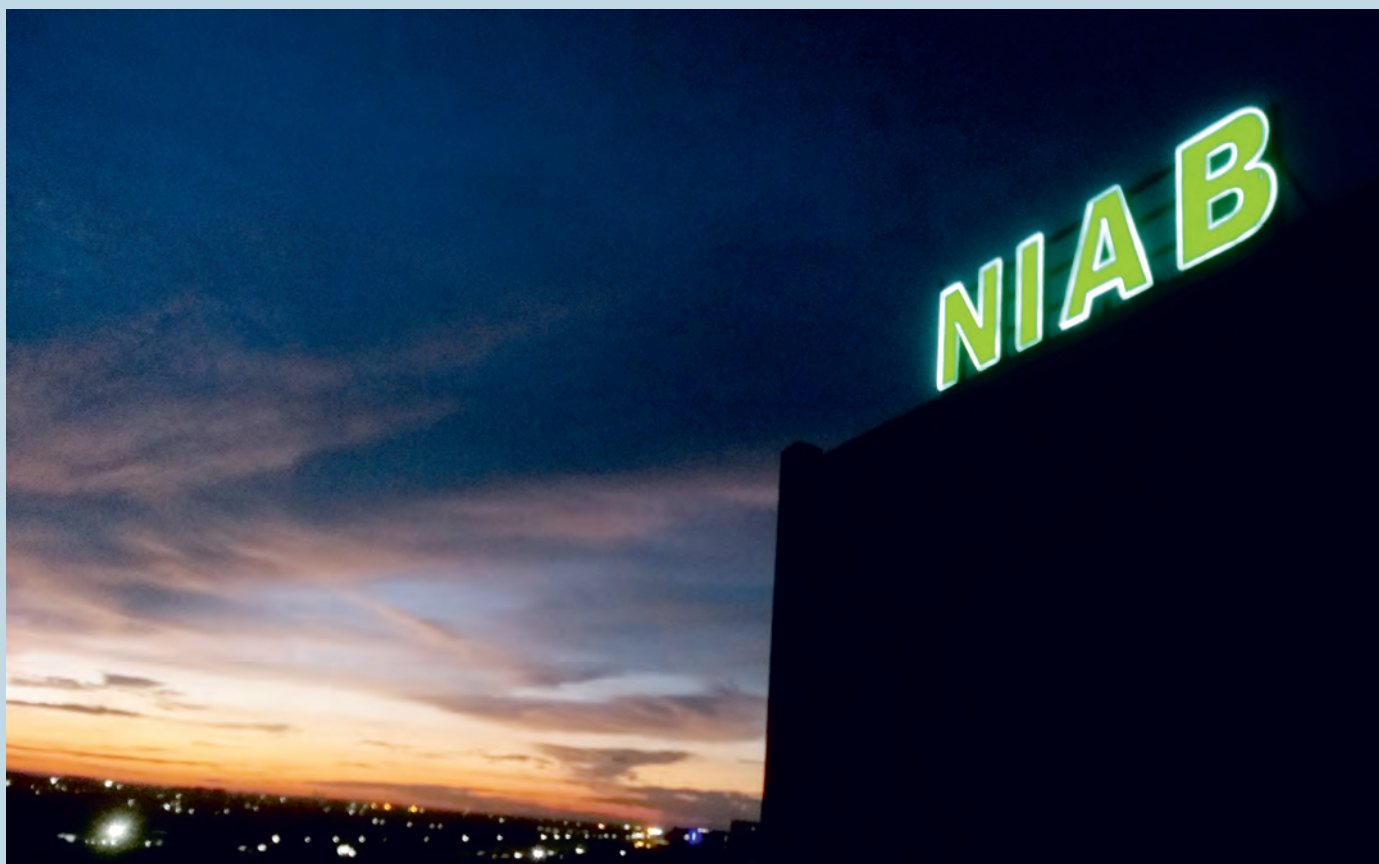


Photo Courtesy: Meenakshi Mansukhani



Microbial Pathobiology and One Health

Nagendra R. Hegde

Research Group

PhD students

- Priya Gupta (DBT – SRF)
- P. Jasmeen (CSIR – SRF)
- Sashikanta Parida (UGC – SRF)
- Bhawna Baloda (ICMR – JRF)
- Palem Pranathi (UGC – JRF)
- Tejaswi Ambati (CSIR – SRF)
-

Project Personnel:

- Gauthami S, RA (Feb 2021 to Mar 2023)
- Devasmita D, SRF (Feb 2021 to Mar 2023)
- Malathi Talari, RA (since Feb 2012)
- Srinivas Chaganti, SRF (since Feb 2022)
- Haajira BV, JRF (since Feb 2022)
- Jaajwalya, JRF (since Mar 2022)
- Muskaan Harde, JRF (Mar to Aug 2022)
- Narender Reddy, JRF (since Sep 2022)

Collaborators

- Madhuri Subbiah, NIAB, Hyderabad
- Anand Srivastava, NIAB, Hyderabad
- Shailesh Sharma, NIAB, Hyderabad
- Guruprasad Medigeshe, THSTI, Faridabad
- Shrikrishna Isloor, KVAFSU, Bangalore
- SV Rama Rao & SS Paul, ICAR-DPR, Hyderabad
- TR Gopala Krishna Murthy, A Natarajan, V Gowthaman, TANUVAS, Namakkal
- DBT-One Health Consortium Partners

Theme of Research

We work on various aspects of microbial pathobiology, including characterization of pathogen genome, virulence determinants and disease pathogenesis, host-pathogen interactions, development of diagnostics, therapeutics and prophylactics, and zoonoses. In the current year, we were engaged in (a) generating tools and reagents for studying the biology of bovine ephemeral fever virus, (b) producing tools to generate platforms for screening anti- coronavirals, (c) initiating work on the use of bacteriophages for bovine mastitis pathogens, (d) continuing the work on understanding the drivers of antimicrobial resistance (AMR) in

poultry in India, and (e) the establishment of a One Health consortium.

Understanding the biology of bovine ephemeral fever virus

Bovine ephemeral fever virus (BEFV) causes a seemingly innocuous transient infection of cattle and buffaloes. However, the prevalence or its economic implications in India, or the interaction of the virus with cells are not well understood. In collaboration with Dr. Debasis Nayak (IISER-Bhopal), we initially expressed the viral genes in prokaryotic and eukaryotic expression systems to develop reagents and tools, as well as to set up the reverse genetics platform for

the virus. During the previous (data not shown) and the current year (data shown below), we have accomplished the following:

- Expressed and purified the viral N, P, M and G proteins in either *E. coli* or baculovirus systems and raised rabbit polyclonal sera against all of them (data not shown).
- Cloned various cDNA fragments of the BEFV genome and assembled the full-length into a cassette (minigenome) which contained a promoter (either T7pol or PolI) and other regulatory elements (data not shown); generated separate plasmids encoding N, P and L genes (helper plasmids; data not shown). The full-length construct, when co-transfected with the helper plasmids is expected to generate infectious BEFV. For the T7 system, one needs to transfect into cells constitutively expressing T7pol (e.g., BSR-T7 cells) or infect with a vaccinia virus encoding the T7pol (VV-T7) after the co-transfection.
- Generated recombinant adenoviruses independently expressing N, P, M and G proteins (data not shown).
- Preliminary experiments showed that the minigenome system was functional (Fig. 1), and that BEFV was generated (Fig. 2).

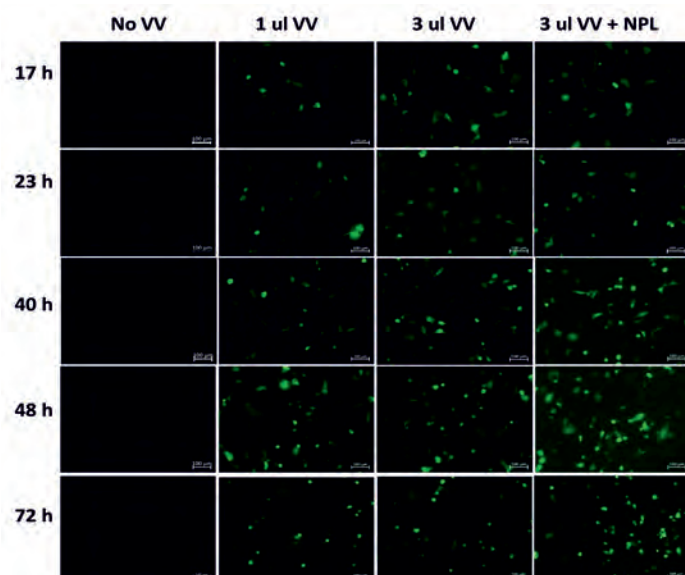


Figure 1. Expression of TFP encoded in the T7-minigenome. BHK21 cells were transfected with the minigenome, with or without additional plasmids for N, P, L genes, then infected with VV-T7 or not, as indicated. At various time

points, fluorescence was monitored.

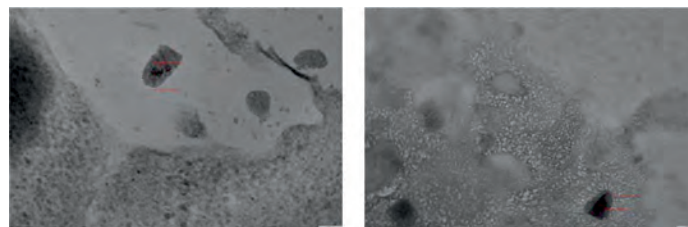


Figure 2. Electron microscopy to confirm generation of BEFV. The PolI system was used for transfections and cell culture supernatant from the passaged material was subjected to EM.

Generation of platforms for screening anti-coronavirals

Coronaviruses are common respiratory pathogens and frequently cause benign disease but are zoonotic. The COVID-19 pandemic has highlighted the need for preparedness in terms of platforms for the development of vaccines and therapeutics. However, requirement of high containment facility to handle the virus has been a hindrance to many laboratories aspiring to work in these areas. As an alternative to using infectious virus and thus avoid the requirement for a BSL3 facility, in collaboration with Dr. Madhuri Subbiah (NIAB) and Dr. Guruprasad Medigeshi (THSTI), we initiated a project to generate replicon and replicase systems which can then be used for rapid screening of anti-coronaviral drugs. Towards this, we amplified and assembled the genome fragments to produce replicon cassettes for SARS-CoV-2. Smaller fragments were joined to produce three large and three small fragments, the ligation mix of which was transfected into cells along with infection with VV-T7 to confirm that the system was functional (Fig. 3).

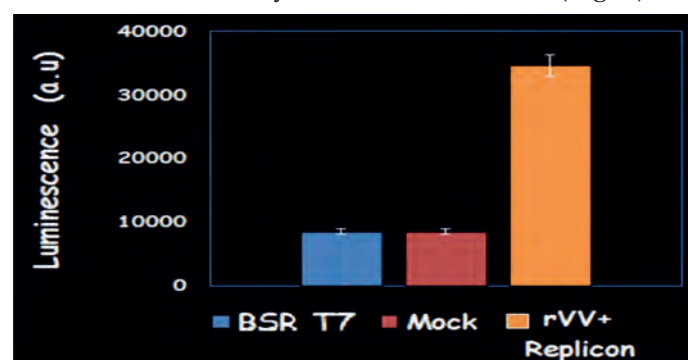


Figure 3. Replicon assay. Fragments of SARS-CoV-2 replicon were ligated, purified, and transfected into BSR-T7 cells with or without VV-T7. After incubation,

lysates were prepared and mixed with the HiBiT reagent to evaluate the amplification of the HiBiT tag included in the replicon.

Phage and phage-based lysin therapy for major bovine mastitis pathogens

High milk yielding animals are more susceptible to intra-mammary infection (IMI) and subsequent mastitis, which is responsible for huge economic losses to dairy industry worldwide. IMI is caused by several bacteria, importantly *Staphylococcus aureus*, *Escherichia coli*, *Streptococcus dysgalactiae*, *Strep. uberis*, and *Strep. agalactiae*. Bacterial IMI can be treated with antibiotics, but their injudicious and uncontrolled use could contribute to AMR and treatment failures. Hence, there is an urgent need for alternative therapies, including the use phages and lysins. Towards this, we have isolated 37 phages against *E. coli*, 18 phages each against *Proteus* and *Strep. agalactiae* and 7 phages against *Staph. aureus*. The coliphages were characterized for structure, plaque morphology, strain tropism, latent period, burst size, genome fingerprinting, stability at various pH and temperatures, and specificity to *E. coli*. The 18 phages against *Strep. agalactiae* have so far been characterized by strain tropism. These and phages against *Staph. aureus* will be further characterized.

Other programmes

To understand the consequences of the use of antimicrobials or alternatives in poultry meat production, we had intended to investigate the drivers of AMR and design intervention strategies through a multi-disciplinary approach. In the previous years, we had carried out pilot studies for a full broiler meat production cycle, where various samples were collected at various time points, and analysed for AMR phenotype and genotype. During the current year, samples were collected from farms in the field, *E. coli* were isolated and subjected to AMR phenotypic and genotypic analyses. The data are being collated and analysed along with those from other collaborating centres.

The other area is the multi-centre program on estimating the prevalence and development

of warning systems for several zoonotic and transboundary animal diseases to build a platform for One Health. Work during the year included selection of kits, finalization of standard operating procedures, derivation of sample numbers and sampling frame, collection of samples from the states assigned to us, testing of the samples, coordination of the consortium activities, and conducting brainstorming sessions and workshops.

Publications :

1. K Putty, PL Rao, VK Ganji, D Dutta, S Mondal, **NR Hegde**, A Srivastava, M Subbiah.* **2023**. First complete genome sequence of lumpy skin disease virus directly from a clinical sample in South India. *Virus Genes* 59(2):317-322.
2. R Sivakumar, P Sree Pranav, M Annamanedi, S Chandrapriya, S Isloor, J Rajendran J,* **NR Hegde**. ***2023**. Genome sequencing and comparative genomic analysis of bovine mastitis- associated *Staphylococcus aureus* strains from India. *BMC Genomics* 24(1):44.
3. SS Paul,* SV Rama Rao, **NR Hegde**, NJ Williams, RN Chatterjee, MVLN Raju, GN Reddy, V Suganthi, PSP Kumar, S Mallick, M Gargi. **2022**. Effects of dietary antimicrobial growth promoters on performance parameters and abundance and diversity of broiler chicken gut microbiome and selection of antibiotic resistance genes. *Front Microbiol* 13:905050.
4. C Greru,* R Thompson, V Gowthaman, S Shanmugasundaram, N Ganesan, TR Gopala Murthy, M El-Tholth, J Cole, J Joshi, R Runjala, M Nath, **NR Hegde**, N Williams, A Prendiville. **2022**. A visualization tool to understand disease prevention and control practices of stakeholders working along the poultry supply chain in southern India. *Humanit Soc Sci Commun* 9:169.
5. D Kumar, J Bayry, **NR Hegde**.* COVID19: a veterinary and One Health perspective. **2022**. *J Ind Inst Sci* 102(2):689-709.



The lab group (Left to right): Sashikanta Parida, Charanpreet Kaur (not working in the lab during 2022-2023), Dr. Nagendra Hegde, Srinivas Chaganti, Gauthami Sulgey, Pagala Jasmeen, Bhawna Baloda, Tejaswi Ambati, Devasmita Dutta, Palem Pranathi, Priya Gupta



Understanding the virulence mechanisms of the zoonotic pathogen, Brucella and development of improved vaccines and diagnostic assays for animal and human brucellosis.

Girish K Radhakrishnan

Research Group

PhD students

- Prachita Nandini (SRF)
- Varadendra Mazumdar (SRF)
- Kiranmai Joshi (SRF)
- Sushreerekha Mallik (JRF)
- Binita Roy (JRF)

Project Personnel:

- Deepak Kumar (Since October 2021)
- Richa Prakash (Since January 2022)

Collaborators

- Dr. Nagendra Barman, Dr. Durlav Bora and Dr. Arijit Shome (College of Veterinary Science, Assam Agricultural University)
- Dr. Rajeswari Shome (ICAR- National Institute of Veterinary Epidemiology and Disease Informatics)

Theme and Objectives of Research:-

Brucellosis is one of the major economically important zoonotic diseases worldwide, posing a serious threat to livestock and human health globally. Brucellosis in livestock and its impact on public health causes a median loss of Rs. 22,800 crores annually in India. There is no human vaccine for brucellosis, and the only option to control human infection is mass vaccination of susceptible animals. However, the available animal vaccines have significant drawbacks, including their infectivity to humans. Diagnosis of brucellosis is challenging, and the existing serodiagnostic assays need better sensitivity and specificity. Brucella

manipulates various host cellular processes to invade and multiply in professional and non-professional phagocytic cells. However, the host targets and their modulation by Brucella to facilitate the infection process remain obscure. The overall objectives of my research projects are (i) To develop improved vaccines and diagnostic assays for brucellosis; (ii) To understand the mechanisms by which Brucella modulate the host immune responses; (iii) To characterize host and bacterial factors involved in the invasion and intracellular survival of Brucella.

To develop novel vaccines and diagnostic assays for brucellosis

The existing live-attenuated vaccines for brucellosis, such as S19, RB51 for cattle, and Rev1 for goat/sheep, have many disadvantages, including their residual virulence and infectivity to humans. Toward developing next-generation vaccines for brucellosis, we designed two multi-epitope vaccine (MEV) candidates harboring T-cell epitopes from the immunodominant proteins of *Brucella*. Subsequently, we expressed and purified the MEV candidates. In addition, immunogenicity studies identified an immunodominant protein of *Brucella* (BM214) that induced a robust TH1-type response. To examine the protective efficacy of vaccine candidates, six to eight-week-old female BALB/c mice were immunized with MEV1 and BM214 with appropriate controls. Forty-five days after immunization, mice were challenged with virulent *B. melitensis*. Fifteen-day post-challenge, mice were euthanized, and spleens were removed aseptically to examine the load of *B. melitensis* by CFU enumeration. The mice vaccinated with MEV1 or BM214 provided significant protection against the challenge with virulent *B. melitensis*. Further evaluation of these vaccine candidates is in progress.

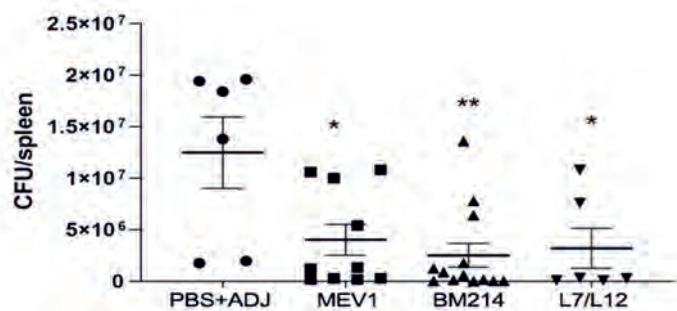


Figure 1. Bacterial load in the spleen of mice immunized with MEV1, BM214, L7/L12, or adjuvant alone. Mice injected with PBS+Adjuvant and L7/L12 protein were used as the negative and positive controls, respectively. All the data are presented as mean \pm SD. (*, $p < 0.05$; **, $p < 0.01$).

To understand the mechanisms by which *Brucella* modulate the host immune responses.

Brucella spp. encode the effector protein, Outer Membrane Protein 25 (Omp25), which has been reported to suppress NF- κ B activation and production of pro-inflammatory cytokines in macrophages. Omp25 belongs to Group III Omps that constitute the Omp25 and Omp31 families. Three paralogues are reported in the Omp25 family, such as Omp25b, Omp25c, and Omp25d. Omp25 suppresses the secretion of TNF- α , IL-6, IL-1 β , and IL-12 by mouse and human macrophages. However, the signaling pathways and the proteins, which Omp25 targets to attenuate

NF- κ B activation and secretion of pro-inflammatory cytokines, remain obscure. We found that Omp25 and its variants could efficiently suppress the production of pro-inflammatory cytokines induced by various TLRs. Therefore, we examined whether Omp25 interacts with TLRs or their adaptor proteins. We performed yeast-two hybrid assays and co-immunoprecipitation experiments to examine the interaction of Omp25d with TLRs and the adaptor proteins. We found that Omp25d interacts with TLR2/TLR4/TLR9/TIRAP/TRIF and TRAM (Fig. 2). We did not observe a positive interaction between Omp25d and MYD88 (Fig. 2). Further experiments are in progress to examine the significance of these interactions.

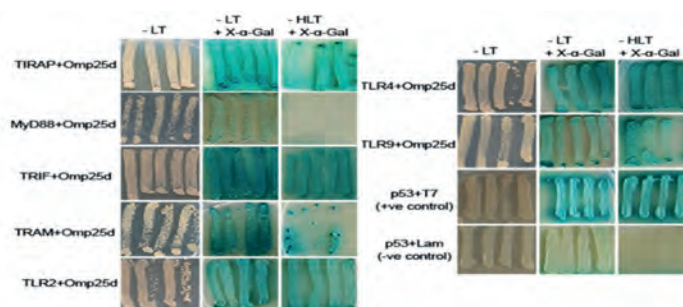


Figure 2. Yeast-two hybrid assays showing the interaction of Omp25 with TLRs and adaptor proteins. The yeast growth with blue color on the amino acid drop-out media indicates a positive interaction. AH109 yeast harboring the plasmid expressing Lamin fused with BD and T-antigen fused with AD served as the negative control, whereas the yeast carrying p53 fused with BD and T-antigen fused with AD served as the positive control.

To characterize host and bacterial factors involved in the invasion and intracellular survival of *Brucella*.

Brucella spp. invade and multiply in macrophages, dendritic cells, trophoblasts, and epithelial cells. *Brucella* employs a secretion system to introduce bacterial effectors into the infected cells. These proteins interfere with host cellular pathways allowing the pathogen to resist intracellular killing and build an intracellular niche favourable for replication. *Brucella* harbours a Type IV Secretory System (T4SS) encoded by the VirB operon that is involved in the secretion of many effector proteins in the infected macrophages. These effector proteins interact with components of cellular pathways to generate replication-permissive, ER-derived compartments, leading to the chronic persistence of *Brucella* in the host. Since the interplay between bacterial effectors and the host cellular machinery plays a critical role in the

invasion and persistence of *Brucella*, understanding these mechanisms is crucial for developing effective therapeutic and preventive measures for brucellosis. By employing a siRNA-based screening, we identified that the host Ubiquitin Specific Peptidase-8 (USP8) plays a crucial role in *Brucella* infection of macrophages. We observed that silencing of USP8 enhanced the uptake of *Brucella* into macrophages, whereas its overexpression suppressed the *Brucella* invasion. In addition, USP8 affected the interaction of *Brucella* with macrophages through the regulation of the availability of the plasma membrane receptor, CXCR4. Further, we found that *Brucella* suppressed the expression of USP8 at the initial stages of its infection to facilitate the infection of macrophages.

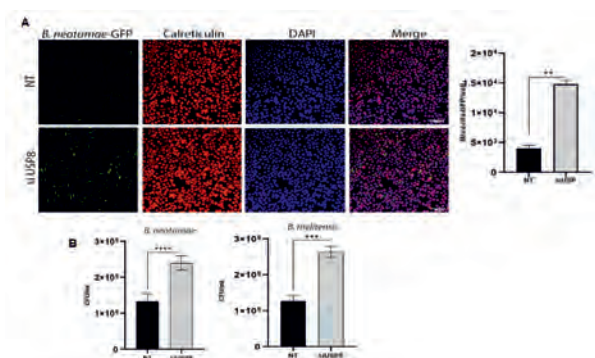


Figure 3. USP8 plays an essential role in *Brucella*-macrophage interaction. (A) *Brucella* invasion assay,

followed by analyzing the invaded *B. neotomae*-GFP by confocal microscopy. The cells were stained with anti-calreticulin and Alexa Fluor 647-conjugated secondary antibody to visualize the endoplasmic reticulum (red). The nuclei were stained with DAPI (blue), which was present in the mounting reagent. Scale bar, 20 μ m. The right panel indicates the quantification of intracellular *B. neotomae*-GFP using Harmony high-content analysis software. (B) *Brucella* invasion assay using iBMDMs downregulating USP8 expression. iBMDMs were treated with siUSP8 or NT, followed by invasion assay with *B. neotomae* or *B. melitensis*. The invaded *Brucella* were quantified by CFU enumeration.

Publication :

- 1) Kiranmai Joshi, Varadendra Mazumdar, Mohd Athar, HBD Prasada Rao, **Girish Radhakrishnan**, G. Taru Sharma (2023). A kaleidoscopic view of the advances in animal reproductive health research as India Turns 75. *ISSRF News Letter*, Issue 31, February 2023.



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Development of Leptospirosis vaccines and novel veterinary adjuvants

Syed M. Faisal

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Our research is focussed broadly in two areas. First, development of vaccine for Leptospirosis which is zoonotic and emerging infectious disease in India. Using modern biological tools and various approaches we are trying to understand how *Leptospira* interacts and modulates the host immune defences to establish successful infection. The aim is to identify crucial virulence factors that could be potential targets for development of vaccine and diagnostics for serovars prevalent in India. We are also identifying host factors to develop host-based therapies. We are also working towards development of novel and cost-effective veterinary adjuvants. Vaccines against some

of the economically important livestock diseases like brucellosis and FMD provide short term immunity and limited protection mainly due to unavailability of potent adjuvants. Hence, we envisage to develop potent adjuvants for vaccines used in Livestock. As part of Indo-US project we are also working towards development of novel adjuvanted vaccine against Foot and Mouth Disease. Broadly our research is aimed at-

Identification and characterization of immunomodulatory surface proteins of *Leptospira*: In perspective of developing subunit vaccines. *Leptospira* modulates the host innate response by exploiting its

surface proteins. It may modulate the innate activation, evade the complement attack by acquiring complement regulators (Factor H, C4BP) through surface proteins. It may also escape phagocytes by utilizing surface proteins that act as nucleases. These features contribute to establish successful infection in the host. We have characterised the immunomodulatory activity of second most abundant surface protein LipL21. LipL21 showed binding to complement regulator Factor H and host protease plasminogen and induced co-factor activity mediating degradation of C3b (Fig1A). LipL21 was able to rescue *Leptospira* from complement mediated killing (Fig1B). LipL21 exhibited nuclease activity as evident from degradation of DNA and was able to degrade Neutrophil extracellular trap (Fig1C). This project will contribute in identification of novel virulence factor/vaccine candidates.

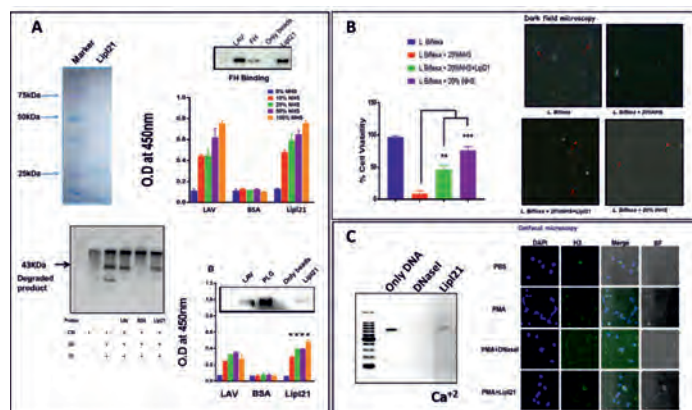


Figure 1. Screening of immunomodulatory activity of surface protein LipL21 of *Leptospira*. (A) Binding of purified LipL21 with Factor H and C4BP and subsequent co-factor activity. (B) LipL21 mediated rescue of *Leptospira* from complement killing in Human serum. (C) Nuclease activity and degradation of Neutrophil extracellular trap (NET) by LipL21.

Understanding the role of *Leptospira* LPS in innate immune modulation: Implications in developing LPS based conjugate vaccine

Lipopolysaccharide (LPS) is major antigen or virulence factor and play important role in modulating the host innate immune response. We purified LPS from three widely prevalent pathogenic serovars, Icterhaemorrhagie strain RGA (R-LPS), Pomona (P-LPS), Hardjo (H-LPS), and from non-pathogenic *L. biflexa* serovar semeranga strain Potac1 (S-LPS) collectively termed as L-LPS and tested their ability in inducing apoptosis in macrophages of mouse,

human and bovine origin. H-LPS induced higher apoptosis in mouse and bovine, whereas non-pathogenic S-LPS induced a high level of apoptosis in human macrophages (Fig 2A). Non-pathogenic S-LPS induced the highest amount of ROS production indicating NO-mediated late apoptosis (Fig 2A). To check if there is any differential activation of inflammasome in macrophages stimulated with LPS from different pathogenic serovars, we stimulated mouse macrophages with E-LPS and L-LPS. Our result shows that similar to E-LPS, L-LPS can activate canonical inflammasome characterized by expression of Cas1, ASC, and subsequent release of IL-1 β (Fig 2B). L-LPS upregulated expression of Cas11 and subsequent activity correlating to the production of IL-1 β indicating activation of non-canonical inflammasome (Fig 2B). This project is aimed at characterizing LPS and eventually develop LPS (Lipid A) based conjugate vaccines.

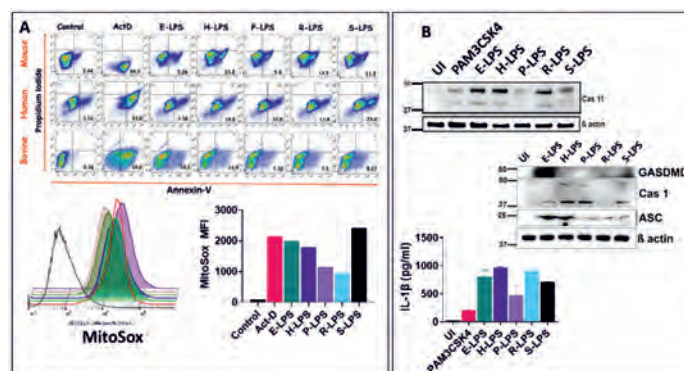


Figure 2. Innate immune characterization of LPS of *Leptospira* (A) Apoptosis induced by *Leptospira* LPS in mouse, human and bovine macrophages. (B) Activation of canonical and non-canonical inflammasome by *Leptospira* LPS and induction of IL-1 β .

Genomics assisted pathobiology to identify novel targets for diagnosis and therapeutic intervention(s) of Leptospirosis

In order to identify critical factors involved in pathogenesis of *Leptospira* and also the host factors involved in defence, we studied interaction of *Leptospira* with bovine macrophages in vitro. Using OMICS (Transcriptomics and Proteomics) we analysed the changes in both pathogen and host 24hrs post infection in vitro (Fig. 3A). We did conjoint analysis of transcriptome and proteome data using various bioinformatics tools/software. Our result demonstrated significant modulation of expression of both gene and protein (Fig 3B). Using bioinformatics

tools and Gene ontology we identified several pathways were modulated. We perform pathway analysis in order to identify the differentially regulated pathway in *L.interrogans* upon host macrophage interaction. The enriched pathway upon infection were metabolic pathway, cellular process, signal transduction etc at all time point post infection (Fig 3C & 3D). This project will contribute in the identification of critical factors of both pathogen and host for developing novel therapeutics, diagnostics and vaccines.

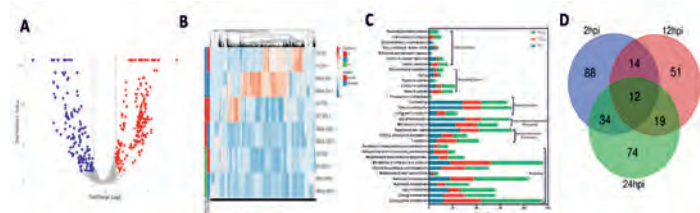


Figure 3. *Leptospira* and bovine host interaction studies using OMICS. (A) PCA plot showing upregulation and downregulation of proteins in bovine macrophages infected with pathogenic *Leptospira* (B) Heat map showing modulation of proteins at different time points. (C) Gene ontology showing modulation of different pathways in macrophages infected with *Leptospira* (D) Venn diagram showing number of proteins modulated at different time points after infection.

Development of novel immunomodulators/ adjuvants for veterinary vaccines.

In an effort to develop cost effective adjuvant for veterinary application we identified small molecule TLR4 agonists through computational approach. Few agonists (STL, 418, 501) were synthesized and tested in vitro for adjuvant activity. Out of these agonists STL showed immunomodulatory activity and activated mouse, human and bovine macrophages (Fig 4A). STL induced production of IL-6 and also modulated the expression of several cytokines and chemokines involved innate immune response (Fig. 4B). As part of Indo-US project for developing novel adjuvanted vaccine for Foot and Mouth Disease, we screened some of the TLR4 agonists (C1-2B182c, C2-2G177, C3-2G053, C4-2G036a, C5-2G023a, C6-2G202) on bovine macrophages. These agonists were able to induce activation of bovine PBMCs (Fig 4C). We tested the adjuvant activity of these agonists in mice by formulating them with model antigen OVA, and our result shows that these agonists were able to enhance

the antigen specific antibody response (Fig. 4D). This project will contribute in development of novel and potent veterinary adjuvants.

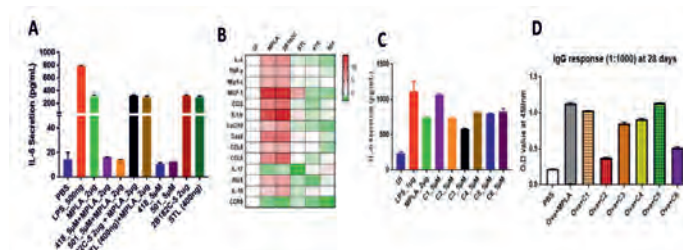


Figure 4. Development of veterinary vaccine adjuvants (A) Production of IL-6 by mouse macrophages stimulated with different TLR4 agonists identified through computational approach. (B) RT-PCR analysis showing modulation of different innate immune genes in macrophages stimulated with different TLR4 agonists. (C) Production of IL-6 by bovine PBMCs stimulated with different modified TLR4 agonists to identify most potent for testing against FMD. (D) Antibody response in mice immunized with OVA formulated with different TLR4 agonists to identify most potent agonist for testing against FMD.

Publications :

1. Sridhar Kavela, Pallavi Vyas, Jusail C.P., Sandeep Kushwaha, Subeer Majumdar, **Syed M. Faisal**. Use of an Integrated Multi-Omics Approach To Identify Molecular Mechanisms and Critical Factors Involved in the Pathogenesis of *Leptospira*. *Microbiology Spectrum*. February, 28, 2023. doi: <https://doi.org/10.1128/spectrum.03135-22>
2. Varma VP, Kadivella M, Kumar A, Kavela S, **Syed M. Faisal***. LigA formulated in AS04 or Montanide ISA720VG induced superior immune response compared to alum, which correlated to protective efficacy in a hamster model of leptospirosis. *Front. Immunol.* 2022. 13:985802. doi: 10.3389/fimmu.2022.985802
3. Rajpoot S, Kumar A, Gaponenko V, Thurston TL, Mehta D, **Faisal SM**, Zhang KY, Jha HC, Darwhekar GN, Baig MS. Dorzolamide suppresses PKC δ -TIRAP-p38 MAPK signalling axis to dampen the inflammatory response. *Future Med Chem.* 2023 Apr 27. doi: 10.4155/fmc-2022-0260. Epub ahead of print. PMID: 37129027.



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Tuberculosis and other Mycobacterial Diseases: Molecular Pathogenesis and Intervention Strategies

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Theme of Research

Broad areas of research focus of our group are molecular pathogenesis, and intervention strategies for tuberculosis (TB), other mycobacterial and zoonotic diseases including biomarker discovery, development of live attenuated vaccines, drug & probiotic based therapies. Following theme of research are ongoing: (A) Identification of biomarkers of susceptibility and/or resistance to TB in native and crossbred cattle, (B) Screening for inhibitors of a bacterial enzyme involved in biofilm formation and cell wall homeostasis to limit antimicrobial resistance (AMR), (C) Development of vaccines against TB and paratuberculosis in cows and

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other livestock via multimodal approaches, and (D) Development of a bovine pulmosphere model for TB pathobiology and drug screening.

Project specific summary

A) Identification of biomarkers of susceptibility and/or resistance to TB in native and crossbred cattle (NIAB & DBT funded, PI).

The project intends to study host responses in bovine-TB (bTB), and identify the TB-resistome signature in selected native cattle compared to crossbred cattle in India. The outcome of the project will elucidate a signature of protective immunity guiding the development of

appropriate diagnosis, vaccine, and therapy against TB in cattle. We have so far accomplished the following:

- Single and Multiplex PCR were developed to detect and differentiate mycobacterial species (MTBC, NTM, MTB, BTB, MAP). We have identified significant difference in a specific cytokine response that possibly represents one of the reasons why native cows are less susceptible to *M. tb* or *M. bovis* infection, which was also confirmed via in vitro PBMC based assays that revealed less bacterial growth in case of Sahiwal breed compared to that of SHF crossbred. We have isolated and performed WGS of 1 no. *M. orygis* strain from a bovine TB case. The bovine clinical isolate exhibited antimicrobial resistance towards Ethambutol, D-Cycloserine, and Kanamycin.
- Comparative transcriptomics analysis of PBMC responses to mycobacterial infection in animals belonging to selected native and crossbred cattle is undergoing.

B) Screening for inhibitors of a bacterial enzyme involved in biofilm formation and cell wall homeostasis to limit antimicrobial resistance (AMR) (ICMR funded, PI).

In this project, bacterial di-adenylate cyclase (DAC) is aimed as a potential drug target that is involved in biofilm formation and cell wall homeostasis in several medically important bacterial pathogens, and we intend to identify Natural Compound (NC) inhibitors of DAC that may augment action of existing antibiotics and prevent evolution of AMR. We have so far accomplished the following:

- A number of Natural Compound inhibitors were shortlisted via virtual screening of modelled structure of DisA/DacA protein of selected pathogenic bacteria. Adjunct use of Suramin- a previously identified DisA/DacA inhibitor with Methicillin showed reduction in the MIC of Methicillin in case of Methicillin Resistance (MR) *Staphylococcus aureus* clinical isolates, indicating the potential benefit of DisA/DacA inhibitor in combinatorial therapy.
- New Natural Compound Inhibitors that were identified and shortlisted via virtual screening in this project are currently being evaluated for their

effect on growth and biofilm formation of selected bacterial pathogens.

C) Development of vaccines against tuberculosis and paratuberculosis in cows and other domestic livestock. (DBT-Extramural & NIAB intramural project, PI).

- The project intends to employ multimodal vaccine development strategies, such as: (i) recombinant probiotic-based vaccine against MAP, - for the prevention and control of JD, (ii) live attenuated recombinant BCG vaccine expressing Mycobacterial antigens and chimeric multi-epitope antigen, and (iii) live/killed saprophytic mycobacterial [e.g., *Mycobacterium indicus pranii* (MIP)] based recombinant vaccine. We have so far accomplished the following:
- We have identified potential *M. bovis* antigens and epitopes via immunoinformatic approaches for construction of the multi-epitope antigen expressing BCG. We have generated rBCG expressing CRISPR-12a and recombineering proteins, an intermediate strain to be employed for the generation of antibiotic marker free rBCG expressing the multi-epitope chimeric antigen. The genetic engineering of BCG is undergoing. We have established a guinea pig aerosol TB infection model via infection dose calibration in GlasCol inhalation Chamber in the ABSL3 facility (Fig. 1). This model will be used for vaccine efficacy studies.

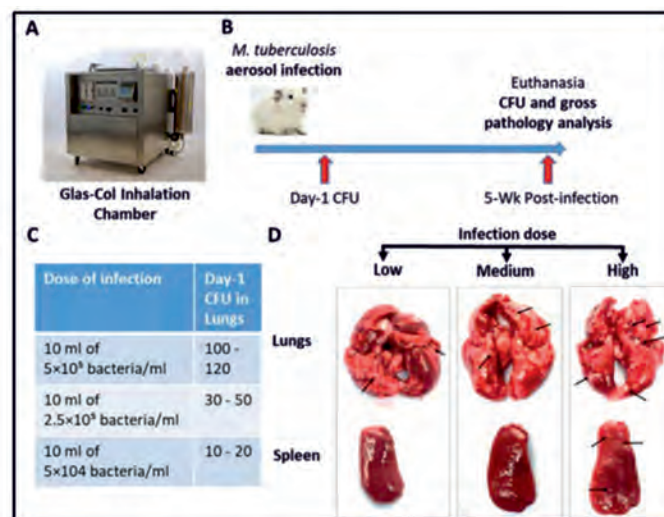


Fig. 1. Establishment of guinea pig model of aerosol *M. tuberculosis* infection. **A**, Glas-Col inhalation chamber; **B**, Experiment layout; **C**, Calibration of infection dose vis-à-vis Day-1 CFU; **D**, Representative gross pathological

image of Lungs and spleen at 5-week post infection. Black arrow: depicting primary tubercles.

➤ For development of probiotic based oral vaccine and therapeutics against JD in ruminant livestock, *Lactobacillus* spp. were isolated from goat intestinal tissue, characterized via bacteriological, biochemical, and molecular methods. Selected *Lactobacillus* isolates exhibited growth inhibitory, and anti-biofilm activity against ESKAPE group bacteria (Fig. 2). WGS were performed and AMR profiles were characterized for 5 nos potential *Lactobacillus* spp with beneficial properties. Cloning of selected immunodominant genes of MAP and expression in probiotic bacteria, and characterization of recombinant probiotic bacteria are undergoing.

D) Development of a bovine pulmosphere model for TB pathobiology, and drug screening. (NIAB intramural project, PI)

One of the major limitations in TB pathobiology and drug discovery studies is the lack of appropriate high throughput in vitro model that mimics TB granuloma cellular composition, structure and physiology, and can be monitored longitudinally to visualize the different stages of granulomatous pathogenesis. The project intends to establish an easy to propagate, scalable, cost-effective in vitro bovine 3D pulmosphere model and use this model with fluorescent reporter strain of virulent *M. tuberculosis* and *M. bovis* to longitudinally monitor the various stages of TB infection, evaluate host- bacterial interaction to identify novel bacterial and host therapeutic targets as well as screen new therapies. We have so far accomplished the following:

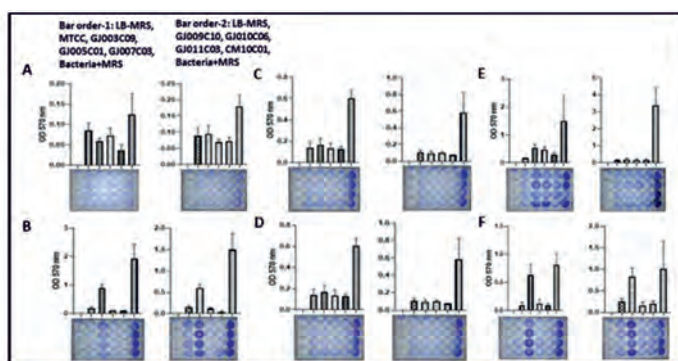


Fig. 2. Anti-Biofilm activity of *Lactobacillus* isolates against ESKAPE pathogens. Inhibition of Biofilm formation of A, *E. coli*; B, *S. aureus*; C, *K. pneumoniae*; D, *A. baumannii*;

E, *P. aeruginosa*; and F, *E. faecalis* pathogens in presence of Cell Free supernatant (CFS) of *Lactobacillus* isolates.

➤ We have established a methodology to generate bovine primary lung cell based pulmosphere and *M. tb* / *M. bovis* in vitro infection model (Fig. 3).

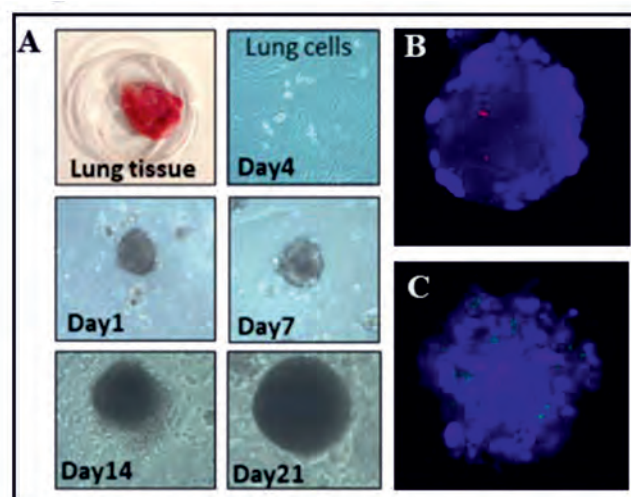


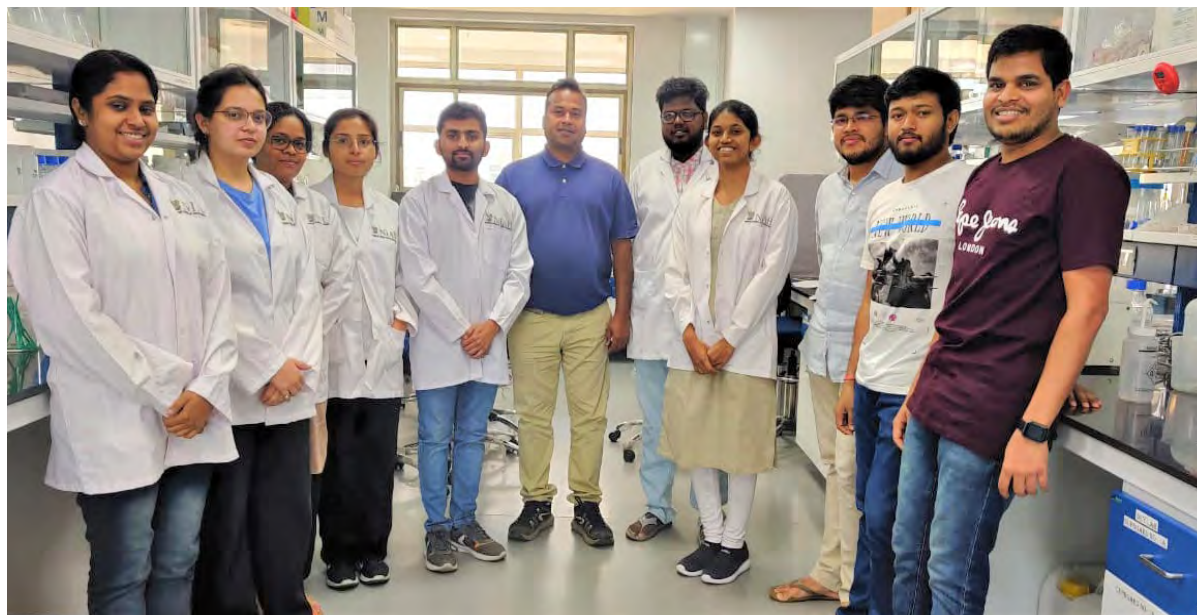
Fig. 3. Bovine primary lung cell derived 3-D pulmosphere. (A) Representative photographs showing different stages of pulmosphere development; (B) *M. bovis* BCG (red color) infected pulmosphere at day-7, and (C) *M. tuberculosis* (green color) infected pulmosphere at day-7.

➤ We have also performed transcriptomic and proteomic analysis of host responses during early stage of *M. bovis* BCG and *M. tuberculosis* infection of the bovine pulmospheres that revealed heightened presence of extracellular matrix proteins and structural elements in the 3D pulmospheres recapitulating its resemblance with the in vivo pulmonary milieu. The study identified upregulation of ECM receptor interaction, TNF, MAPK, PI3K-AKT, and RIG-1 signalling pathways in *M. tuberculosis* infected pulmospheres, while downregulation of complement, coagulation, PPAR, and Rap1 signalling pathways compared to BCG-infected pulmospheres. Further studies are ongoing to identify stage specific host and bacterial responses till four weeks post infection and establish an anti-TB drug screening platform employing this model.

Publications :

- Patent: WR. Dey RJ, **Dey B** and Cheung L. Methods of treating cancer using bacteria expressing c-di-

AMP. US Patent #11,590,177, file date: November 19, 2020, granted: Feb 28 2023. (based on previous work)



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Host Pathogen Interaction Studies on Animal and Avian Viruses

Madhuri Subbiah

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The lab focuses on economically important poultry virus namely, Newcastle Disease Virus (NDV) and porcine virus namely Porcine Reproductive and Respiratory Syndrome virus (PRRSV).

Research work on Newcastle disease virus: Newcastle disease virus (NDV) is an avian paramyxovirus that causes highly contagious respiratory, neurological and/or enteric disease in birds and the disease severity depends on the viral strain. NDV strains are broadly grouped into three pathotypes based on the severity of disease in the chickens: lentogenic, mesogenic and

velogenic. Our lab is studying the molecular biology of accessory viral proteins of NDV mesogenic strain Komarov, namely V and W proteins. NDV has a non-segmented, negative sense, single stranded RNA genome coding for six structural proteins: nucleocapsid protein (NP), phosphoprotein (P), matrix (M), fusion (F), hemagglutinin-neuraminidase (HN), and the large polymerase (L) protein. Additionally, V and W proteins are expressed from a single viral gene, P gene, by cotranscriptional RNA editing mechanism, which is unique to paramyxoviruses. All the three P

gene products share common N-terminal region, but their C-terminal regions vary in length and amino acid composition. Their unique C-terminal sequences probably contribute to their varied functions.

The V protein is considered to play the anti-interferon role during viral infection. Upon overexpression, the HA-V protein was found to localize in the cytoplasm in DF1 cells, a chicken fibroblast cell line (Fig. 1), however, we observed aggregation of V protein in the perinuclear region in NDV infected cells, implying a possible role of V protein during viral replication. We stained the dsRNA, the replicative intermediate, using anti-dsRNA antibody, mabJ2 in NDV infected cells (Fig. 2). Co-localization of both V protein and dsRNA was observed in NDV infected cells (Fig. 3). The possible role of V protein in viral replication upstream of IFN signalling pathway is currently being explored in the lab.

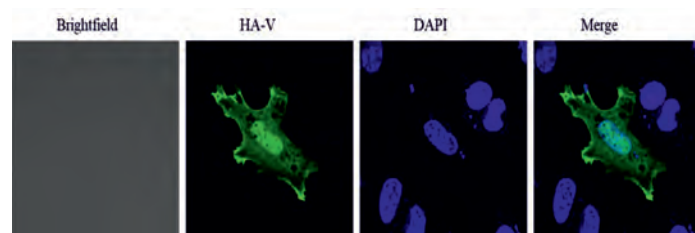


Fig. 1. Subcellular localization pattern of V protein in uninfected cells:

DF1 cells were transfected with HA-V plasmid. 24 hours post transfection, the cells were fixed and stained with anti-HA-FITC antibody and DAPI to stain the nucleus. V protein was found to localize in the cytoplasm abundantly while also seen in cytoplasm and nucleus in few cells.

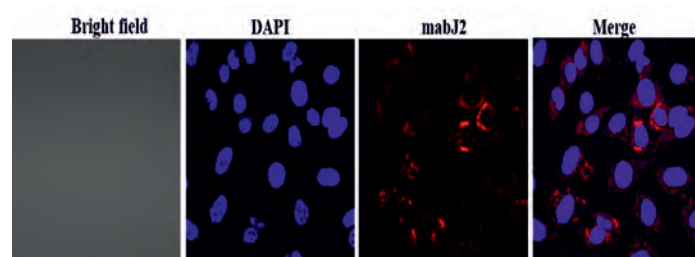


Fig. 2. Detection of dsRNA in NDV infected cells:

DF1 cells were infected with 1 MOI of NDV strain Komarov. The cells were fixed at 24 hrs post infection and stained with mab-J2, a dsRNA antibody (Red).

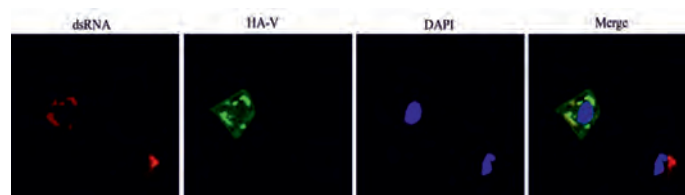


Fig. 3. Subcellular localization pattern of V protein in NDV infected cells

DF1 cells were transfected with HA-V plasmid and then infected with NDV strain Komarov. The cells were fixed at 12 hours post infection and stained for V protein using anti-HA-FITC antibody (Green) and the dsRNA using mabJ2 antibody (Red). Both V and dsRNA are found to be colocalized in the perinuclear region of the infected cells.

W protein was reported previously from our lab to localize in the nucleus. A total of 16 W protein mutants with alanine replacements at the nuclear localization signal (NLS) were generated and their localization pattern was studied (Fig. 4a, Fig 4b)

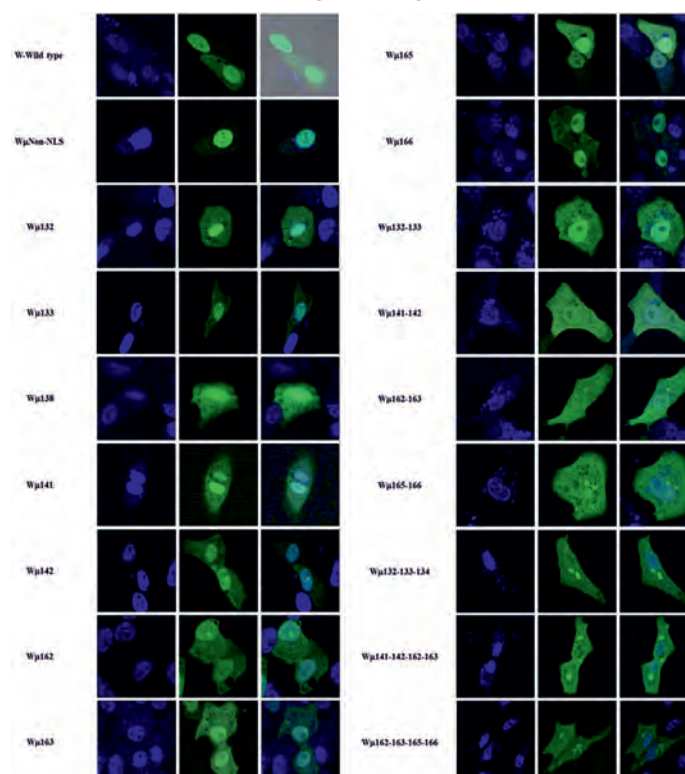


Figure 4a. Subcellular localization of W protein (wild type, non-NLS and NLS mutants)

Vero cells were transfected with pCMV-HA vector encoding different NLS mutants of W protein and were subjected to immunofluorescence analysis to study the effect of mutations on the localization of W protein.

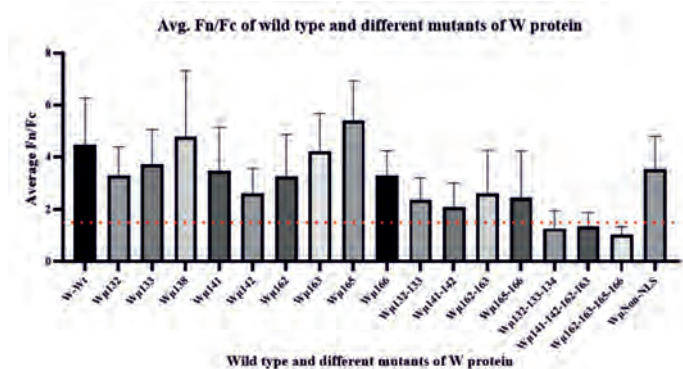


Figure 4b. Fn/Fc ratio for W protein (wild type, non-NLS and NLS mutants)

The ratio of relative nuclear to cytoplasmic fluorescence intensities of the wild type and different mutants of W proteins were calculated and it is observed that transfection with the quadruplet mutants retained most of the W protein in cytoplasm.

Research works on Porcine Reproductive and Respiratory Syndrome Virus: Our lab is also focusing on developing diagnostics for detection of Porcine Reproductive and Respiratory Syndrome Virus (PRRSV). PRRSV is one of the most economically important diseases in swine industry. It is an enveloped virus with a single-stranded positive-sense RNA of approximately 15 kb size. In June 2013, India had the first outbreak of PRRSV. The disease is observed in all age groups but is severe in pre-weaned piglets. Symptoms of infected pigs include respiratory problem, reproductive failure in pregnant sows and blue ears.

We had previously reported optimization of iELISA for detection of PRRSV antibodies. We have validated the same using 86 field sera samples and compared the results with commercially available kit (INgezim PRRS 2.0, Eurofins Technologies). The receiver operating characteristics (ROC) curve was performed with the positive and negative sera sample to determine the cut-off of the test. The highest Youden's index was considered to choose the appropriate cut-off limit, sensitivity, and specificity. Table 1 below shows the sensitivity and specificity of the *in house* developed iELISA and fig. 5 shows the cross reactivity data.

Table 1. Validation of *in house* developed iELISA for detection of PRRSV antibodies in sera samples.

S/P	Sensitivity %	95% CI	Specificity	95% CI
>0.4500	88.68	77.42% to 94.71%	81.82	65.61% to 91.39%

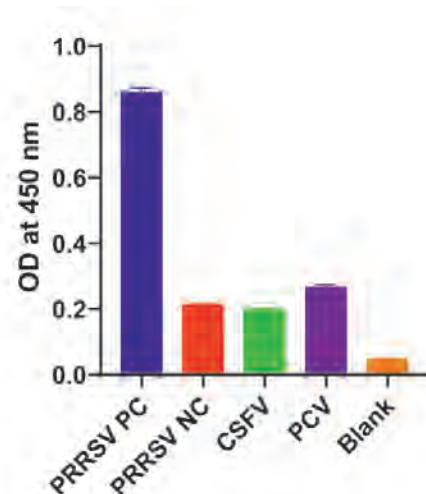


Fig. 5. Assessment of cross reactivity of the *in house* developed iELISA

To study the cross-reactivity, commercially available PRRSV positive sera, PRRSV negative sera, positive sera for Classical swine fever virus and Porcine Circovirus were used. The *in house* developed iELISA was found to be specific for PRRSV antibody detections.

In order to validate the iELISA by microneutralization viral assay, we are attempting to propagate the PRRSV strain in MARC145 cells, both received from our collaborator, Dr. Rajkhowa, in various cell lines (Fig. 6).

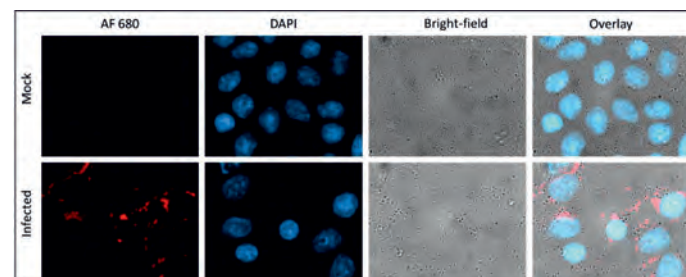


Fig. 6. Immunostaining of PRRSV infected MARC145 cells using anti-N antibody (Red).

MARC145 cells were infected with varying dilutions of the stock PRRSV and stained with anti-N antibody (red) and DAPI (blue) at 48 hours post infection to check for virus propagation in these cells.

Publications :

- Yenuganti VR, Afroz S, Khan RA, Bharadwaj C, Nabariya DK, Nayak N, Subbiah M, Chintala K, Banerjee S, Reddanna P, Khan N (2022) Milk exosomes elicit a potent anti-viral activity against dengue virus. *Journal of Nanobiotechnology* Dec;20(1):1-5.

- Rajendran R, Srinivasan J, Natarajan J, Govindan K, Kumaragurubaran K, Muthukrishnan M, Seeralan M, **Subbiah M**, Sundaram RS, Rao PL, Ramasamy S (2023) First report of Duck Hepatitis A virus genotype 2 in India. *Veterinary Research Communications* Jan 3:1-1.
- Putty, Kalyani, Pachineella Lakshmana Rao, Vishweshwar Kumar Ganji, Devasmita Dutta, Subhajit Mondal, Nagendra R. Hegde, Anand Srivastava, and **Madhuri Subbiah** (2023) First complete genome sequence of lumpy skin disease virus directly from a clinical sample in South India. *Virus Genes* 59, no. 2: 317-322.
- Nayak, B. Nagaraj, Kalaimagal Rajagopal, Revathi Shunmugasundaram, Pachineella Lakshmana Rao, Saraswathy Vaidyanathan, and **Madhuri Subbiah** (2023) Molecular characterization suggests kinetic modulation of expression of accessory viral protein, W, in Newcastle disease virus infected DF1 cells. *Virus Disease* DOI: 10.1007/s13337-023-00813-



The lab group (Left to right): Ruchi Malwade, Revathi Sundaram, Sunny Deval, Lakshmana P Rao, Dr. Madhuri Subbiah, Devasmita Dutta, Nagaraj Nayak, Kalaimagal Rajagopal and Subhajit Mondal.



Host-Parasite Interactions Studies in Animal Parasites

Anand Srivastava

Research Group

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- Achintya Sanju, Project associate I (since Nov 2021)

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- Dr. N.R. Hegde, NIAB
- Dr. Sandeep Kushwaha, NIAB
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Theme of Research

TTBDs have been recognized as a major cause of loss of production in ruminants. TTBDs are quite prevalent in tropical and subtropical countries of the world, especially in India. The estimated cost of production loss due to TTBDs in India is approximately US\$ 498.7 million/annum. In case of tick-borne diseases my research group focuses on Theileriosis. This disease causes unchecked proliferation of the leucocytes. The servity of this disease can be understood with the observation that the untreated cattle die in 3-4 weeks. The present vaccine and drug molecules have their own limitations. Hence, we are in the quest of developing

better interventions in form of vaccine and drug molecules for curing theileriosis. Currently, we are in the process of identifying newer targets for vaccine development and working on identification of new drug molecules.

Objectives

1. To identify novel drug molecules for treating Theileriosis (Intramural)

We would like to develop a cost-effective drug which could reduce the drug regime for treatment of theileriosis from a week to few days. We would like to repurpose the known drugs for the treatment of theileriosis.

2. To identify new molecules that are essential for the survival of *T. annulata* (Extramural)

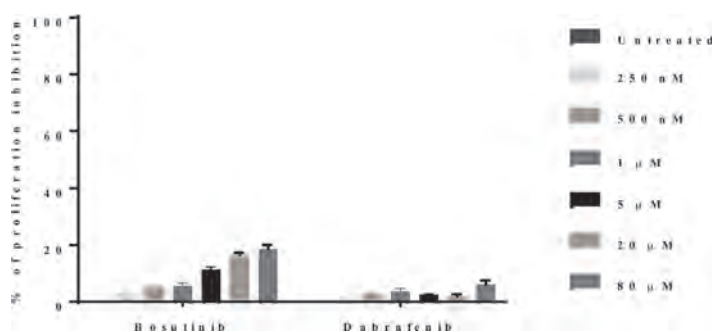
We are in quest to identify *T. annulata* proteins which are important for the transformation of the host cell and are essential for the survival of the parasite in the host cell. These proteins could be targeted for developing drugs or small molecules for treatment of theileriosis.

Abstract of each project

Genome-wide analysis for deciphering the kinome of *Theileria annulata* and identification of the drug targets:

Previously, we reported the kinome of *Theileria annulata*. We further analysed that kinome for identification of drug targets. Three protein kinases, TA16570, TA09820, and TA07000, had <40% identity with *Bos taurus* and >40% identity with the previously identified potential drug targets present in the Therapeutic Target Database (TTD). These three proteins were predicted to be essential for the survival of *T. annulata* and were selected as drug targets. Screening these drug targets in the Protein Kinase Inhibitor Database (PKID) led to shortlisting of five drugs. Only Dabrafenib, out of these five drugs, could bind to the ATP binding site (*in silico*) of the Calcium Dependent Protein Kinase 3 of both *T. annulata* and *Theileria parva*. Further, dabrafenib could inhibit the proliferation of *T. annulata* infected bovine leucocytes in 6 days proliferation assay with the IC₅₀ value of 0.66 μ M (Figure 1). Also, this drug did not have a cytotoxic effect on bovine peripheral blood mononuclear cells. In summary, the analysis of *T. annulata* kinome led to the identification of dabrafenib as a potential drug for treating theileriosis. We published this work Kar PP et al., Deciphering the kinome of *Theileria annulata* for identification of drug targets and anti-theilerial drug. Ticks Tick Borne Dis. 2022 Sep 29;13(6):102049.

a.



b.

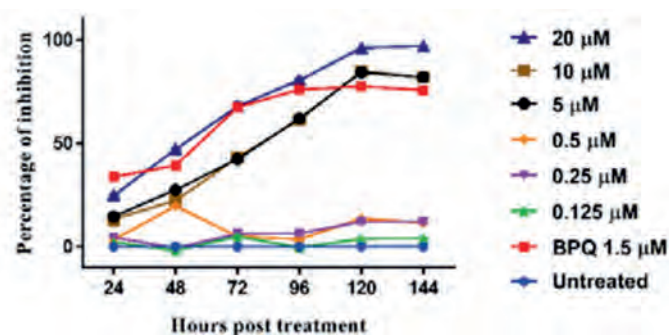


Figure 1: Dabrafenib specifically kills the Ana2014 cells. a. Dose-dependent curve showing the percentage of proliferation inhibition of bovine PBMCs after 24 h treatment with bosutinib, and dabrafenib at various concentrations (0.25 μ M, 0.5 μ M, 1 μ M, 5 μ M, and 20 μ M), b. percentage of proliferation inhibition of the Ana2014 cells by dabrafenib at various concentrations (0.25 μ M, 0.5 μ M, 1 μ M, 2.5 μ M, 5 μ M, 10 μ M, and 20 μ M) in comparison with untreated cells at various time points (24, 48, 72, 96, 120, 144 h). Buparvaquone (BPQ) was used as a standard drug control in the experiment. Data represented as mean \pm SD.

Work report

Identification of a novel drug, S344699, targeting CDK7 of *Theileria annulata*

In silico analysis of the tertiary structure of the TaCDK7

The domain analysis of TaCDK7 showed that TaCDK7 consists of ATP binding domain (91-99 aa), cyclin binding domain (138-144 aa), and C terminal T-Loop (216-284 aa) as represented in Figure 2a. The crystal structure of TaCDK7 is unavailable. Hence, BLASTp search was performed using the amino acid sequence of TaCDK7 as a query sequence. The 3NIZ_A was found to be closest to the TaCDK7. A reliable model was predicted using Modeller 9.19 (Figure 2b). The stereochemical quality and accuracy of the generated homology model displayed that 79.7 % of amino acid residues lying in the most favored ("core") regions, with 15.9%, 2.2%, and 2.2% residues in "additional allowed", "generously allowed" and "disallowed regions" of Ramachandran plot, respectively.

Fourteen compounds from MyriaScreen II library bind with TaCDK7 *in silico*

Virtual screening of the MyriaScreen II library, containing 10,000 drug-like compounds, against the ATP binding domain of TA07000 (Figure 1b). Further,

the compounds were arranged with their most negative binding energy and Lipinski's rule of five pertaining to physicochemical properties, including Molecular Weight (MW), Octanol/water partition coefficient (LogP), Hydrogen bond acceptors (H-acceptor) and Hydrogen bond donors (H-donors). Finally, 14 compounds were selected for experimental validation.

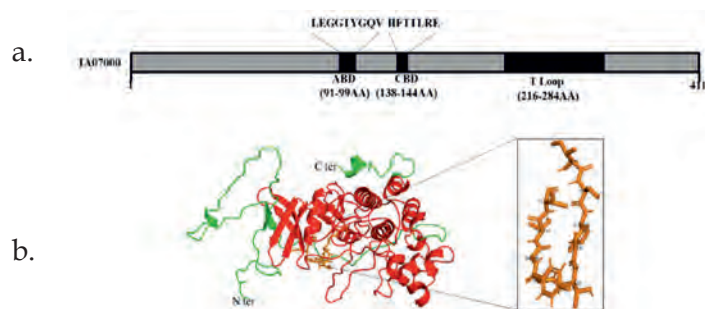


Figure 2: **a.** Schematic diagrams of full-length *T. annulata* TA07000 (TaCDK7), **a.** TA07000 putative ATP binding domain (ABD: 91–99 aa), cyclin binding domain (CBD: 138–144 aa), and T-loop domain (216–284 aa), **b.** Modeled structure of TA07000 showing ATP binding domain with ball and stick modeled.

Three compounds S34469, ST092793, and ST026925 were non-cytotoxic to BoMac cells MTT assay was performed to evaluate the cytotoxic ability of these 14 compounds on BoMac cells at 100 μ M concentration for 24 h. Three compounds, namely, S34469, ST092793, and ST026925 were found to be non-cytotoxic to BoMac cells (Figure 3).

Purification of recombinant TaCDK7

Recombinant TaCDK7 was expressed, and purified. The analysis of recombinant TaCDK7 by coomassie brilliant blue staining showed >95 % purity of the recombinant TaCDK7 (Figure 4a).



Figure 3: Cytotoxic effect of the selected 14 compounds on BoMac cells in 24 hours, obtained from virtual screening of

MyriaScreen II library at 100 μ M concentration, showing that S344699, ST092793, and ST026925 has no cytotoxic effect on BoMac cells.

Two compounds S344699, and ST092793, exhibit binding affinity for recombinant TaCDK7 in vitro The binding affinity of these three compounds towards recombinant TaCDK7 was analyzed by microscale thermophoresis (MST). The MST measurement was collected, keeping the highest concentration of 400 nM for any compound. We observed that S344699 showed a K_d value of \pm , ST092793 showed a K_d value of \pm , whereas ST026925 did not exhibit binding affinity towards TaCDK7 (Figure 4b).

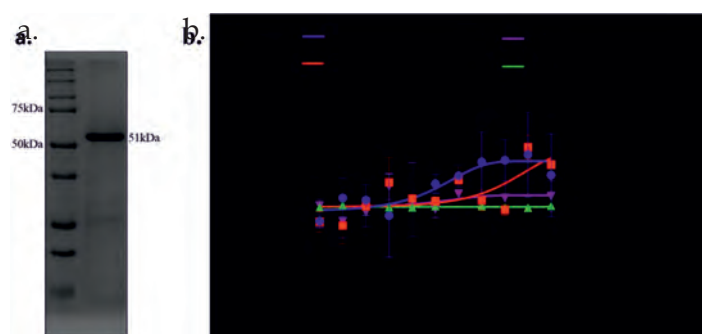


Figure 4: **a.** Coomassie brilliant blue stained gel showing affinity purified recombinant TA07000 (51 kDa), **b.** Microscale thermophoresis for the interaction between the TaCDK7 and selected compounds. ATP was used as a control. The curve shows fraction bound [-] against the compound concentration on a log scale.

S344699 controlled the proliferation of Ana2014 cells by targeting the parasite

Next, we tested the ability of compounds to cause parasite death and thereby regulation of the proliferation of Ana2014 cells. When Ana2014 cells were treated with various concentrations of the compounds for 24 h, only S344699 could inhibit the proliferation in a concentration-dependent manner, and ST026925 did not affect the proliferation (Data not shown). The IC_{50} values were calculated to be 48.76 μ M, >100 μ M for S344699 and ST092793, respectively. Further, the effect of S344699 on the parasite was observed by quantifying the levels of TaSP upon treatment. The western blotting analysis showed that S344699 treatment to Ana2014 cells decreases the levels of TaSP, suggesting that S344699 causes parasite death (Data not shown).

S344699 halts the Ana2014 cells in G2-M phase and causes apoptosis

To understand in which cell cycle phase TaCDK7 might play a key role, initially, Ana2014 cells were synchronized by blocking in G1/S phase by thymidine treatment. After 18 h post thymidine treatment, most cells accumulate in G1/S boundary (Figure 4 a). After replacing the culture media with RPMI 1640, cells were collected at various time points (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 12 h), and cell cycle analysis was performed. Most of the cells were in S phase and G2-M phase, at 2 h and 7 h, respectively (Figure 4 a,b). The expression levels of TaCDK7 were analyzed in S phase and G2-M phase by qRT-PCR. TaCDK7 was found to be highly expressed during G2-M phase. Also, S344699 treatment to Ana2014 cells at IC50 for 24 h led to an increase in G2-M cell population, suggesting a role of TaCDK7 in G2-M phase (Figure 4c,d).

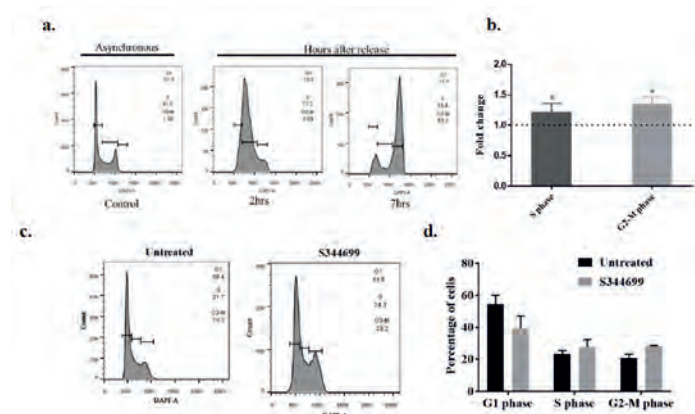


Figure 4: *a.* Ana2014 cells synchronized at S phase and G2-M phase at 2h and 7h, respectively, after double thymidine treatment, *b.* Transcriptional level of Ta07000 at S phase and G2-M phase, *c.* S344699 treatment leads to the increase in the G2-M population in Ana2014 cells, *d.* Quantification of the percentage of cells in different cell cycle phases.

S344699 leads to activation of autophagy but m-TOR independent cell death in Ana2014 cells

To study the role of S344699 on autophagy, we examined the level of LC3B after treatment with S344699. The western blot shows that S344699 leads to the conversion of LC3B (Figure 5a, b). Further, the level of Akt and p-Akt was examined after treatment, and we observed that both Akt and p-Akt decreased after treatment with S344699, suggesting that treatment with S344699 leads to the activation of the process of autophagy. However, we have observed that there is an increase in the m-TOR. This indicates that S344699 leads to the m-TOR independent autophagy cell death in Ana2014 cell.

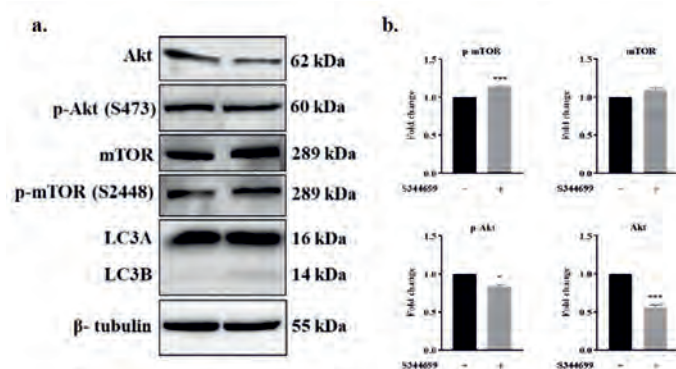


Figure 5: Autophagy pathway activation in Ana2014 cells treated with S344699. *a.* Western blot analysis of Ana2014 cells treated with S344699 showing the conversion of LC3A to LC3B. Western blots show a decreased level of Akt and p-Akt while an increase in mTOR and p-mTOR upon S344699 treatment to Ana2014 cells, *b.* Fold change in expression of Akt, p-Akt, LC3B/A, mTOR, and p-mTOR after normalization of western blot data. N=3. Data presented as mean \pm SD. * represents $p < 0.05$, ** represents $p < 0.01$, and *** represents $p < 0.001$, compared with the untreated group.

S344699 induces an extrinsic pathway of apoptosis

To study the molecular pathway on the inhibition of proliferation of Ana2014 cells the apoptotic cell population was determined by annexin V-FITC/PI apoptosis detection kit. FACS analysis showed an increased apoptotic cell population after S344699 treatment (Figure 5a). Further, no increase in DNA fragmentation was observed upon treatment with S344699 (Data not shown). Since Reactive Oxygen Species (ROS) activate several signaling pathways that lead to apoptosis, the ability of the S344699 to generate ROS was further analyzed. There is no increase in ROS after treatment with S344699. Additionally, there is no effect of the addition of an anti-oxidant NAC prior and after treatment with S344699 (Data not shown).

Activation of the caspases is essential for the induction of apoptosis. Hence, we examined the

cleaved form of caspase 8 and caspase 3 after treatment with S344699 for 24 hr. Cleaved

caspase 8 and caspase 3 was detected after 24 h of treatment (Figure 6b). Further, the downstream pathway of caspases was analyzed. A cleaved form of PARP after treatment with S344699 was observed (Figure 5b). Since there is no involvement of ROS, we looked into the effect of S344699 on the marker of

the extrinsic pathway of apoptosis. TNF-R1 signaling activates caspase 8 cleavage by recruiting the adaptor protein TRADD. Further, we observed that S344699 treatment leads to the overexpression of the TNFR1 and TRADD, which suggest that S344699 treatment leads to the extrinsic pathway of apoptotic cell death in Ana2014 cells Figure 6c).

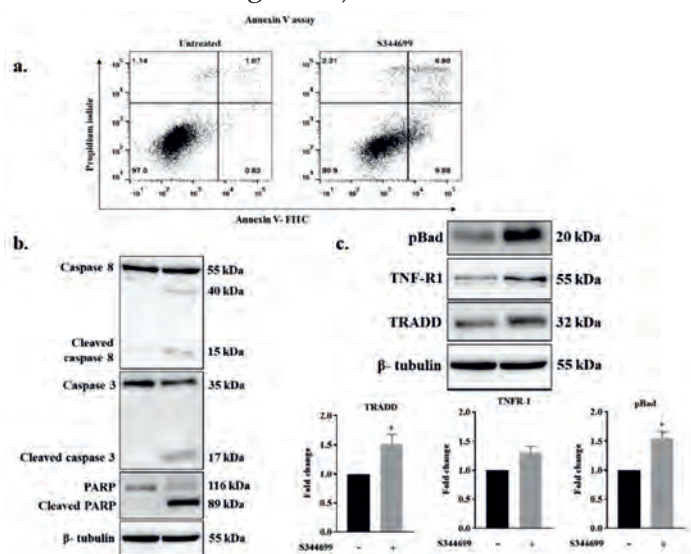


Figure 6. *a.* Dot plot showing Annexin V FITC- PI staining of untreated and S344699 treated Ana2014 cells for 24 hrs, *b.* Western blot analysis show the cleavage product of caspase 8, caspase 3, and PARP upon S344699 treatment to Ana2014 cells, *c.* Western blot analysis show increased TNFR-1 and TRADD upon S344699 treatment to Ana2014 cells. Fold change in expression of TNF-R1 and TRADD after normalization of western blot data. N=3. Data are presented as mean \pm SD. * represents $p < 0.05$ compared with the untreated group.

Future Plans

- **Role of selected TaCrks and cyclins will be performed.**

Selected TaCrks and cyclins will be cloned in a suitable vector and recombinant protein would be expressed and purified. The recombinant protein would be tested for their binding ability. Also antibodies will be raised in suitable animal.

Publications :

1. Araveti PB, Kar PP, Kuriakose A, Sanju A, Kumar KA, **Srivastava A***. Identification of a novel interaction between Theileria Prohibitin (TaPHB-1) and bovine RUVBL-1. Microbiology Spectrum. 2023 DOI: 10.1128/spectrum.02502-22 (*corresponding author)
2. Putty K, Rao PL, Vishweshwar Kumar Ganji, Devasmita Dutta, Subhajit Mondal, Nagendra Hegde, **Anand Srivastava**, Madhuri Subbiah. The first report on the complete genome sequence of Lumpy skin disease virus in India. 2023 *Virus gene* 23 Jan 2023, 59(2):317-322 DOI: 10.1007/s11262-023-01967-3
3. Kar, P.P., Araveti, P.B., Kuriakose, A. **Srivastava A***. Design of a multi-epitope protein as a subunit vaccine against lumpy skin disease using an immunoinformatics approach. *Sci Rep* 12, 19411 (2022). DOI: 10.1038/s41598-022-23272-z (*corresponding author)
4. Kar PP, Araveti PB, **Srivastava A***. Deciphering the kinome of Theileria annulata for identification of drug targets and anti-theilerial drug. *Ticks Tick Borne Dis.* 2022 Sep 29;13(6):



The lab group (Left to right): Prajna Parimita Kar, Atlanta Bohra, Ritika Rajput, M. Rajitha, Krishnagaanth M, Dr. Anand Srivastava, Macha Vijay, Amit Lalwani, Amar Prajapati and Achintya Sanju



Study of Virulence, Antimicrobial Resistance and Host Pathogenesis in Intracellular Pathogen Infections

Paresh Sharma

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Our group is interested in understanding the mechanism of disease pathogenesis behind major intracellular parasites using advanced biotechnology tools. The major intracellular pathogens which we are studying are livestock-related hemoprotozoan parasites and mastitis-causing bacterial pathogens. The focus is to identify and characterize the genes involved in host-parasite interactions/virulence/drug resistance, leading to developing tools/strategies for controlling the disease. We are also working on the global problem of antibiotic resistance, which affects animal and humans and is a global threat of increasing concern. We focus on surveillance of AMR pathogens, understanding

antibiotic resistance mechanisms, identifying new drug targets, and repurposing the available drugs.

1: Identification of Genetic and Antigenic variations in Hemoprotozoan parasites causing Livestock Infections:

The apicomplexan parasite, *Theileria annulata*, is the most prevalent hemoprotozoan in livestock, causing significant economic losses worldwide. Even though several *Theileria* parasite species have been identified in the field, just two pathogenic species, *Theileria annulata* and *Theileria parva*, are responsible for most economic losses in the cattle industry. Accurate quantification based on nucleic acid amplification is necessary to avoid the spread of pathogens, making early

diagnosis essential. Droplet digital PCR (ddPCR) stands out for absolute parasite quantification because it combines microfluidics with the TaqMan test. This helps deliver maximum accuracy without needing a reference curve. In this study we assessed the efficacy of ddPCR as a detection tool for the bovine theileriosis (BT) caused by *Theileria* parasites. We developed and validated a duplex ddPCR method that detects and quantifies the *Theileria* genus (18S rRNA) and identifies clinically significant *Theileria annulata* parasites (TaSP) in experimental and clinical samples. ddPCR was shown to be as effective as qPCR throughout a 10-fold sample dilution range. However, ddPCR was more sensitive than qPCR at lower parasite DNA concentrations and reliably assessed up to 8.5 copies/ μ L of the TaSP gene in the infected DNA (0.01 ng) samples (Fig: 1). We also established a duplex ddPCR test using TaSP and 18s rRNA to diagnose *Theileria* species and *T. annulata* parasites in field samples.

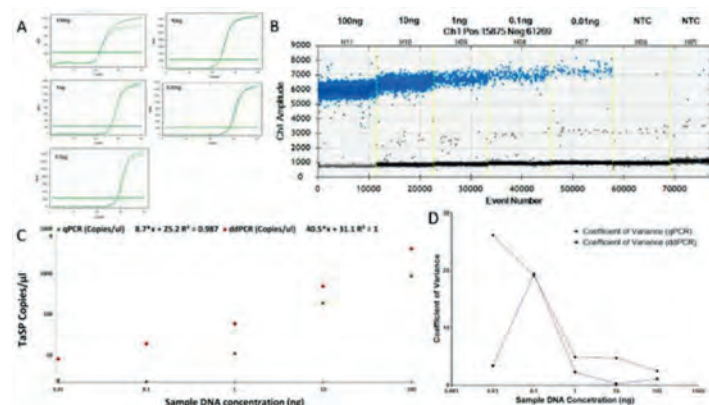


Figure 1. Quantification of TaSP gene using ddPCR and qPCR: The output generated by the (A) qPCR and (B) ddPCR instruments upon the usage of sample DNA at varying concentrations ranging from 0.01 ng to 100 ng, where the ddPCR output is based on the number of positive droplets denoted by blue dots, where each dot represents a droplet. (C) TaSP copies/ μ L was checked in *Theileria* infected sample's DNA at varying concentrations ranging from 100 ng to 0.01 ng through 10-fold dilutions (p -value = 0.002). (D) Coefficient of variance (CV) comparison between ddPCR and qPCR values for copies/ μ L of TaSP gene.

We found ddPCR to be very accurate and reproducible,

and it could follow therapeutic success in clinical cases of theileriosis. In conclusion, our ddPCR assays were highly sensitive and precise, providing a valuable resource for the study of absolute parasite quantification, drug treatment monitoring, epidemiological research, large-scale screening, and the identification of asymptomatic parasite reservoirs in the pursuit of BT eradication.

Other programmes

The goal of this study is to investigate the prevalence of AMR in ESCAPE pathogens in bovine mastitis cases and determine the factors that contribute to their occurrence. The study involves collecting milk samples from dairy cows with mastitis and identifying the microorganisms causing the infection using bacterial culture and molecular methods. The results of this research project will provide valuable insights into the prevalence and potential transmission routes of AMR in ESCAPE pathogens in bovine mastitis cases. This information can help inform the development of effective control measures to reduce the spread of these pathogens in the dairy industry and prevent the development of antimicrobial resistance.

Publications :

1. Shweta Murthy, Akash Suresh, Debabrata Dandasena, Sakshi Singh, Madhusmita Subudhi, Vasundhra Bhandari, Vandna Bhanot, Jaspreet Singh Arora and **Pareesh Sharma**. Multiplex ddPCR: A promising diagnostic assay for early detection and drug monitoring in Bovine theileriosis. *Pathogens* 2023, 12(2), 296; <https://doi.org/10.3390/pathogens12020296>.
2. Madhumanti Barman, Debabrata Dandasena, Akash Suresh, Vasundhra Bhandari, Sonam Kamble, Sakshi Singh, Madhusmita Subudhi, **Pareesh Sharma**. Artemisinin derivatives induce oxidative stress leading to DNA damage and caspase-mediated apoptosis in *Theileria annulata* transformed cells. *Cell Commun Signal.* 2023 17;21(1):78. doi: 10.1186/s12964-023-01067-7.



The lab group (Left to right): Dr. Paresh Sharma, Debabrata Dandasena, Sakshi Singh, Sonam Kamble Madhusmita Subudhi, Amruthanjali T, Akash Suresh.



Molecular Parasitology

Abhijit S. Deshmukh

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- Chitti Raju Khandavalli (ICMR – JRF)
- Rajkumar Gurupwar, PF (ICMR – SRF)

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Trainee:

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- Pawan Singh, MSc trainee (Since Jan. 2023)

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- Dr. Sandeep Chaudhari, NVC, Nagpur
- Dr. Shilpshri Shinde, NVC, Nagpur

Theme and Objectives of Research

We study the protozoan parasite *Toxoplasma gondii*, which is responsible for abortion and neonatal mortality in animals and humans. Current research focuses on three important areas i) understanding the transcript maturation (Capping and splicing) process; ii) determining the prevalence of *Toxoplasma* in farm animals; and iii) development of a point-of-care test to detect *T. gondii* infection in animals and humans. The ongoing research aims to identify potential drug targets, determine disease burden and create a robust diagnostic tool for mass-screening of samples in the field.

Identification and characterization of splicing regulators in *Toxoplasma gondii*

T. gondii survival greatly depends on changes in gene expression during different life cycle stages. Such changes require an extensive network of regulatory mechanisms, such as transcriptional, post-transcriptional, and epigenetic control of genes. RNA splicing plays a major role in transcriptional and post-transcriptional control in metazoans, but the process needs to be understood in *T. gondii* and, indeed, in any protozoa species. The removal of introns from pre-mRNA and the ligation of exons to produce mature mRNA is catalyzed by the spliceosome, a

highly dynamic, multiple-megadalton molecular machine. The major subunits of the spliceosome are small nuclear ribonucleoprotein protein complexes (snRNPs - U1, U2, U4, U5, and U6). In addition to snRNP proteins, the spliceosome contains numerous non-snRNP proteins, many of which play essential roles during splicing. Given the unique gene organization of *T. gondii* with introns present in 75% of genes, the spliceosome complex formation, proteins involved, and spliceosome specificity merit investigation. To identify the protein components of the spliceosome, extensive homology searches were performed on the *T. gondii* genome database as queries of various spliceosomal protein sequences from *S. cerevisiae*, human, *P. falciparum*, *C. parvum*, and *T. brucei*. This enabled us to identify 17 Sm/Lsm, 7 U1 snRNP, 18 U2 snRNP, 10 U4/U6 snRNP, 7 snRNP, and 22 Prp19 complex and associated proteins. Altogether, we identified 81 splicing-related factors in *T. gondii*. While Prp19 and associated factors, particularly, Cdc5, are evolutionary highly conserved splicing factors required for the activation of the spliceosome in model eukaryotes, their characterization, and role in spliceosome assembly in *Toxoplasma* is yet to be studied. We investigated two uncharacterized key splicing proteins, Prp19 and Cdc5 of *Toxoplasma gondii*, and found that these proteins exclusively localized in the parasite nucleus. The role of Cdc5 in the spliceosome-complex formation was determined using interaction studies with snRNA and LC/MS/MS of Cdc5 immunoprecipitated elutes. Cdc5 specifically interacts with U2 and U6 snRNAs suggesting that it is a catalytically active protein required to form an active spliceosome complex. The Cdc5 immunoprecipitation followed by LC/MS/MS resulted in 47 splicing-related proteins indicating its role in spliceosome assembly formation. Further, *T. gondii* putative Prp19 and Cdc5 genes functionally complement *S. cerevisiae* Prp19 and Cef1 (Cdc5 homolog) genes, respectively.

Seroprevalence, risk factors, and serological cross-reactivity for diagnosis of *Toxoplasma gondii* and *Neospora caninum* infections in goats

T. gondii and *N. caninum* are genetically related cyst-forming protozoan parasites that cause reproductive failures in ruminants. Given the limited information on the epidemiology of these infections in goats in India, the study aimed to estimate the seroprevalence, assess antibody cross-reactivity for diagnosis, and identify associated risk factors. A total of 695 goat sera from central India were evaluated for antibodies to *T. gondii* and *N. caninum* infections using

MAT (for *Toxoplasma*)/NAT (for *Neospora*), ELISA, and IFAT (for tachyzoite and bradyzoite stages) (Fig 1A-D). The seroprevalence rate of *T. gondii* and *N. caninum* infections was 56.9% and 10.9%, respectively. Interrater agreement (kappa value - κ) was calculated to assess agreements between various diagnostic assays, using the IFAT as the gold standard (for detecting both infections), the agreements for MAT/NAT ($\kappa = 0.97$) and the ELISA ($\kappa = 0.95$) were excellent. The acute infection among seropositive goats were determined using IgG avidity and PCR (*Toxoplasma* B1 gene: 131 bp and *Neospora* NC5 gene: 328 bp). Among seropositive goats $\geq 80\%$ had high IgG avidity and $< 10\%$ of animals had low IgG avidity antibodies for both infections. Most low IgG avidity goats were PCR positive for the TgB1 gene (94.4%) or Nc5 gene (85.7%). When the serological cross-reactivity was analyzed using invasion assay at a serum titer of ≥ 200 , more than 90% *T. gondii* positive sera showed no host cell invasion of *N. caninum* and vice versa (Fig. 1E). Largely, the serological results indicate that cut-off serum dilution of $\geq 1:200$ for ELISA and IFAT and $\geq 1:25$ for MAT/NAT avoids serological cross-reactivity between *T. gondii* and *N. caninum*. Further, the Univariate and multivariate analyses showed that adult animals (> 2 years), reservoir hosts, and extensive rearing systems are common risk factors for these infections. This study revealed that *T. gondii* and *N. caninum* infections are highly prevalent in this region and the use of an appropriate cut-off serum dilution is necessary to avoid crossreactivity between these closely related parasites.

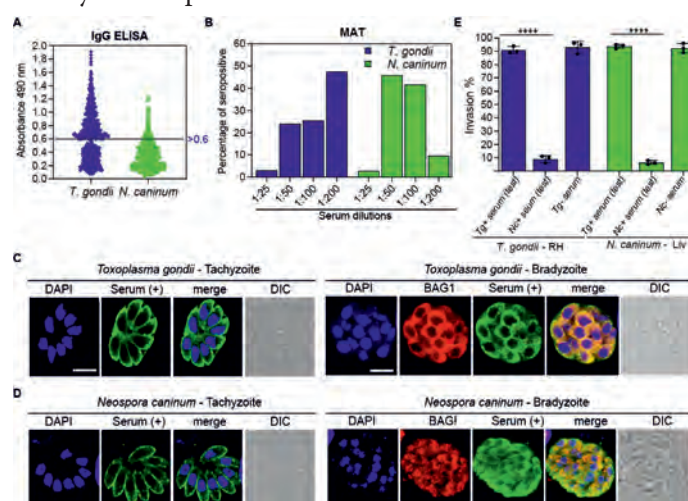


Fig. 1. Seroprevalence of toxoplasmosis and neosporosis in goats. (A–B) Antibodies to *T. gondii* and *N. caninum* were determined using ELISA and MAT/NAT. For ELISA, cut-off (mean) > 0.6 was calculated as the mean OD plus 2 standard deviations (SD) values obtained with negative samples. (C,

D) Representative IFAT images of intracellular tachyzoites and bradyzoite of *T. gondii* (C) and *N. caninum* (D) using seropositive (+) samples. Scale bar = 5 μ m. (E) Percent invasion of tachyzoites of *T. gondii* - RH and *N. caninum* - Liv parasites incubated with seropositive samples of *Toxoplasma* and *Neospora*.

Publications :

1. Hebbar BK, Roy M, Mitra P, Chavhan K, Chaudhari S, Shinde S, **Deshmukh AS.** (2022) Seroprevalence, risk factors, and serological

cross-reactivity for diagnosis of *Toxoplasma gondii* and *Neospora caninum* infections in goats in India. *Microbial Pathogenesis*, 173(Pt A):105780. doi: 10.1016/j.micpath.2022.105780.

2. Mitra P, Banerjee S, Khandavalli C, **Deshmukh AS.** (2022) The role of *Toxoplasma* TFIS-like protein in the early stages of mRNA transcription. *BBA-General Subjects*, 1866(12):130240. doi: 10.1016/j.bbagen.2022.130240.



The lab group (Left to right): Megha Roy, Bhavan Hebbar, Chitti Raju, Poonam Kashyap, Dr. Abhijit S. Deshmukh, Rajkumar Gurupwar, Aditya Velidandi, and Kalyani Aswale



Research Theme

C. Reproductive Biotechnology & Genomics



Photo Courtesy: Himanshu R. Patil



Laboratory of Molecular Reproduction

H.B.D. Prasada Rao

Research Group

PhD students

- Lavakumar (DBT – SRF)
- Aradhana Mohanty (CSIR – SRF)
- Anjali Kumari (DBT – JRF)
- Ajit Kumar (CSIR-JRF)
- Praveen Birajdar (DBT-JRF)

Project Personnel:

- Ranjit Kumar- PA (Since Feb 2022)

Collaborators

- Dr.Satyanshu Kumar
- ICAR – Directorate of Medicinal & Aromatic plant research, Anand, Gujarat.
- Dr. Yogendra Kalenahalli, ICRISAT-IN
- Dr.Krishna Rao, TIFR, Hyderabad

Theme and Objectives of Research

The focus of our laboratory at NIAB is to understand (a) the quality control pathways in oocyte and spermatocyte development to extend livestock fertility, (b) molecular mechanisms of meiotic processes, such as homologous recombination and synapses in livestock to increase the fecundity and to prevent birth defects, (c) causes and treatments of ovarian disorders in livestock.

Development of large animal models to unravel the mechanisms of Cystic ovaries in livestock species

Ovarian cysts are fluid-filled structures with a

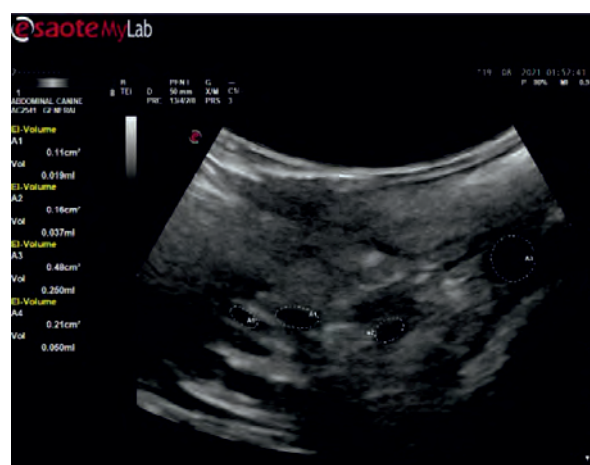
minimum diameter of 20mm that can last more than six days without a corpus luteum and interfere with normal ovarian cyclicity in females. Female cystic ovaries can develop in either follicular or luteal cysts, two pathological types. Although clinically distinct, both are connected in terms of aetiology and pathophysiology. Some cows spontaneously resolve the cysts before they are identified during the regular pre-breeding examination, while others acquire huge cysts that seriously impair reproductive performance. All existing treatment procedures are expensive, provide only temporary relief, and have a high recurrence rate; therefore, the scientific community

must research and develop novel approaches to treat cystic ovaries in livestock. Consequently, it is essential to establish large animal models to comprehend the aetiology.

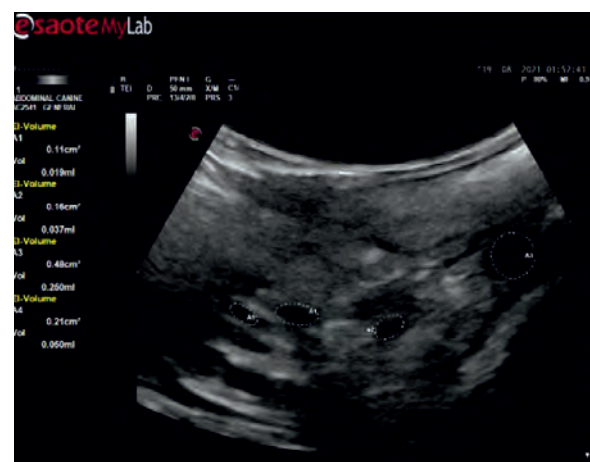
The incidence of ovarian cysts has been reported to be from 6 to 19% in farm animals and 5–10% in women of reproductive age, leading to infertility. The cystic ovarian disease is a severe cause of reproductive failure in dairy cattle. Androgens are considered the main culprit of ovarian cysts, and therefore, androgenization of animals is the most frequently used approach to induce symptoms that resemble cystic ovarian disease. In the present study, our primary objective is to develop a large animal model to study ovarian cysts in livestock. To achieve this, we prepared DHEA pellets for goat treatment using a dose of 0.5 % steric acid, 10% PEG, 5% Eud, 1.6 mg/100 gm, 5 mg of 20-micron cellulose powder, and 5 mg ethylcellulose (ethoxy content 48%). Two-month-old goats were divided into three groups, i.e., DHEA treated (n=4), Vehicle control (n=3), and no injection control (n=3). Pellets were implanted intradermally by a pellet injection gun. Blood and fecal samples were collected before and after treatment. The ovarian morphology and endocrine profiling were continuously monitored to check the cystic ovaries formation. The ultrasound imaging results indicate that three out of four treated goats show cystic ovaries with a significant difference ($p < 0.05$) in the size of the follicles and volume of the DHEA treatment group fluid-filled follicles compared to VC and NIC. In addition, significant ($p < 0.05$) differences in LH, FSH, TSH, prolactin, IGF-1, DHEA, and AMH levels in DHEA-treated groups as compared to no injection and vehicle control groups in goats. Further, to check the effect of cystic ovaries on the estrus cycle, we performed vaginal cytology. The VC and NIC goats show the estrus phase, but the DHEA-treated goats persistently show an anestrus stage, suggesting that the DHEA-induced goat's animal models have abnormal fertility. Taken together, our data suggest that post-natal goat ovarian cystic models can be generated by DHEA implantation. Further, studies are necessary to study the aetiology of ovarian cysts in DHEA-induced goat cystic ovary models.

a. Ultrasound imaging

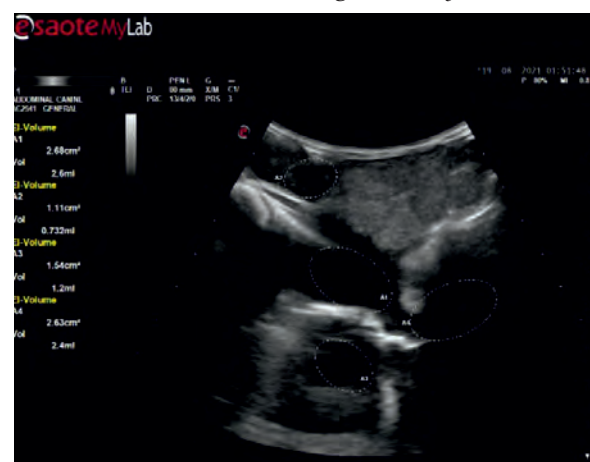
No treatment goat ovary



Vehicle control goat ovary



DHEA treated goat ovary



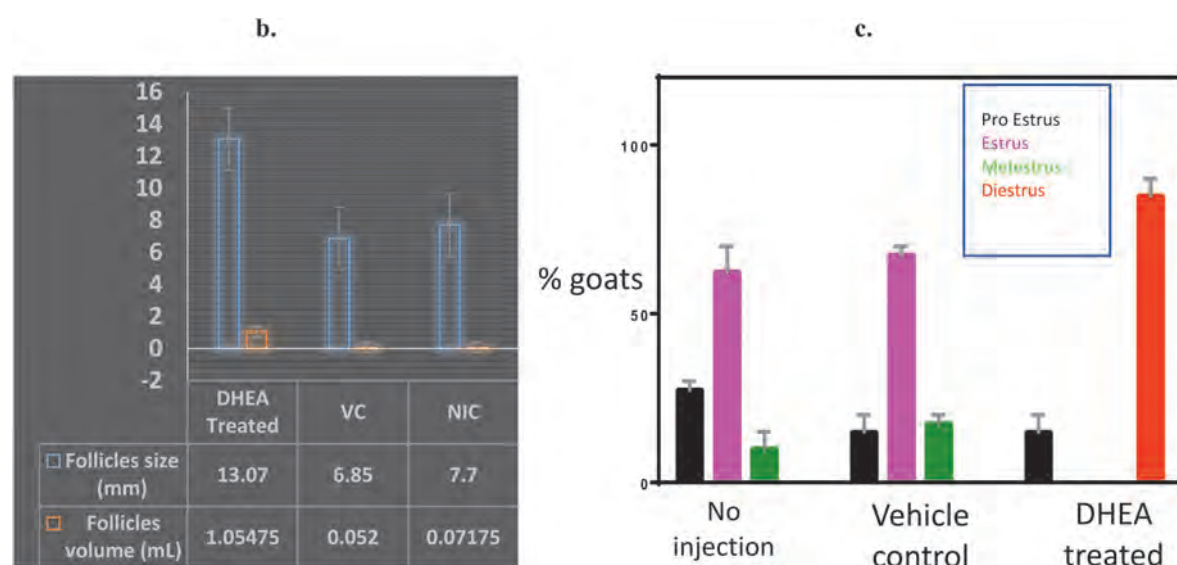


Fig1: Top row: a. Ultrasound imaging of the goat ovaries without any treatment, vehicle control and DHEA implant. **Bottom row: b.** Quantification of follicle size and volume in the above goats. **c.** The bottom right graph is the estrus behaviour of the above goats.

Publications :

Singh, A.K., Kumar, S.L., Beniwal, R., Mohanty, A., Kushwaha, B., **Prasada Rao, H.B.D.** Influence of the Ovarian Reserve and Oocyte Quality on Livestock Fertility. Sustainable Agriculture Reviews, vol 59. Springer, (2023). Cham. https://doi.org/10.1007/978-3-031-21630-5_4



The lab group (Left to right): Preethi, Anjali Kumari, Kiran, Lava Kumar, Ranjit Kumar, Aradhana Mohanty, Dr. Ajay Singh and Dr. H.B.D. Prasada Rao



Biopharming Using Farmed Animals and Avenues for Obtaining Sperm with Elite Trait

Nirmalya Ganguli

Research Group

PhD students:

- Srimoyee Koner
- Satarupa Dutta

Project Fellows/Trainees:

- Anandhi R.
- Harshada Thawari
- Amisha Bhattacharya
- Shankhamala Chatterjee (Since Jan 2023)
- Soma Behera (Upto Feb 2023)
- Diprosome Roy (Upto August 2022)
- Dewanshu Sharma (Upto June 2022)

Collaborators & Affiliations

- Dr. Subeer S. Majumdar, NIAB, Hyderabad
- Dr. Pankaj Suman, NIAB, Hyderabad
- Dr. Syed Faisal, NIAB, Hyderabad
- Dr. Santosh Dasari, NIAB, Hyderabad
- Dr. Neelesh Sharma, SKUAST, Jammu
- Dr. Kadirvel Govindasamy, ICAR (Centre for NEH Region, Shillong)
- Dr. Tarun Bhattacharya, ICAR DPR, Hyderabad

Theme of Research:

The theme of research in my laboratory is establishing new, more accessible techniques for the generation of transgenic farm animals or animals with targeted somatic genomic modification of mammary epithelial cells by developing new methods for direct transfection of mammary gland for using them as a bioreactor for the generation of biotherapeutics and nutraceuticals; Germ cell/Stem Cell transplantation studies to explore avenues for the production of sperm with elite characteristics; Generation of transgenic mice to develop mice model of farm animal diseases;

and a system for the study of functional genomics of farm animals.

Objectives:

1. To establish new, more accessible techniques for making transgenic/genome edited farm animals; to develop new methods for direct transfection of the mammary gland; to use these technologies for generating animal bioreactors expressing biotherapeutics in their milk for increasing affordability.
2. To establish germ cell/stem cell transplantation

in farm animals to increase the production of elite bull sperm.

3. Generation of transgenic mice to develop mice model of farm animal diseases as well as to study farm animal functional genomics.

1. Production of Therapeutic Protein in Milk (bovine FSH and LH, Human Factor8 and Tissue Plasminogen Activator (TPA):

We are taking a multidimensional approach to target the udder glands of farm animals to convert them into a bioreactor. For the efficient production of these therapeutic proteins in milk, we have to develop 1) an Efficient milk-specific expression vector, 2) an Efficient method for transgenesis in farm animals, and alternatively, 3) a Method for direct transfection of mammary epithelial cells in the udder gland.

We have isolated different mammary epithelial cell specific promoters from the genome of the Indian river buffalo and generated milk specific mammalian expression vectors. We also hypothesized that along with a strong promoter, an efficient signal peptide is also required to secrete the expressed protein out of the cell. We are working to check the strength of signal peptides of various milk protein genes for the efficient secretion of exogenous protein in milk. For this, we have chosen the signal peptide of 5 significant milk protein genes (β -Casein, α -S1-casein, α -S2-casein, β -Lactoglobulin, and α -Lactalbumin). We have generated a fusion protein construct by cloning signal peptides of these milk protein genes with the cDNA of EGFP and human interferon- γ . We are validating the strength of these signal peptides by quantifying the secreted form of these proteins by ELISA.

Primarily, we are working towards expressing bovine FSH and LH in the animal bioreactor. For parallel expression of both the α and β subunits of bovine FSH and LH in a multi-cistronic expression vector, we have adopted and standardized a synthetic biology approach based on "Extensible Mammalian Modular Assembly" (EMMA) cloning technology. We have successfully generated an expression vector for mammary gland specific expression of bovine FSH. We are also working to express human Tissue Plasminogen Activator (hTPA) in mammary epithelial cells of goats. The cDNA of human TPA was procured and validated by restriction digestion followed by cloning under

Cytomegalovirus immediate early (CMV) promoter and mammary gland specific buffalo β -Lactoglobulin promoter. We are validating the expression of these constructs in-vitro as well as in-vivo. We have successfully standardised testicular transgenesis in the rabbit. It has been proved that rabbits are better suited to be a bioreactor for producing biotherapeutics in milk. We have generated a transgenic rabbit that expresses bovine FSH in its milk which was estimated by ELISA (Fig. 1)

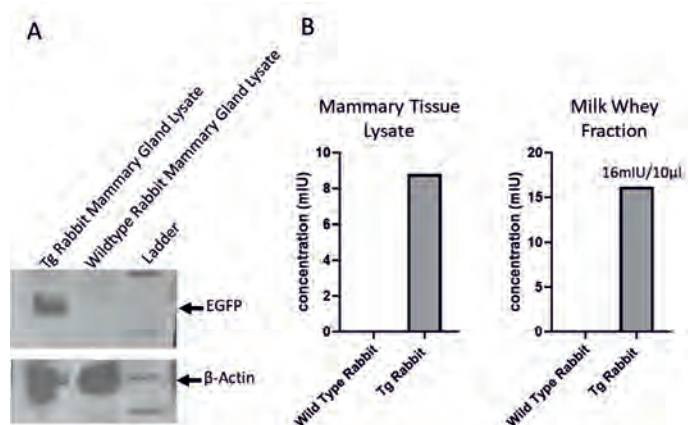


Figure. 1: A. Image showing western blot analysis of the mammary gland of the transgenic rabbit as compared to wildtype rabbit for detection of EGFP expression. B. Image showing ELISA analysis of milk and mammary gland lysate for detection of expression of bovine FSH.

We are trying to standardize easy testicular transgenesis in farm animals, specifically in goats and pigs, by transfecting goat and pig germ cells through electroporation. In the purview of difficulties in the transfecting maximum number of germ cells in the testis of large animals that eventually result in poor transgene bearing sperm in the ejaculate, we are designing and validating the transgene construct, which will help in sorting out transgene bearing sperms. We have fused the EGFP with a signal peptide and transmembrane domain of the sperm surface protein Basigin (BSG-EGFP) and cloned it under the CMV promoter. Such fusion protein will help in anchoring EGFP in the surface of the sperm tail membrane, facilitating the sorting out of such sperm from the ejaculate. Transgene bearing sperm was generated that showed expression of EGFP on the tail upon electroporation of this transgene construct in the mice testis. These EGFP expressing sperm was sorted using MACS and used for IVF that resulted in the generation of mice embryo expressing EGFP (Fig. 2)

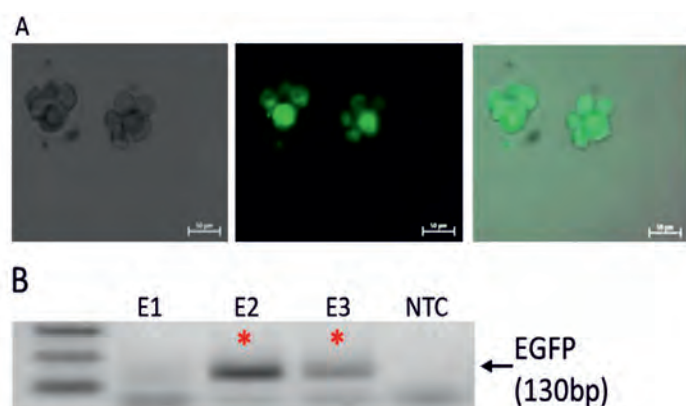


Figure. 2: A. Image showing expression of EGFP in the mice embryo generated through IVF using sorted EGFP expressing transgene bearing sperm. B. image showing PCR analysis of IVF embryo for detection of the transgene.

We have also developed a transfection method using nanoparticles of PEI of molecular weight 25 kDa tagged with medium-chain fatty acid by anhydride chemistry. Robust transfection of primary mammary epithelial cells and many other cell types in-vitro was obtained using this nanoparticle. We have filed the Indian patent application for the same. This work was published in the Journal of Biotechnology and Bioengineering. We carried on this work in collaboration with Dr. Subeer S. Majumdar's LAB at NIAB.

Recently we have got one extramural grant sanctioned from ICAR- NASF, in which we are working on the generation of expression vectors for robust expression of human therapeutic protein in the albumin fraction of the eggs of the transgenic chicken. We have initiated the work and annotated the promoter region of the chicken ova albumin gene. We are proceeding with the isolation of this promoter followed by the generation of a mammalian expression vector harboring it.

2. Germ Cell Transplantation in Farm Animals:

We are establishing the culture of germ cells from goat/buffalo and an easy method of evacuation of germ cells from the testis in large animals without nonspecific cytotoxic effect. There are methods available for evacuation of the testis, but this often creates immune susceptibility in animals leading to deaths sometimes, generating restrictions for use in farm animals. The development of a safe method for germ cell depletion is urgently needed to extrapolate germ cell transplantation in farm animals with full potential.

We are working to establish isolation and culture of spermatogonial stem cells/germ cells from goat testis. We are also attempting to isolate and culture the germ cells from pig testis. We aim to generate goat sperm with a knock-down/knock-out myostatin gene/gene locus. It was previously shown that Mstn knock-out/knock-down transgenic animals develop more muscle mass which is exploited for increasing meat production. We are working to generate multiple shRNA (targeted for mstn mRNA) expressing constructs for complete disruption of mstn mRNA by shRNA mediated knock-down specifically in muscle cells. Alternatively, we are working for a complete knock-out of the Mstn gene locus using CRISPR/Cas9 system. In this direction, we have developed a single CRISPR/Cas9 expression vector to get a complete knock-out of the Mstn gene using up to 7 different guide RNAs in one go. In-vitro experiments suggest a satisfactory level of knock-out of the Mstn locus using this construct. We will use these constructs (shRNA and CRISPR-Cas9 system) to generate engineered/transgenic goat germ cells in culture, followed by selection and transplantation of these germ cells into the evacuated testis of the goat.

3. Genetic Basis of Udder Gland Development:

We aim to decipher the biological pathways and mechanisms that govern mammary gland development and lactation which has commercial importance. We wish to decode the role of various genes and regulatory RNAs (miRNA, long noncoding RNA) involved in mammary gland development and lactational output. We have established isolation and culture of mammary epithelial cells from goat mammary glands obtained at different developmental times. We have also generated an immortalised goat mammary luminal epithelial cell line by expressing TERT integrated site specially in-frame under cytokeratin19 gene locus. This cell line will be used as an in vitro model for studying mammary gland development. We have developed a pipeline for the analysis of RNAseq data. Using this pipeline we have analysed the RNA seq of the mammary gland at the different developmental times, available in the public domain. The information acquired from this analysis will be validated in vitro in mammary epithelial cells as well as in the mice model to find genes, which may play a vital role in mammary gland development, maintaining milk volume or expression of various milk components (proteins, fats, etc.).

Publication :

1. Goutam Ulgekar, Dilpreet Kaur, Venkateswaran Ganesan, Souvik Sen Sharma, **Nirmalya Ganguli***, Subeer S Majumdar*. Anhydride chemistry based Hexanoylation of polyethylenimine increases transfection efficiency and expression of tagged DNA for therapeutic proteins in cultured cells. *Biotechnol Bioeng*, 2022 Nov;119(11):3275-3283. doi: 10.1002/bit.28196. Epub 2022 Aug 6. (*Co-Correspondence Author)
2. Anuradha Mishra, **Nirmalya Ganguli**, Subeer S Majumdar, and Deepak N Modi. Loss of HOXA10 causes endometrial hyperplasia progressing to endometrial cancer. *Journal of Molecular Endocrinology*. 2022. doi.org/10.1530/JME-22-0051



The lab group (Left to right): Amisha Bhattacharya, Anandhi R., Dewanshu Sharma, Diprosom Roy, Dr. Nirmalya Ganguli, Satarupa Dutta, Srimoyee Koner, Soma Behera.



Aptamer and antibody-based point-of-care diagnostics for better animal production and health

Pankaj Suman

Research Group

PhD students

- Pankaj Kumar
- Yathiraj Rao T
- Deepali Rawat
- Ankita Das
- Komal Birader
- Muskan

Research Associate:

- Anitha A.

Project Associates:

- L Sai Keerthana (Since June 2022)

- Deepalakshmi G (Till Jan 2023)
- Darshini Ghode (Till March 2023)

Trainees:

- Nistha Shrimali (July to December 2023)
- Hardik Jain (July to December 2023)
- Twinkle Thomas (Since Jan 2023)
- Pravin Sahoo (Since Jan 2023)

Collaborators & Affiliations

- Dr. Syed M Faisal, NIAB Hyderabad
- Dr. Nilesh Nayee, NDDB Anand
- Dr. Sujit Saha, NDDB Anand
- Dr. Ajay Dang, NDRI Karnal
- Dr. Marina Rajdurai, DRILS Hyderabad

Theme of Research

Our laboratory is working towards devising strategies for sustainable livestock farming in arid and semi-arid regions to improve animal production and health through development of affordable point-of-care diagnostics. We have core strength to identify biomarkers for various clinical conditions to develop aptamer/antibody-based diagnostics.

Point-of care aptasensors

Aptamers are ssDNA or RNA molecules, with comparable sensitivity and specificity as antibodies.

Our lab has been working on ssDNA oligonucleotides or aptamers aiming to develop diagnostics for various issues being faced by livestock sector.

1. Venom and toxins: Previously we reported the development of aptamer selection platform for venom and toxins (Venom-SELEX). The *Bungarus caeruleus* (common krait) venom was used to establish the prototype for venom specific aptasensor development. *In silico* and paper-based screening methods were optimized to select AK-2 aptamer for development of a lateral flow-based assay for venom detection in both buffer and serum (LOD: 3.82 µg; Figure 1). It has

also been confirmed that the AK-2 aptamer recognizes the unique venom protein of phospholipase family. The aptamer is also being used to develop quantitative electrochemical aptasensor. We have also performed the proteomic analysis of Big Four snake venom to identify common venom component to use as a biomarker to confirm a venomous snake bite in clinical case.

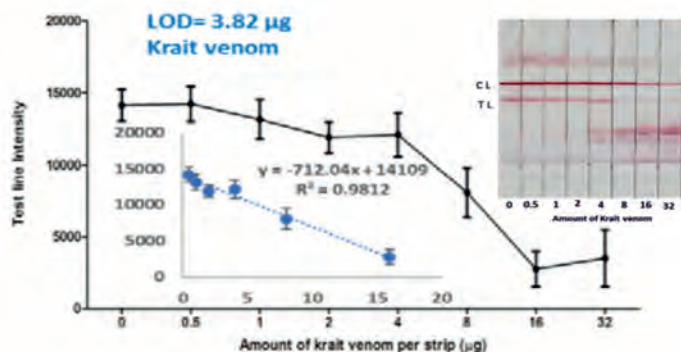


Fig 1: AK-2 aptamer was conjugated on gold nanoparticles to detect venom at the test line (TL). Presence of krait venom in the sample leads to competitive displacement of the gold aptamer complex at the test line. Depletion of test line was indicative for the presence of venom in the sample.

As a new initiative, we have started purifying the crude Botulinium toxin received from the Central Institute of Fisheries Technology, Kerala to select theranostic aptamers to develop affordable diagnostics and a neutralizing aptamer to treat toxicity.

2. Progesterone and Luteinizing hormone (LH) aptasensor

In livestock, specifically buffalo the estrus detection is crucial to attain the optimum productivity. A cost-effective, deployable, and quantitative progesterone and LH biosensor is desirable for prediction of time for estrus and ovulation for achieving high success rate following artificial insemination. Using screen printed gold electrode, dual biomarker (progesterone and LH) aptasensor has been developed and validated for its suitability to detect the analytes in biological fluid (P4 sensor: LOD: 0.53, 0.91, and 1.9 ng/mL in spiked buffer, undiluted milk, and serum, respectively, with the dynamic range of detection from 0.1 to 50 ng/mL in buffer and 0.1 to 30 ng/mL in both milk and serum; LH sensor: LOD: 0.19, 0.22 and 0.4 ng/mL in buffer, serum and urine respectively). Both the aptasensors exhibited a very high level of correlation (κ value (> 0.9) with ELISA. Experiments are being performed to

validate the performance of such sensors under field condition.

3. Multiplex antibiotic detection in milk and meat:

Good quality animal products like milk, meat etc are vital for maintaining proper public health. However, inadvertent use of antibiotics as therapeutic agents and growth promoters in the dairy industry has left consumers in a dilemma about its safety upon long term consumption. We have been working in the development of a colorimetric aptasensor for the detection of oxytetracycline in milk. This work is being carried out in collaboration with C-CAMP Bangalore for translation and commercialization. The impedimetric biosensor has been developed using chloramphenicol aptamer (Dynamic range: 10 pg to 1 µg/mL).

Quantitative early mastitis detection kit

An iron nanoparticle-based method for detection of subclinical as well as clinical mastitis was developed to quantify the presence of somatic cells in milk on the basis of naked eye visualization of the aggregates. For quantitative detection, a smart phone enabled image processing program has been developed. The device can detect mastitis within 20 minutes in a quantitative manner under field condition.

Devising interventions and tools for sustainable livestock farming in arid and semi-arid conditions

The world is facing issues of climate change with prolonged dry spell and rise in temperature leading to poor farming practices, scarcity of fodder and water. Under such a situation sustainable livestock farming in arid and semi-arid region is going to be a challenge. Yadgir (an aspirational district of Karnataka) receives



Fig-2. Demonstration of preparation of nutrient rich fodder blocks from locally available farm produce.

below average rain fall and has poor agricultural practices. We are working towards establishing a model for sustainable goat farming through training the landless and marginal farmers and introduction of technologies to prepare nutrient rich fodder block from local farm produce, open nucleus breeding practices and construction of goat sheds. Farmers are being trained to develop entrepreneurship skills for large scale goat farming. In addition to these we have also started analysing the proteomic and metabolomic profile of livestock from arid and semi-arid region during peak summer and under nutritional scarcity to identify the earliest biomarker to predict heat stress and negative energy balance which ultimately lead to post-partum anoestrus, prolonged gestation interval and poor reproductive efficiency.

Patent (Filed):

Suman P, Kumar P, Birader K. Aptamers for the detection of progesterone. **Indian patent, Application No. 202241067962** (25/11/2022).

Publication :

Kumar P, Birader K and **Suman P**. 2023. Development of an Impedimetric Aptasensor for Detection of Progesterone in Undiluted Biological Fluids. *ACS Pharmacology & Translational Science*, 6, 1, 92-99. doi: 10.1021/acsptsci.2c00



The lab group (Left to right): Pankaj Kumar, Dr. Pankaj Suman, L. Sai Keerthana, Ankita Das, Muskan, Deepali Rawat, Anitha K, Twinkle Thomas, Prabin Sahoo, Komal Birader



Reproductive Biotechnology

Santosh Kumar Dasari

Research Group

PhD students

- Akanksha Garg (CSIR-JRF)
- Gopal Nare (CSIR-JRF)

Project Trainee:

- Embari Rashmitha
(M.Sc. Trainee, since Jan 2023)

Collaborators

- HBD Prasada Rao, NIAB
- Nirmalya Ganguli, NIAB
- Shailesh Sharma, NIAB

Education and training:

Dr. Santosh Kumar Dasari pursued his B.Sc in Microbiology, Genetics and Chemistry from Osmania University followed by M.Sc. in Biotechnology from University of Hyderabad. Dr. Dasari completed his Ph.D in Molecular Reproduction from Indian Institute of Science (IISc), Bangalore. Later, he moved to ISRAEL for his postdoctoral work (2013-2017) at the department of molecular genetics, Weizmann Institute of Science. Following that, he moved to MD Anderson Cancer Center, Houston, TX, USA, initially as a postdoc (2018-2021) and later was promoted

to an Instructor (2021-2022) in the department of gynaecologic oncology and reproductive medicine. Dr. Dasari Joined NIAB on 11th October 2022.

Theme of Research: Reproductive Biotechnology

The primary research areas include:

1) Identifying the molecular markers associated with endometrial receptivity in Ruminants.

A receptive endometrium is essential for successful embryo implantation and establishment of pregnancy in mammals. Endometrial receptivity is a complex process that provides the embryo the chance to attach

and establish close interaction with the maternal endometrium. Changes in the endometrial epithelial cell morphology during the window of implantation is in part mediated by the rising progesterone levels as well as epithelial cell interactions with the trophoectodermal cells of the implanting embryo. Although a lot of work is done in the context of pre-implantation embryo development in ruminants, very little is known about the changes in the endometrium during the window of implantation. My research group will focus on understanding the changes in the endometrial epithelial cells during the window of implantation and also ascertain the differences between non-receptive and receptive endometrium.

2) Enriching X chromosome containing sperm for sex selection in Cattle.

In agricultural farms, over the years there has been

a growing request from farmers to device new technologies to achieve more female calves through artificial insemination (AI). Gender selection using sexed semen is imperative to meet the projected demand of milk in India by 2030. The use of sexed semen in the farm industry emerged in the 1980s and later it became a major resource for farms in the west. The use of sex sorted semen for AI in India is limited by its availability and accessibility. In addition, poor adoption of this technology by farmers stems from poor conception rate achieved through AI when compared to natural insemination. Hence, there is a need to find newer ways to reduce the cost of semen sexing and increase the speed of the enrichment process. Our lab will focus on developing novel technologies to enrich X chromosome bearing sperm to enhance the female cattle herd in India.



The lab group (Left to right): Embari Rashmitha, Akanksha Garg, Dr. Santosh K. Dasari, Gopal Nare



Nutrigenomics and Animal Nutrition

Yash Pal

Research Group

PhD students

- Soham Majumdar (UGC-JRF)
- Tapan Khatua (UGC-JRF)

Project Trainee:

- Megha Modi
(M.Sc. Trainee, since Jan 2023)
- Muhammed Thabsheer
(M.Sc. Trainee, since Jan 2023)

Collaborators

- Horacio Gonda, SLU, Sweden
- Torsten Eriksson, SLU, Sweden

Education and training:

Dr. Yash Pal completed his B.Sc. in Microbiology from Delhi University and M.Sc. in Biotechnology from Goa University. Dr. Pal completed his Ph.D. in Microbiology and Microbial taxonomy from CSIR-Institute of Microbial Technology, Chandigarh, India. He also worked briefly at Microbial Type Culture Collection and Gene Bank, IMTECH, Chandigarh. Further, he went to the Swedish University of Agricultural Sciences (SLU), Department of Animal Nutrition and Management, Uppsala, Sweden, for his post-doctoral training to investigate the alterations

in rumen microbial communities and regulation of associated genes when regular feed in the lactating dairy cow is substituted with forest by-products. Simultaneously, he also worked on the association of microbial communities in cheese production at SLU, Umea, Sweden. He joined NIAB in September 2022.

Theme of Research:

The primary research areas include:

1) Investigating the rumen microbial profiles of the indigenous cow.

To utilize plant biomass, ruminants have evolved an

exceedingly complex and remarkable organ, "rumen," which harbour a diverse and unique microbial population capable of utilizing such products. Apart from plant biomass utilization, the rumen microbial community also plays an essential role in nutrition, greenhouse gas emissions, overall health, and efficient milk production in dairy cows. Most nutritional disorders occur as a result of dysbiosis (imbalance of microbial population) in the rumen microbial population. Recent studies have highlighted the importance of specific rumen microbial communities in plant biomass utilization and their role in functional gene regulation. India has the largest livestock population, with 50 well-defined indigenous cattle breeds. However, there needs to be more research addressing the role of rumen microbial communities in metabolic disorders (acidosis, ketosis, milk fever, fat cow syndrome, etc.), and the composition of core micro-biome in the leading indigenous dairy breeds of India still needs to be identified.

2) Identifying alternative feed sources for ruminant nutrition and their impact on ruminant production.

Ruminant production, especially dairy, is still a very efficient way of food production by utilizing ruminant's capacity to degrade plant biomass. The fiber fraction comprises significant parts of the forage biomass ($\sim \geq 40\%$ on a dry matter basis), and the ester linkages between lignin and the structural carbohydrates can influence the ruminal digestibility, productivity, and GHG emissions. Any measure that can break these bonds (including feruloyl esterase-producing bacteria) should potentially increase the digestibility and energy availability of plant fibers. Lately, the prospects of utilizing water hyacinth (*Eichhornia crassipes*), an aquatic weed as a possible feed for livestock have been explored in some countries. Apart from serving as a potential substitute for conventionally ensiled forage, few studies have shown that incorporating water hyacinth in diets can effectively limit methane and carbon dioxide production from livestock ruminants. However, the potential of aquatic weeds as a possible substitute for fodder and its potential to mitigate methane in ruminants is not yet fully explored.



The lab group (Left to right): Mohammad Thabsheer, Dr. Yash Pal, Megha Modi, Tapan Khatua, Soham Majumdar



Studies on Livestock infertility and Immunity

Souvik Sen Sharma

Collaborators

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- Dr Nirmalya Ganguli, NIAB
- Prof Partha Roy, IIT Roorkee, Uttarakhand
- Dr Hironmoy Sarkar, Raiganj University, West Bengal

Theme of Research

The two broad areas of research include:

- 1) Investigating the effect of endocrine disrupting chemicals (EDCs) on livestock fertility with emphasis on toxicant induced epigenetic changes in the germline and probable transgenerational effects.
- 2) Studies on the efficacy of novel combinational therapies for better treatment of mastitis.

Studies on EDC induced reproductive dysfunction in livestock

We are currently working to understand the molecular mechanisms involved in pesticide induced reproductive dysfunction in livestock. Farm animals may be inadvertently exposed to commonly used pesticides [most of which are endocrine disrupting chemicals (EDCs)] through contaminated feed and fodder or via inhalation or dermal route. Exposure to such endocrine disrupting toxicants may be an underlying cause of sub-fertility/infertility in livestock. Furthermore, EDCs may induce epigenetic

changes in the germline, which may be transmitted to the progeny through the modified germ cells resulting in poor health and reduced fertility in the subsequent generations.

Based on nation-wide pesticide consumption data from the Ministry of Agriculture, GOI, we selected the organophosphate pesticide Chlorpyrifos for our study. The presence of this pesticide has been detected in bovine milk in different parts of the country, indicating that farm animals are routinely exposed to this pesticide. In order to determine the effect of chlorpyrifos on livestock fertility, we initiated studies on adult goat testicular tissue. To this end, we have standardized the protocol for culturing goat testicular tissue in vitro (Figure 1).

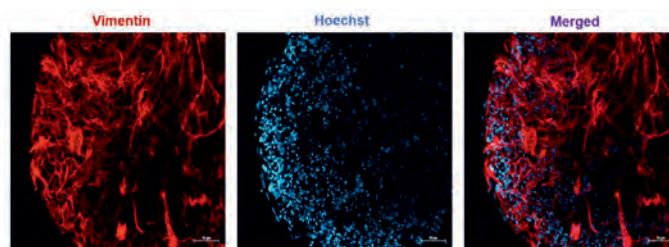


Figure 1: Expression of Vimentin in goat testicular tissue cultured *in vitro* for 72 hrs.

Sertoli cells were stained using anti-vimentin antibody. Nuclei were stained with Hoechst-33342 dye.

We then assessed the effect of chlorpyrifos (CPF) and its metabolite 3,5,6-Trichloropyridinol (TCPy) on the expression of genes essential for spermatogenesis in the cultured testicular tissue.

Exposure to CPF but not TCPy was associated with a significant decline in the activity of the enzyme acetylcholinesterase in the testicular tissue (Figure 2).

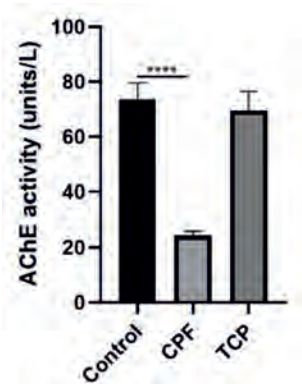


Figure 2: Acetylcholinesterase (AChE) activity in goat testicular tissue treated with chlorpyrifos (CPF) or TCPy. A significant decline in AChE activity was observed upon exposure to CPF (but not TCPy). $n=5$, $***p<0.0001$

Furthermore, CPF was found to induce a significant decline the expression of Androgen receptor (Ar) and FSH receptor (Fshr) in the testicular tissue as compared to vehicle treated control (Figure 3).

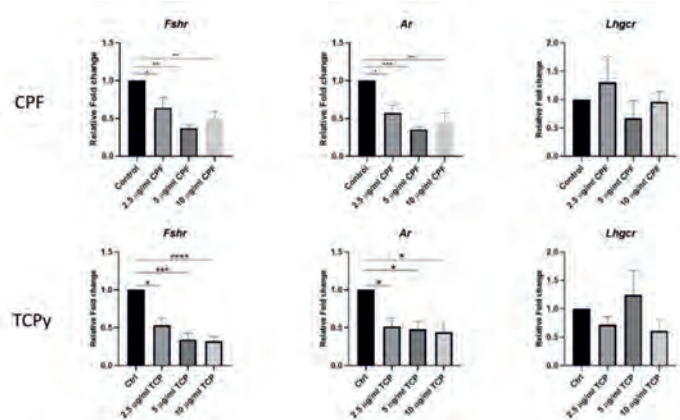


Figure 3: Effect of CPF and TCPy on the expression of hormone receptors in goat testicular tissue. Exposure to

CPF and TCPy was associated with a significant decline in the expression of Fshr and Ar in the cultured testicular tissue. The expression of LH receptor (Lhgr) did not change significantly upon exposure to either CPF or TCPy. $n=4$, $*p<0.05$

This decline in Ar and Fshr was associated with a concomitant decline in the expression of Sertoli cell genes like Kitlg, Inhbb, Gja1 and Cldn11, which are already established to be essential for spermatogenic progression (Figure 4). Importantly, TCPy, a degradation product of CPF was found to be equally toxic and induced similar effects in the cultured testicular tissue (Figure 3 and 4).

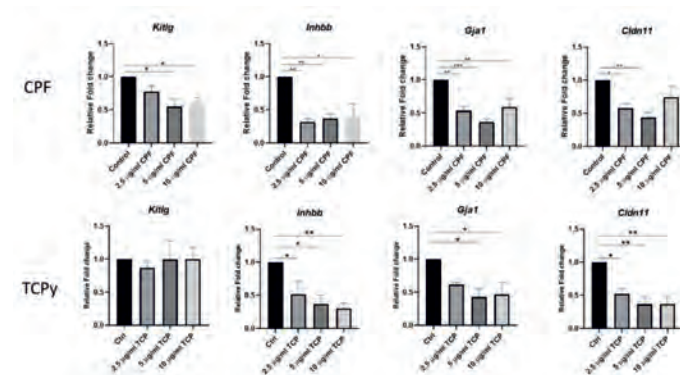


Figure 4: Effect of CPF and TCPy on the expression of genes essential for spermatogenesis. CPF and TCPy significantly downregulated the expression of genes like Inhbb, Gja1 and Cldn11 in goat testicular tissue, *in vitro* as compared to vehicle treated controls. $n=4$, $*p<0.05$

Further investigations revealed that neither CPF nor TCPy affected testosterone production in the cultured tissue indicating that the observed changes in gene expression were likely due to the reduced expression of Ar and Fshr in the CPF/TCPy treated tissue. Importantly, we found that the dose of CPF and TCPy used in our experiments did not induce any significant change in the levels of reactive oxygen species (ROS), thereby ruling out a role of oxidative stress in the observed change in gene expression in CPF/TCPy treated testicular tissue. Presently, we are investigating the effect of chlorpyrifos/TCPy on hormone mediated signal transduction in testicular Sertoli cells.

In addition to this, we have initiated *in vivo* studies in mice to assess reproductive toxicity due to chlorpyrifos.

Developing a novel combination therapy for better treatment of Mastitis avoiding antibiotic resistance

The inflammation of the udder gland (Mastitis) is one of the major diseases of livestock and is responsible for significant economic loss to dairy farmers. Currently, management of clinical mastitis involves extensive use of antibiotics. However, antibiotic therapy may not always clear the infection and excessive and prolonged use of antibiotics may induce AMR. Therefore, there is an urgent need to identify better and efficacious options for the treatment of mastitis. In this regard, identification of novel drugs and development of combination therapies may help in efficient treatment of bovine mastitis, reducing the required doses of antibiotics and their use. Dr Hironmoy Sarkar's group at Raiganj university have

identified an FDA approved drug- Dibucaine, which acts in synergy with very low dose of antibiotics to inhibit the growth of *Staphylococcus aureus*, in vitro as compared to antibiotics alone. In the present study, we aim to investigate the efficacy of intramammary infusion of Dibucaine and antibiotics for the treatment of mastitis using a mouse model of bovine mastitis.

Publications :

1. Goutam Ulgekar, Dilpreet Kaur, Venkateswaran Ganesan, **Souvik Sen Sharma**, Nirmalya Ganguli, Subeer S Majumdar. Anhydride chemistry-based hexanoylation of polyethylenimine increases transfection efficiency and expression of tagged DNA for therapeutic proteins in cultured cells. *Biotechnol Bioeng.* 2022 Nov;119(11):3275-3283.doi: 10.1002/bit.28196.



Research Theme

D. Nanotechnology



Photo Courtesy: Himanshu R. Patil



Nanomaterials for Animal Health, Nutrition, and Reproduction

Sanjay Singh

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- Dr. Hitesh Kulhari
(Associate Professor, NIPER Guwahati)

Theme: There have been limited efforts to address the nutritional needs of livestock leading to obstruction to maintaining better health, products, and reproductive abilities. In this context, our research group uses nanotechnologies to – (i) Synthesize of novel nanocarrier for delivering essential micronutrients in nanoparticle form to realize better animal nutrition and health, (ii) Design novel pro-oxidant nanozymes and use them to fight antimicrobial resistance, (iii) Use antioxidant and pro-angiogenic nanozyme-based electrospun fibers to develop self-responsive wound healing mechanism through angiogenesis, and (iv) Develop nanomaterials with

antioxidant potential: *In-vitro* and *In-vivo* safety assessment and their use for protecting reproductive organs of animals from oxidative stress.

Working Project 1:

Abstract: There has been a tremendous surge in demand for animal-derived food due to the increase in human population, which is expected to cross 10 billion by 2050. Limited efforts are made to address the poor bioavailability of administered mineral elements leading to malnutrition and associated nutrition-based health issues in humans and animals. Malnutrition is reported to make livestock

animals prone to nutrition-related diseases and affect the growth, development, and health of the livestock and, in extreme cases, causes fatalities. Therefore, strategies are imperative to improve the bioavailability of the external mineral supplements and vitamins. In this project, we are developing a nanoparticle-based multi-mineral formulation to provide optimum nutrition by promoting bioavailability of minerals in livestock. The developed nanoparticles are coated with different biocompatible molecules to facilitate intestinal absorption in livestock. We have chosen six minerals to be delivered in nanoparticle form such as ZnO NPs, CeO₂ NPs, CuO NPs, MnO₂ NPs, Co₂O₃ NPs, and Fe₂O₃ nanoparticles. These nanoparticles were encapsulated within microcapsule to offer protection from the acidic environment of the rumen and selectively release the nanominerals in the intestine. Figure 1 shows the synthesis of empty and gold nanocluster (a model nanoparticle) encapsulating microcapsules and their degradation and release at different pH and region of intestine.

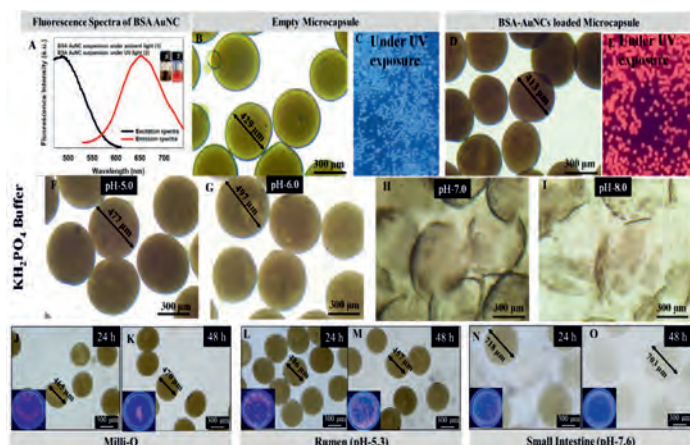


Figure 1: Excitation & Emission spectra of BSA-AuNCs inset picture shows us- synthesized BSA-AuNCs under ambient and UV light exposure. (A). Inverted microscopic image of empty (B) and BSA-AuNCs loaded (D) microcapsules. Empty (C) and BSA-AuNCs loaded (E) microcapsules under UV-light exposure. Inverted microscopic image of BSA-AuNCs loaded microcapsule incubated in different pH 5.0 (F), 6.0 (G), 7.0 (H) and 8.0 (I) buffers. BSA-AuNCs loaded microcapsule incubated in Milli-Q (J, K), simulated conditions of rumen (pH 5.3, L, M) and small intestine (pH 7.6, N, O) for 48 hours. Inset shows BSA-AuNCs loaded microcapsules exposed to UV-light.

Working Project 2:

Abstract: Antimicrobial resistance (AMR) is a worldwide human and animal health issue that challenges the capacity to treat infectious diseases. AMR is “one of the largest dangers to global health, food security, and economy today,” according to the WHO, and may impact anybody, anywhere, at any age. AMR is considered responsible for 7,00,000 yearly fatalities that may reach to 10 million per year by 2050, surpassing the current cancer death rate. A new class of nanomaterials, displaying pro-oxidant biological enzyme-like catalytic activities (nanozymes), have been recently studied for killing antibiotic/drug-resistant bacterial species. These pro-oxidant nanozymes (various metal and metal-oxide nanoparticles) display biological oxidase or peroxidase enzyme-like activities, thereby causing the generation of superoxide or hydroxyl radicals, respectively, that are well-known antibacterials. In this context, we have developed CeO₂ NPs exhibiting the superoxide radical generation in the presence of nucleotides and used them for antibacterial activity against *E. coli*. (Figure 2).

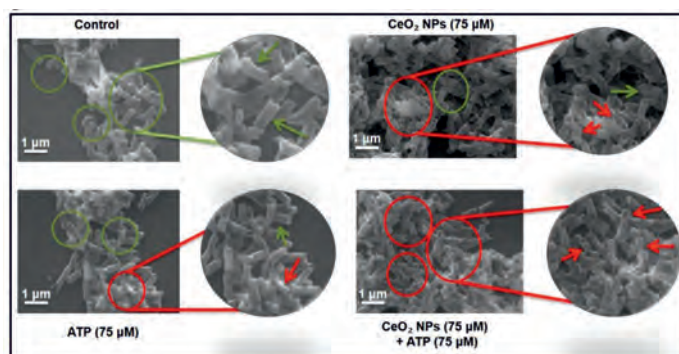


Figure 2: SEM images of *E. coli* after the treatment with the combination of CeO₂ NPs + ATP with suitable controls. The highlighted sections in green and red circles and arrows represent the live and dead population of bacteria, respectively.

Working Project 3:

Abstract: Angiogenesis, process of development of new blood vessels, is imperative for the development of the organism and regulate the vital physiological processes. Certain growth factors and cytokines (VEGF, TGFβ and bFGF) play important roles in wound angiogenesis by modulating the flow of blood and nutrient supply to the damaged area. Due to the unsatisfactory clinical

trial response with the growth factors like VEGF-A etc. in the concerns with angiogenesis, thrombosis and organ fibrosis, new alternatives to modulate angiogenesis is essentially required. In this context, we are developing nanozymes with different oxidation states incorporated in nanofibers to enhance the angiogenesis and use them possibly for wound healing and anti-fibrosis applications.

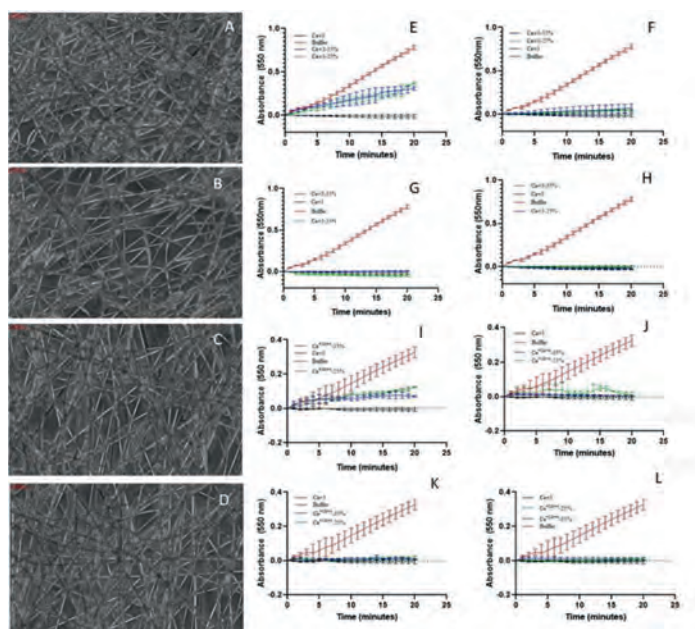


Figure 3: Microscopic images of the synthesized Ce³⁺ incorporated PGNF with different concentrations (A) 25% (B) 35% and Ce³⁺ & Ce⁴⁺ incorporated PGNF (C) 25% (D) 35%. SOD mimetic activity of Ce³⁺ incorporated PGNF in tris after (E) 0 min (F) 3 h (G) 6 h (H) 12 h and Ce³⁺ & Ce⁴⁺ incorporated PGNF (I) 0 min (J) 3 h (K) 6 h (L) 12 h.

Herein, we have developed superoxide-dismutase and catalase enzyme mimetic nanoparticles with Ce³⁺ and Ce⁴⁺ oxidation states atoms incorporated in polymeric nanofibers and followed their free radical scavenging ability (Figure 3). Microscopic images of the synthesized Ce³⁺ incorporated in nanofibers with different concentrations (A) 25% (B) 35% and a mixture of Ce³⁺ & Ce⁴⁺ incorporated nanofibers with 25% (C) 35% (D) loading of nanoparticles. SOD mimetic activity of Ce³⁺ incorporated PGNF in tris after (E) 0 min (F) 3 h (G) 6 h (H) 12 h and mixture of Ce³⁺ & Ce⁴⁺ incorporated PGNF (I) 0 min (J) 3 h (K) 6 h (L) 12 h.

Working Project 4:

Abstract: There have been some reports on the effect of nanomaterial exposure to mammalian organs upon ingestion by various routes. Although superficial, most of the reports suggest that nanomaterials cause adverse effects on the reproductive systems. This theme also aims to study the detailed evaluation of systemic toxicity of CeO₂ NP and Mn₃O₄ NP, possessing antioxidant properties, synthesized through “safe-by-design” approach and explore their antioxidant potential to impart protection to reproductive organs of mice against ROS mediated oxidative damage. In this context, we have prepared CeO₂ NPs coated with dextran and tested their effects on ovarian follicles, oocyte maturation and protecting them from oxidative stress (*In collaboration with Dr. HBD Prasad Rao, NIAB, Figure 13, right panel*). The results revealed that dextran coated CeO₂ NPs injection (20 mg/kg body weight, intraperitoneal) to mice at 10 dpp, 15 dpp, 20 dpp, 25 dpp and did not cause any significant change either in body weight or weight of ovaries. Figure 4A and B (right panel) show the typical morphology of ovarian follicles in untreated and CeO₂ NPs treated animals, respectively.

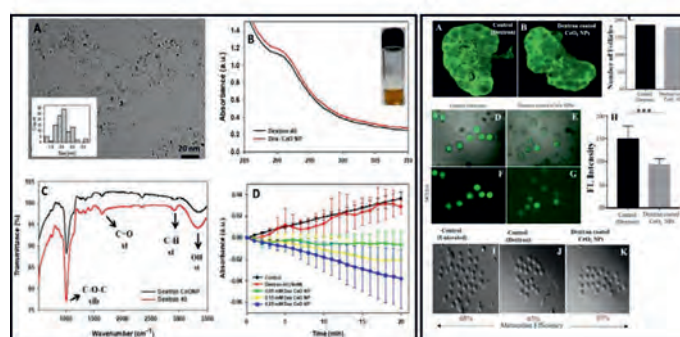


Figure 4: Left panel: TEM image of CeO₂ NP (A). Inset shows the size range of synthesized CeO₂ NP with an average size of 2-3 nm. UV-Vis spectra of CeO₂ NP (B) Inset shows the suspension of synthesized CeO₂ NP. FTIR spectra of CeO₂ NP (C). SOD mimetic activity of CeO₂ NP at different concentrations with respect to control (D). Right panel: Effect of exposure of CeO₂ NPs on reproductive system of female mice: Effects on ovarian follicles (A, B and C), oocyte maturation (D, E, F, G, and H) and protection of oocytes from oxidative stress (I, J, and K)

The number of follicles were also found to be almost same in untreated and CeO₂ NPs treated animals (Figure 4C). The germinal vesicle (GV) stage oocytes oocytes pre-treated with CeO₂ NPs showed significant drop in oxidative stress as evident by the decreased intensity of green fluorescence of DCFDA (Figure 4E and G). The CeO₂ NPs exposure did not affect the oocyte maturation and revealed a similar pattern to untreated control (Figure 4I, J, and K).

Publications :

1. V. Unadkat, P. Parikh, K. Patel, V. Sanna, **Sanjay Singh***, Identification of 1,2,4-oxadiazoles-based novel EGFR inhibitors: Molecular Dynamics Simulation-guided identification and in vitro ADME studies, *OncoTargets and Therapy*, 2022, 15, 479-495.
2. P. Pandit, S. Bhagat, P. Rananaware, Z. Mohanta, M. Kumar, V. Tiwari, **Sanjay Singh***, V. Brahmkhatri, Iron oxide nanoparticle encapsulated; folic acid tethered Dual Metal Organic Framework-based nanocomposite for MRI and selective targeting of folate receptor expressing breast cancer cells,

Microporous and Mesoporous Materials, 2022, 340, 112008.

3. S. Bhagat, **Sanjay Singh***, Nanominerals in Nutrition: Recent Developments, Present Burning Issues and Future Perspectives. *Food Research International*, 2022, 160, 111703.

Book Chapters -

1. N. Yadav, S. Bhagat, **Sanjay Singh***, Surface modification of metal oxide nanoparticles to realize biological applications, *Elsevier*, 2023, 450-477. DOI.org/10.1016/B978-0-12-822425-0.00018-X
2. R. Singh, S. Bhagat, **Sanjay Singh***, Limiting antibiotic-resistant bacteria using multifunctional nanomaterials, *Springer Nature (Switzerland)*, 2022, 193-235. DOI: 10.1007/978-3-031-10220-2_6
3. S. Bhagat, D. Mehta, **Sanjay Singh***, Nanomaterials in Animal Nutrition and Diseases Treatment: Recent Developments and Future Aspects, *Springer Nature (Singapore)*, 2023, 329-361. DOI: 10.1007/978-981-19-7963-7_12



The lab group (Left to right): Namrata Bhabar, Shreya Yadav, Stuti Bhagat, Dr. Sanjay Singh, Palak Arora, Krishnendu MR, Keerthana Babu and Divya Mehta



Quick diagnostics/therapeutics using smart nanomaterial for animal welfare

Sonu Gandhi

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- Bhawani Bogam, Project Trainee (Since July 2022)
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- Dr Jahangeer Ahmed, King Saud University, Saudi Arabia

Our lab work is focused on to miniaturization of the devices for the efficient detection of bacterial, viral, environmental samples in livestock and poultry diseases. To execute this work, we are developing robust assays using novel biomaterials and biomolecules. Another area of research is on to develop therapeutic nanovehicles for targeted delivery.

Smart nanosensors for rapid detection of Japanese Encephalitis virus.

A. Lateral flow assays (LFAs) are one of the most economical, point-of-care (PoC) diagnostic techniques that exploit the colorimetric properties of gold nanoparticles (AuNPs) but no rapid antigen-based LFA exists for Japanese Encephalitis

Virus (JEV) detection. Herein we have reported a novel portable sandwich-type LFA for on-site detection of non-Structural 1 (NS1) secretory protein of JEV. In-house JEV NS1 antibodies (Ab) were generated and labelled with AuNPs as immunoprobes. Glass fibre membrane conjugate pad was soaked with AuNPs-Ab solution while JEV NS1 Ab and anti-rabbit IgG 2° Ab were coated as the test and control lines, respectively on a nitrocellulose (NC) membrane. The different layers of the LFA were fabricated and various parameters were standardised for optimum colour intensity development. JEV negative serum samples spiked with JEV NS1 Ag (linear range- 1 pg/ml-1 µg/ml) were applied on to the sample pad and the intensity of the red colour developed

on the test line, increased with increasing concentration of Ag. The visual limit of detection (LOD) determined from the LFA was 10 pg/ml which corresponded to the LOD determined by the graphical data obtained from Image J software and Colorimeter smartphone application. Furthermore, the colorimetric based immunosensor showed minimal non-specific detection of other closely related flaviviral NS1 Ag in spiked serum, provided a rapid result within 10 min, displayed storage stability up to a month at 4 °C, and successfully detected JEV NS1 protein in clinically infected pig serum samples, and hence, may be developed into a PoC screening diagnostic kit for JEV.

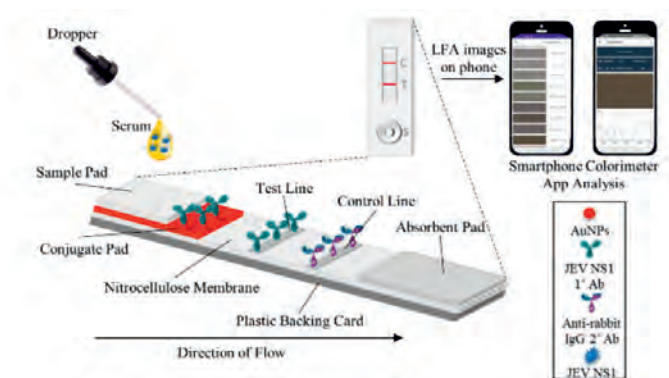


Fig. 1. Lateral flow assay for rapid detection of JEV NS1 protein biomarker (NS1) in serum samples incorporating a smartphone-based colorimeter application

B. Japanese Encephalitis Virus (JEV), a zoonotic infectious disease is a major concern in East-Asian and Western Pacific regions with no available therapy or fool-proof vaccines. Hence it is imperative to develop diagnostic assays for rapid mass screening for JEV biomarkers in human as well as pigs for better management of this recurring epidemic and guided therapy of infected patients. In this research work, we have exploited the advantages of gold nanorods (GNR) as signal enhancers which include ease of bioconjugation, on fabricated Fluorine-doped Tin Oxide (FTO) electrodes coupled with Non-Structural 1 (NS1) antibodies (Ab) of Japanese Encephalitis Virus (JEV) for ultrasensitive detection of JEV NS1 protein, which is found secreted in the circulatory system of infected individuals. Each fabrication, and conjugation step was thoroughly characterised and the electrode was optimised for various testing parameters. JEV NS1 antigen (Ag) recognition using the optimised electrode was carried out in buffer (detection limit- 0.36 fM) and spiked serum (detection limit- 0.53 fM) within the linear range of 1 μ M to 1 fM. The fabricated electrode did not show any non-specific binding with Dengue

Virus, West Nile Virus or Yellow Fever Virus NS1-Ag. The electrode also provided a stable rapid response within 30 s when reused up to 4 times, and could be stored at 4 °C up to 3 weeks without substantial variation in output. Hence, the developed electrode has future applications for miniaturisation into a rapid diagnostic device for clinical detection of JEV.

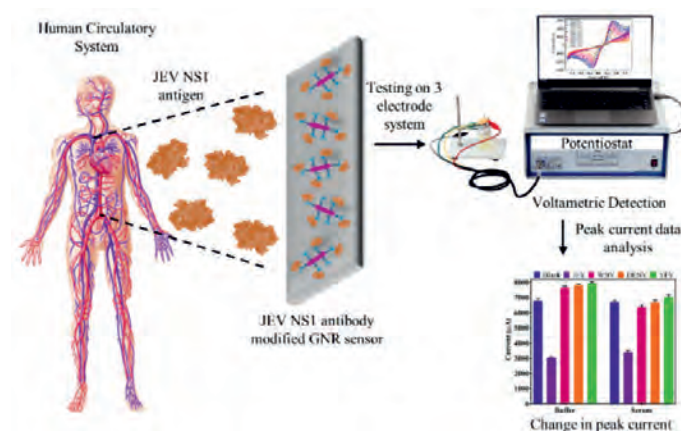


Fig. 2. Gold nanorods based immunosensor for rapid detection of Japanese Encephalitis Virus secretory NS1 protein.

PESTISCAN (Development of novel biosensor for endosulfan pesticide residue detection)

Endosulfan (ES) is an extensively utilized agricultural pesticide in developing countries, despite its life-threatening toxic effects. In this study, we propose a sensitive detection method of endosulfan using multiwalled carbon nanotubes (MWCNT). Herein, we have conjugated endosulfan with bovine serum albumin (BSA) via zero-length conjugation method and successfully confirmed with various biophysical techniques. Endosulfan antibodies (ES-Abs) were raised in-house, fabricated on the electrodes coupled with MWCNT, optimized to achieve maximum peak current by varying the parameters such as MWCNT and antibody concentration, scan rate, temperature, pH, and response time using voltammetry. Cyclic voltammetry (CV), differential pulse voltammetry (DPV), and Electrochemical impedance spectroscopy (IS) were performed for electrochemical analysis. The fabricated immunosensor was also evaluated for its cross reactivity with isodrin, chlorpyrifos, and monocrotophos. The limit of detection for ES was found to be 0.184 ppt in standard buffer (range 0.001 ppt - 100 ppb). Additionally, spiked ES in water, animal feed, root, and leaf extract samples were also analyzed and validated by HPLC. To summarize, the fabricated electrode can be used for successful detection of endosulfan in agricultural sector to elude the lethal effect at large.

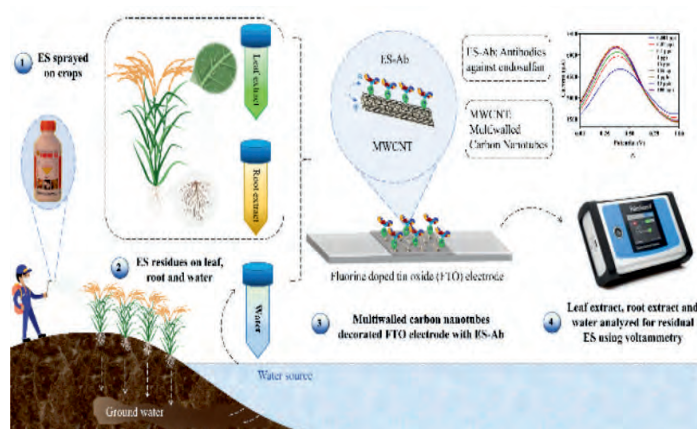


Fig. 3. Multiwalled carbon nanotube decorated immunosensor development for the sensitive detection of residual endosulfan from environmental samples.

COVID-SCAN (Novel diagnostic platforms for point-of-care SARSCoV-2 detection)

A. Coronavirus Disease 2019 (COVID-19) pandemic has shown the need for early diagnosis to manage infectious disease outbreaks. Here, we report a label free electrochemical Fluorine-Doped Tin Oxide (FTO) Immunosensor coupled with gold nanorods (GNRs) as an electron carrier for ultrasensitive detection of the Receptor Binding Domain (RBD) of SARS CoV-2 Spike protein. The RBD gene was cloned, and expressed in-house with confirmed molecular weight of ~31 kDa via Sodium Dodecyl Sulphate-Polyacrylamide Gel Electrophoresis (SDS-PAGE) and Matrix-Assisted Laser Desorption/Ionization-Time of Flight (MALDI-TOF). RBD antibodies (Ab) were generated to be used as a bioreceptor for sensor fabrication, and characterized using SDS-PAGE, Western Blot, and Enzyme-Linked Immunosorbent Assay (ELISA). GNRs were fabricated on the electrode surface, followed by immobilization of RBD Ab. The conjugation steps were confirmed by UV-Vis Spectroscopy, Dynamic Light Scattering (DLS), Atomic Force Microscopy (AFM), Transmission Electron Microscopy (TEM), Cyclic Voltammetry (CV), and Differential Pulse Voltammetry (DPV). The fabricated electrode was further optimized for maximum efficiency and output. The detection limit of the developed electrode was determined as 0.73 fM for RBD antigen (Ag). Furthermore, patient nasopharyngeal samples were collected in Viral Transport Media (VTM), and tested on the sensor surface that resulted in detection of SARS CoV-2 within 30 s, which was further validated

via Reverse Transcription-Polymerase Chain Reaction (RT-PCR). Moreover, the immunosensor showed good repeatability, storage stability, and minimal cross reactivity against Middle East Respiratory Syndrome (MERS) spike protein. Along with ease of fabrication, the electrodes show future miniaturization potential for extensive and rapid screening of populations for COVID-19.

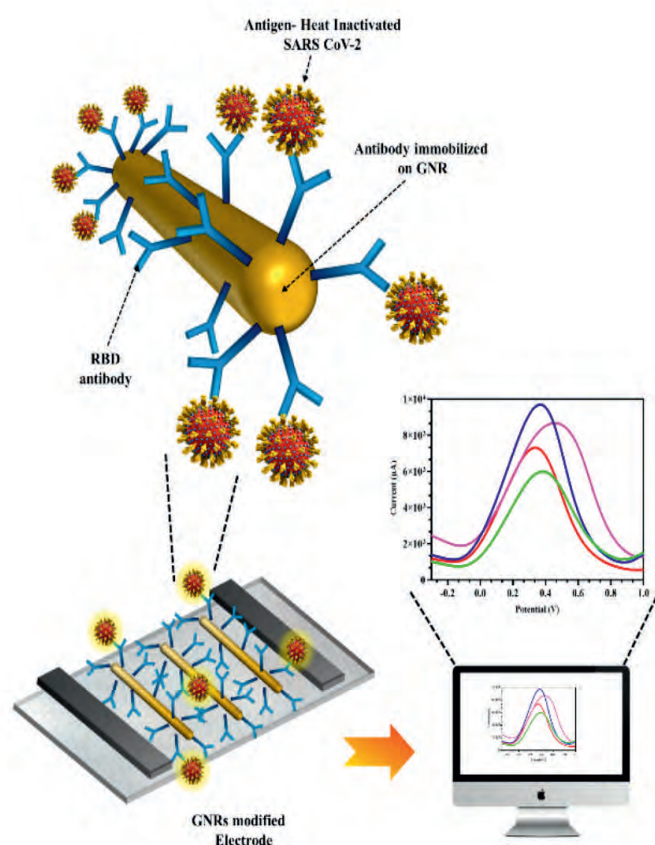


Fig. 4. Electrochemical detection of Receptor Binding Domain on SARS CoV-2 Spike surface protein in patient nasopharyngeal samples with gold nanorods modified electrode for initial mass screening of COVID-19 patients.

B. COVID-19 pandemic has emphasized the need for the development of a rapid diagnostic device for the effective treatment of COVID-19 for its mitigation. Lateral flow immunoassay (LFIA) belongs to a class of diagnostic devices, which has the benefit of providing quick results, easy to handle, low cost, and on-site detection. So far, several LFIA has been developed for the detection of infectious SARS-CoV-2, however, only few of them are antigen-based. Here, we present an antibody labeled gold-nanoparticle (AuNPs) based lateral

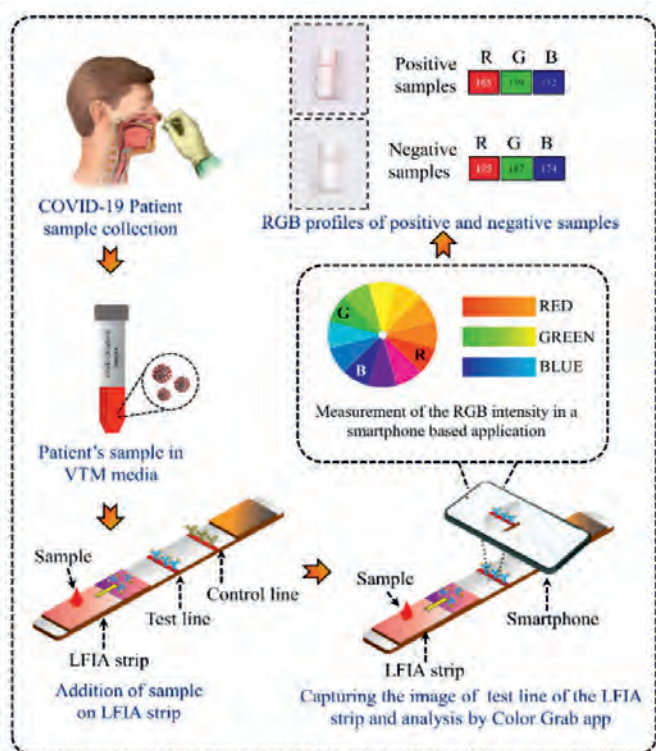


Fig. 5. Lateral flow assay depicting the testing of COVID-19 clinical samples and its analysis by smartphone-based application

flow immunoassay (AuNPs-LFIA) for the detection of Receptor Binding Domain (RBD) of SARS-CoV-2. For this, RBD antibody (Ab) of SARS-CoV-2 was conjugated with the AuNPs which served as a detecting probe. The fabricated LFIA strip was optimized for different parameters such as membrane pore size, blocking conditions, antibody coating concentration, and conjugate incubation. The optimized LFIA strips were validated in spiked buffer samples and the optimal limit of detection was found to be 1 ng/mL, which was confirmed by smartphone-based application. Moreover, the developed AuNPs-LFIA strips effectively detected RBD antigen (Ag) in 100 clinical samples with 94.3% sensitivity and 90.9% specificity in clinical samples when compared with gold standard (RT-PCR). The fabricated LFIA are reported to have storage stability of up to 21 days at 4°C and room temperature (RT) and hence, can be used as a portable, cost-effective diagnostic device for rapid detection of SARS-CoV-2.

C. Coronavirus disease (COVID-19) is an infectious disease that has posed global health challenge caused by the SARS-CoV-2 virus. Early management and diagnosis of SARS-CoV-2 are crucial for the timely treatment, traceability, and reduction of viral spread. We have developed a rapid

method using graphene-based Field Effect Transistor (Gr-FET) for the ultrasensitive detection of SARS-CoV-2 Spike S1 antigen (Ag) (Gr-FET). The in-house developed anti-Spike S1 Antibody (S1-Ab) was covalently immobilized on the surface of carboxy functionalized graphene channel using carbodiimide chemistry. Ultraviolet-Visible (UV-Vis) spectroscopy, Fourier-Transform Infrared (FT-IR) spectroscopy, X-ray Photoelectron Spectroscopy (XPS), Atomic Force Microscopy (AFM), Optical microscopy, Raman spectroscopy, Scanning Electron Microscopy (SEM), Enzyme Linked Immunosorbent Assays (ELISA), and device stability studies were conducted to characterize the bioconjugation, and fabrication process of

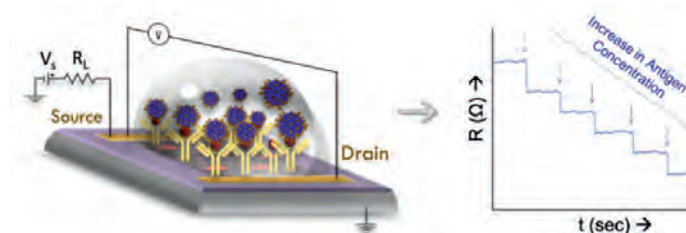


Fig. 6. Gr-FET based immunosensing of SARS-CoV-2

Gr-FET. In addition, the electrical response of device was evaluated by monitoring the change in resistance caused by Ag-Ab interaction in real time. For SARS-CoV-2 Spike S1 antigen, our Gr-FET devices were tested in the range from 1 fM to 1 μ M with a limit of detection (LOD) of 10 fM in standard buffer. The fabricated devices are highly sensitive, specific, and capable of detecting low levels of SARS-CoV-2 Spike S1 antigen.

Development of a new generation of biosensors integrated with nanostructured sensitive elements for detection of Salmonellosis

Salmonellosis is a symptomatic infection, a foodborne disease, caused by Salmonella that enters the body through the ingestion of contaminated food. In this study, a novel electrochemical biosensor integrated with gold nanorods (GNRs) was used to explore the interaction between in-house generated antibodies with Salmonella serovars. Under optimal conditions, the proposed immunosensor depicted a linear range of detection ($1 - 1 \times 10^5$) CFU/mL with a detection limit of 105 and 23 colony forming units (CFU) of *S. ent* and *S. typhi* respectively. The designed GNR/*S. ent*/*S. typhi* /Ab immunosensor was able to successfully detect *S. ent*/*S. typhi* in spiked meat and milk samples respectively, with a long shelf life, good repeatability, as well as reproducibility under optimised conditions. Along with

the ease of fabrication, the developed electrode produced a highly specific response, and displayed negligible cross reactivity with other *Salmonella* species. Moreover, the established detection technique may be used as an alternative to conventional analytical approaches for rapid and sensitive diagnosis of Salmonellosis.

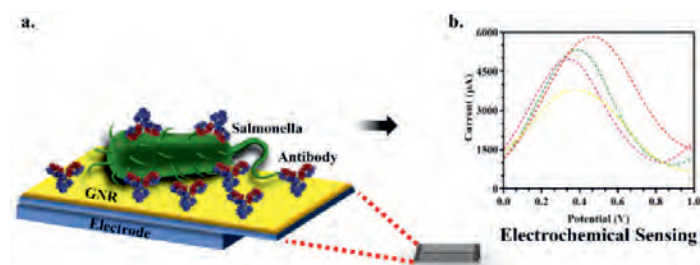


Fig. 7. A gold nanorods based nano immunosensor for label free detection of Salmonellosis.

Development of Multiplex/Disposable Paper Microfluidic Device for Detection of β -lactam antibiotic residues in livestock and poultry products

The impact of uncontrolled antibiotic use in animals has subsequently led to emergence of antibiotic-resistant bacteria among humans due to consumption of animal by-products. Hence, to investigate antibiotic contamination in animal origin food products, we have developed a reduced graphene oxide (rGO) based immunosensor using Fluorine-doped Tin Oxide (FTO) electrodes conjugated with anti-Penicillin antibody (FTO/rGO/Pen-Ab) for sensitive detection of Penicillin G. To execute this, Penicillin was first conjugated with Bovine Serum Albumin (BSA) which was confirmed via chromatographic, spectroscopic and electrophoretic-based techniques against both the in-house developed Penicillin conjugate (Pen-BSA)

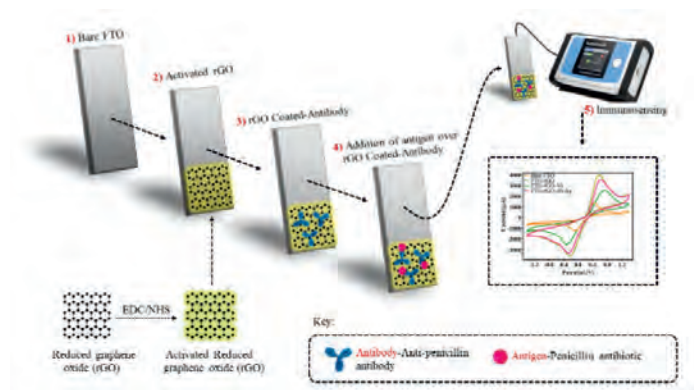


Fig. 8. Electrochemical immunosensor developed for sensitive detection of penicillin in milk, egg and meat samples.

as well as the commercial Penicillin conjugate (Com-Pen-

BSA). Further, we fabricated FTO based electrodes with one step synthesized rGO and immobilized with antibodies generated against Pen-BSA (Pen-Ab), and Com-Pen-BSA (Com-Pen-Ab), separately for detection of Penicillin. Each synthesis and conjugation step were confirmed by different spectroscopic methods. For efficient working of the electrode, various parameters were optimized using Voltammetry. The limit of detection for Penicillin G against Pen-Ab and Com-Pen-Ab was determined as 0.724 pM and 0.668 pM respectively and both

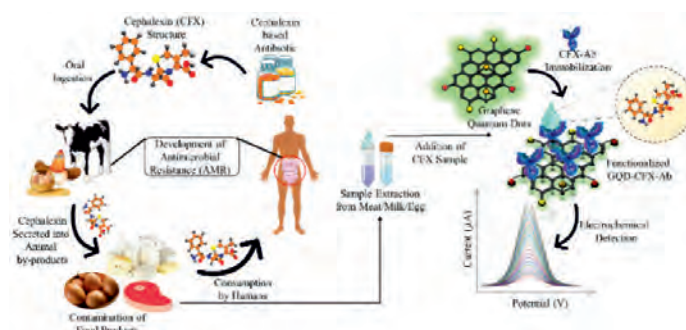


Fig. 9. Development of an electrochemical immunosensor using graphene quantum dots as a signal enhancer for ultrasensitive detection of cephalexin in animal-based food products.

displayed negligible cross reactivity against other β -lactam antibiotics (Cefalexin and Ampicillin). Furthermore, antibiotics were also detected in spiked milk, egg and meat samples and the electrode was evaluated for repeatability and storage stability. In conclusion, in-house developed Pen-Ab showed better sensitivity as compared to Com-Pen-Ab. The fabricated FTO/rGO/Pen-Ab biosensor shows future potential for rapid detection of penicillin and other β -lactam antibiotics for safe consumption of animal by-products by humans.

B. The unregulated usage of Cephalexin (CFX) in animal source food products has led to antimicrobial resistance (AMR) in humans. Graphene quantum dots (GQD) are zero-dimensional nanomaterials possessing both unique optical and electrical properties based on their tuneable size that serves as an excellent signal enhancer. The fluorescence quenching and conductive properties of GQD were exploited for the detection of CFX. In this study, a zero-length conjugation approach was utilized to develop Cephalexin-Bovine Serum Albumin (CFX-BSA) conjugate and used to generate antibodies (Ab). Conjugated CFX-BSA Abs with GQD enhanced the electrochemical response of the sensor for sensitive detection of CFX. The fabricated

electrode was optimised by Electrochemical Impedance Spectroscopy (EIS). The limit of detection for CFX was found to be 0.53 fM in standard buffer with negligible cross-reactivity against other β -lactam antibiotics. The biofunctionalized electrode based on GQD-antibody may potentially be miniaturised for on-site detection of other antibiotics in food samples.

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11. Roberts A, Mahari S and **Gandhi S\$** (2022) Signal enhancing gold nanorods (GNR) and antibody modified electrochemical nanosensor for ultrasensitive detection of Japanese Encephalitis Virus (JEV) secretory Non-Structural 1 (NS1) biomarker. *J of Electroanalytical Chemistry* 919: 116563.
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Technology Transfer

We have worked in a DBT-Flagship project entitled “Genomics assisted pathobiology to identify novel targets for diagnosis and therapeutic interventions(s) of Japanese encephalitis and Leptospirosis” where we have developed a lateral flow assay for non-structural 1 (NS1) antigen detection of Japanese encephalitis virus. We have transferred the technology for the same on 22nd March on Lateral Flow Assay for Rapid Screening of JEV in Clinical Samples to M/s. Paramcare Life Sciences Pvt. Ltd., Mumbai.



The lab group (Left to right): Pratik Kolhe, Narlawar Sagar Shrikrishna, Ramya PR, Akanksha Roberts, Dr. Sonu Gandhi, Drishya Prakashan, Sayanti Halder, Maitri Shah, Aswin S, Pratheeth Bhat.



Research Theme

E. Bioinformatics



Photo Courtesy: Himanshu R. Patil



Molecular Genetics for Animal Health and Welfare

Sandeep Kumar Kushwaha

Research Group

- Deepshikha Gupta, DBT-RA (From March, 2022)
- Naveen Prasath, PhD student (From November, 2021)
- Badeer Hassan, PhD student (From June, 2022)
- Nimisha Tripathi, PhD student (From Feb 2023)
- Darshan Panchariya, Project Associate-I (From October, 2022)
- Priyanka Dutt, Project Associate-I (From March, 2022)
- Sugam Patel, Master trainee (From January, 2023 to June 2023)
- Soumyadutta Basak, Master trainee (From January, 2023 to June 2023)

Our lab is focused on molecular genetics to develop methods, tools and resources for animal disease diagnosis and treatment. Our primary objectives are (a) bioinformatics data analysis and development of computational resources to support livestock research in India and (b) developing more sensitive high-throughput tools to detect emerging pathogens. Presently, our lab is engaged in the following projects:

- Identification and validation of bovine biomarkers for early detection of Sub-clinical Mastitis
- Investigation of the potential role of the bovine microbiome in non-obstructive cyclic infertile dairy cows.

Research Group

- Dr Syed Faisal, National Institute of Animal Biotechnology, Hyderabad, India
- Dr. Sandeep Goel, National Institute of Animal Biotechnology, Hyderabad, India
- Dr. Sonu Gandhi, National Institute of Animal Biotechnology, Hyderabad, India
- Dr Madhuri Subbiah, National Institute of Animal Biotechnology, Hyderabad, India
- Dr Anand Srivastava, National Institute of Animal Biotechnology, Hyderabad, India
- Dr Paresh Sharma, National Institute of Animal Biotechnology, Hyderabad, India

Identification and validation of bovine biomarkers for early detection of Sub-clinical Mastitis

Bovine Mastitis is one of the oldest known diseases of dairy cows, and its sub-clinical form (SCM) is a major cause of disease pervasiveness. SCM causes significant economic loss by reducing milk production and quality, low pricing, suppressing animal's reproductive potential, and other management service costs. Moreover, SCM animals maintain a reservoir of infection which can work as a source for herd infection. SCM is mainly detected through elevated somatic cell count (SCC) worldwide. However, SCC is influenced by age, lactation period, parity,

season, stress, management and breed and does not always correlate with udder infection. The detection limit of SCC-based methods is relatively low and highly variable among animals. Therefore, a high quest for discovering SCC-independent bovine biomarkers for early SCM diagnosis. In this project, key molecular targets will be identified to develop a diagnostic panel, and concomitant alterations in the gene expression profile of these molecular targets will be used to recognise a trend toward or away from the disease state. Identified candidates will be validated through real-time qPCR and western blot techniques in the mastitis milk samples of indigenous cows.

Objectives

- Identification of bovine biomarker for early SCM diagnosis and in-vitro validation of candidate genes in bovine mammary epithelial cells upon infection
- Validation of candidate genes in field milk samples to detect sub-clinical Mastitis.
- Development of a bioinformatics approach to identify key genes from a large set of differentially expressed genes

Work done and progress: A bioinformatics cum machine learning technique-based data processing workflow has been developed to achieve our objectives. For this purpose, a publically available transcriptome (NCBI SRA: PRJEB43443) was processed through the developed pipeline to identify key molecular targets. As a result, a list of genes was prepared and validated in the in-vitro experiment in HC11 cells (mouse mammary epithelial cell line) and goat mammary epithelial cells (GMECs). The presence of genes in mouse and goat cell-line RNA samples without infection were considered positive results for further validation. Therefore, all the identified genes are under validation upon LPS and LTA infection in the bovine mammary epithelial cell line at 0hr, 4hr, 8hr, 16hr, 24hr, 48hr, and 72hr. After in-vitro validation, selected genes will be used to screen field samples.

Investigation of the potential role of the bovine microbiome in non-obstructive cyclic infertile dairy cows

Bovine infertility research is mainly focused on hormonal imbalance and obstructive reproductive disease and disorder.

However, non-obstructive infertility in livestock animals is not explored adequately. A large number of indigenous cattle, crossbred cattle and buffalo reside in India, which do not have single calving during their lifetime. Indian farmers spend a lot of money to maintain these infertile animals annually. Additionally, these unproductive animals also contribute to climate change. Recent microbiome-based research in human health encourages animal scientists to explore the bovine microbiome to understand the microbial prospect of bovine infertility, especially in non-obstructive cyclic dairy cows. Therefore, we designed a metagenomics-based research investigation to understand the association between microbiome and bovine infertility in Indian dairy cows.

Our Hypothesis: Non-obstructive cyclic infertility of dairy cows might be associated with a set of microbes in the reproductive system.

Objectives

- Exploration of microbial diversity in the reproductive system of non-obstructive cyclic infertile animals.
- Comparison of microbial diversity in the rumen and cervico-vaginal mucus samples of fertile and non-obstructive cyclic infertile animals.
- Exploration of host-microbiome mediating infertility in non-obstructive cyclic animals.

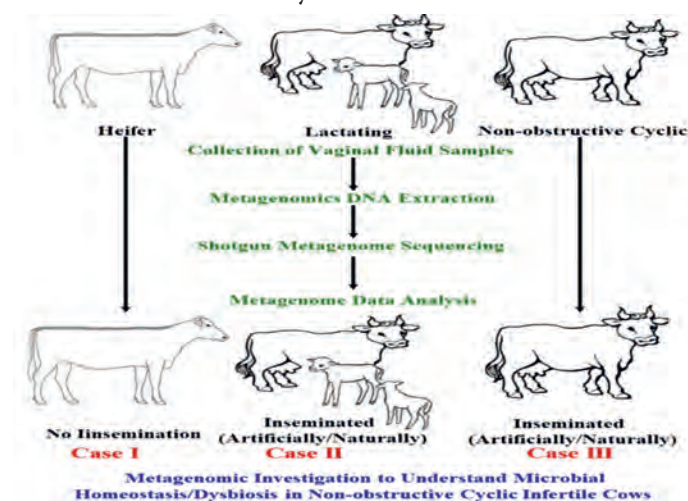


Figure 1. Schematics of metagenomics research study to explore non-obstructive cyclic infertility in dairy cows.

Work done and progress:

To explore the microbial association with non-obstructive

cyclic infertility, Gir and Kankrej breeds are selected for a pilot study. Non-obstructive cyclic infertile cows have been identified clinically in collaboration with Kamdhenu University, Gujarat. Four vaginal fluid samples from the heifer, lactating, and non-obstructive cyclic infertile cows have been collected from the estrus phase of the estrous cycle. All the collected samples were processed for DNA extraction, and extracted samples were outsourced for shotgun metagenome sequencing. Sequenced metagenome data were analysed to explore the comparative microbiome profile of vaginal fluid samples of the heifer, lactating and non-obstructive cyclic cows. A significant differences have been observed in the relative abundance of *Campylobacter mucosalis*, *Porphyromonas levii* and *Oligella urethralis* species among the three groups of the Kankrej breed. *Babesia bigemina* and *Clostridium botulinum* have been found as the most dominant species in Gir breed samples. These species are not explored in the bovine reproductive system. Therefore, identified species will be validated on the large samples before further in-depth molecular investigation.

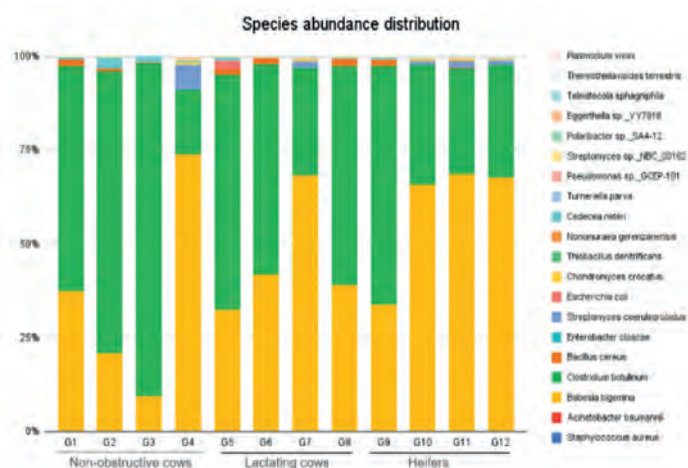


Figure-2: Abundance distribution of top 20 species in Gir samples.

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The lab group (Left to right): Deepshikha Gupta, Nimisha Tripathi, Soumyadutta Basak, Priyanka Dutt, Dr. Sandeep Kushwaha, Darshan Panchariya, Sugam Patel, Badeer Hassan, Naveen Prasath



Unlocking genomics potential to study different physiological and pathological conditions.

Shailesh Sharma

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Project Personnel:

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- Kopal Sigh,
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Collaborators

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- Dr Alfonso Gutierrez-Adan, Animal Reproduction Department, INIA-CSIC, Madrid, Spain

Theme of Research

Our team's research experience spans bioinformatics and structural biology, including application of data mining, application of bioinformatics tools, computational biology, and structure-activity relationships. Present work includes (a) identification of lncRNAs during host response against NDV. (b) investigations into structural, functional and dynamic properties of proteins. (b) genome annotation, protein structure, target identification, and molecular dynamics simulations.

Presently we are working on following projects:

- Analysis of RNA-Seq Data to infer key molecular players involved during host response to Newcastle disease virus challenge in transcriptome of *Gallus gallus domesticus* in Aseel, Nicobari, Fayoumi and Leghorn.
- Identification of long non-coding RNAs interacting with XIST gene during early embryonic developmental stages of *Bos taurus*.
- Analysis of RNA-Seq Data to identify role of lncRNAs during Bovine tuberculosis in *Bos taurus*.

- *In-silico* study of the structure and interacting domains of BEF virus $\alpha 1$ protein.

Objective

Analysis of RNA-Seq Data to infer key molecular players involved during host response to Newcastle disease virus challenge in transcriptome of *Gallus gallus domesticus* in Aseel, Nicobari, Fayoumi and Leghorn.

1. To perform transcriptome sequence data analysis of Leghorn and Fayoumi breeds
2. To carry out RNA sequencing of spleen tissue samples from the three indigenous breeds Aseel, Nicobari and WLH.
3. To explore differentially expressed significant mRNAs and non-coding RNAs (ncRNAs) across breeds
4. To construct ncRNAs targeted gene co-expression network

Work Reported in 2022-2023

1. Analysis of RNA-Seq Data to infer key molecular players involved during host response to Newcastle disease virus challenge in transcriptome of *Gallus gallus domesticus* in Aseel, Nicobari, Fayoumi and Leghorn.

Newcastle disease is a highly infectious economically devastating disease caused by Newcastle disease Virus in Chicken (*Gallus gallus*). Leghorn and Fayoumi are two breeds which show differential resistance patterns towards NDV. This study aims to identify the differentially expressed genes and lncRNAs during NDV challenge which could play a potential role in this differential resistance pattern. A total of 552 genes and 1580 lncRNAs were found to be differentially expressing. Of them, 52 genes were annotated with both Immune related pathways and Gene ontologies. We found that most of these genes were upregulated in Leghorn between normal and challenged chicken but several were down regulated between different timepoints after NDV challenge, while Fayoumi showed no such downregulation. We also observed that higher number of positively correlating lncRNAs were found to be downregulated along with these genes. This shows that although Leghorn is showing higher number of differentially expressed genes in challenged than in non-challenged,

most of them were downregulated during the disease between different timepoints. With this we hypothesize that the downregulation of immune related genes and co-expressing lncRNAs could play a significant role behind the Leghorn being comparatively susceptible breed than Fayoumi. The computational pipeline is available at <https://github.com/Venky2804/FHSpipeline>.

Paper is under review in IJBM: Integrated analysis of genes and long non-coding RNAs in Trachea transcriptome to decipher the host response during Newcastle disease challenge in different breeds of Chicken.

2. Porcine early embryo lncRNAs and their molecular insights in the developmental process.

Pig model is more similar to humans in terms of embryo development as compared to other animal models. In addition, to this the similarity in anatomy and physiology of porcine model with human helps in understanding of genetics and molecular mechanisms of several human diseases and health. Porcine epiblast derived pluripotent stem cells have application in livestock breeding. The molecular mechanism involved during pig embryo development is largely regulated by long non coding RNAs the regulatory elements of the genome. Here we analyzed the transcriptome data of porcine scRNA-seq from four different stages; E11 epiblast cells, E14 somatic cells E14 Primordial germ cells and E31 primordial germ cells to understand the role of long non coding RNAs, their distribution across the chromosomes over time, their genomic location. The differential expression profile of the genes between different time points shows some similarity and also differences in expression for certain genes as the embryo grows from E11 epiblast to E31 primordial germ cells. Further, we analyzed the differentially expressed long non coding RNAs and their co-expression. The functional annotation of the differentially expressed lncRNAs and DEGs of the pig early embryo shows important functions including anatomical structure developmental, cellular processes, metabolic processes, developmental process.

3. Analysis of RNA-Seq Data to identify role of lncRNAs during Bovine tuberculosis in *Bos taurus*.

Long non-coding RNAs (lncRNAs) are the transcripts of length longer than 200 nucleotides. They are involved

in the regulation of various biological activities. Bovine tuberculosis, caused by (*M. bovis*), is an important enzootic disease affecting mainly cattle, worldwide. Despite the implementation of national campaigns to eliminate the disease, bovine tuberculosis remains recalcitrant to eradication in several countries. Here, we report the analysis of the transcriptomic data of whole blood cells collected from experimentally infected calves with a virulent strain of *M. Bovis* for studying the lncRNAs involved in regulation of these genes. Using bioinformatics approaches, a total of 51,812 lncRNAs were extracted and 86 and 29 lncRNAs were differentially expressed from infected and uninfected calf samples at each of the 8- and 20- w.p.i time points, respectively. Functional annotation using co-expression analysis will reveal the involvement of lncRNAs in the regulation of various pathways.

4. *In-silico* study of the structure and interacting domains of BEF virus $\alpha 1$ protein.

Bovine Ephemeral Fever (BEF) virus is an arthropod-borne rhabdovirus that is enclosed in a cone- or bullet-shaped envelope and contains negative-sense single-stranded RNA. The BEF virus causes acute febrile illness in cattle and water buffalo, which results in fever, shivering, lameness, and stiff muscles in affected animals. The genome is comprised of several open reading frames (ORFs) encoding, structural (N, P, M, G & L), non-structural (GNS), and several small accessory proteins ($\alpha 1$, $\alpha 2$, $\alpha 3$, β , and γ). The structural proteins, namely, nucleoprotein (N, 52 kDa), phosphoprotein (P, 43 kDa), matrix protein (M, 29 kDa), glycoprotein (G, 81 kDa), and the polymerase or large protein (L, 180 kDa) constitute the virion. Since one accessory protein ($\alpha 1$) of BEFV has been proposed as viroporin in one previous study, however, no other information except the amino acid sequence is known about alpha 1 to date. Therefore, we are interested in looking into the structure of $\alpha 1$. We have modeled and predicted the oligomeric state of alpha 1 as pentamer and done MDS analysis to check the stability of the complex and it was found stable. Since Alpha 1 has the feature of viroporin and might be forming and assembling in the host

membrane to form the host. We are now working on the protein-membrane complex, and we have built the protein-membrane complex but the stability of the complex needs to be checked in a lipid environment by MDS.

Future Plans

1. To carry out the analysis part of RNA sequencing and identify differentially expressed genes and lncRNAs in the spleen tissue samples of the three indigenous breeds Aseel, Nicobari and WLH.
2. To identify differentially expressed genes during embryonic development of *Sus scrofa*.

Publications :

1. Jali I, Vanamamalai VK, Garg P, Navarrete P, Gutiérrez-Adán A, **Sharma S**. Identification and differential expression of long non-coding RNAs and their association with XIST gene during early embryonic developmental stages of *Bos taurus*. *Int J Biol Macromol*. 2022 Dec 24;S0141-8130(22)03132-4. doi: 10.1016/j.ijbiomac.2022.12.221. Epub ahead of print. PMID: 36572076. Impact factor 8.025; Corresponding author
2. Garg P, Vanamamalai VK, Jali I, **Sharma S**. In silico prediction of the animal susceptibility and virtual screening of natural compounds against SARS-CoV-2: Molecular dynamics simulation based analysis. *Front Genet*. 2022 Aug 30;13:906955. doi: 10.3389/fgene.2022.906955. PMID: 36110222; PMCID: PMC9468858. Impact factor 4.37; Corresponding author
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Genomics and Computational Biology

Sarwar Azam

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- Dr Vikas Vohra, NDRI
- Dr Shoor Vir Singh, GLA University
- Dr Ravi Kumar, IVRI
- Dr Benjamin D Rosen, USDA, USA
- Dr Curtis P Van Tassell (Curt), USDA

Theme of the scientific activity: The lab's primary focus is on genomic research using sequence data. This involves analyzing data for various purposes such as genome annotation, gene expression, identification of single nucleotide morphism (SNPs), comparative genomics, phylogenomics, diversity, and evolutionary analysis. In addition to research, the lab also aims to develop user-friendly bioinformatics tools and pipelines to support genomic studies

Genomics for conservation of indigenous cattle breeds and for enhancing milk yield

A cattle SNP chip called IndiGau, consisting of 788,496 markers, was developed in the project for

genotyping indigenous cattle. This IndiGau chip is the world's largest cattle SNP chip. The chip was used to genotype all the breeds of indigenous cattle. In this regard, we genotyped 2,086 animals from 40 breeds. We pre-processed the genotype data in a step-by-step manner to create a reference set of pure lines for each breed. A total of 45,098 markers were removed due to missing genotype data, using a threshold of 10%, and 38,670 markers were removed due to the Hardy Weinberg Exact test. Additionally, 2,507 markers were removed based on the MAF threshold (0.01). However, one animal was excluded due to missing genotypes. We also eliminated 189 animals based on heterozygosity and 187 animals

based on an IBD threshold of 99.00%. Ultimately, a neighbor-joining distance matrix was calculated, and animals that did not cluster within their group were discarded. Finally, a reference set of 1,557 individuals representing all 40 breeds was created for downstream genetic differentiation analysis. Using this data, a phylogenetic tree representing all the breeds and their relative distances was constructed (Fig 1). Fst analysis, ROH and GWAS on reference set are under progress. Initial analysis has revealed that Ladakhi is the most distant breed among indigenous cattle.

Developing de novo genome assemblies of milch breeds of cattle i.e. Kankrej, Tharparker, Red Sindhi, Sahiwal and Gir

The draft genome assemblies of each breed (Gir, Kankrej, Tharparker, Sahiwal and Red Sindhi) were further clustered, ordered, and oriented into pseudomolecules using a reference-guided approach where the Brahman genome assembly was used as a template. The results showed that 93.3% to 96.7% of the genome was assembled into pseudomolecules, with the highest percentage for Sahiwal (96.71%) and Red Sindhi (96.58%), and the lowest for Gir (93.38%). In comparison to the Brahman reference genome, the number of scaffolds in each assembly was higher, with Tharparker having 27,311, Gir having 25,313, Kankrej having 20,861, Red Sindhi having 16,082, and Sahiwal having 17,113. However, the N50, L50, and other assembly statistics were similar to the Brahman reference genome, indicating that high-quality reference-guided assemblies of each breed were achieved. The reference-guided assemblies of Red Sindhi, Sahiwal, Tharparker, Kankrej, and Gir breeds successfully identified a total of 8806, 8800, 8673, 8695, and 8680 complete BUSCO genes, respectively (Table 1). These numbers correspond to an overall annotation rate ranging from 94.1% to 95.5%. These results are comparable to the reference assembly of Brahman, which achieved an annotation rate of 95.7% with 8827 complete BUSCO orthologs. Overall, these findings indicate that the genome assemblies of all five breeds exhibit a high level of completeness, with the majority of BUSCO genes being present as complete genes and a relatively low percentage of missing or fragmented genes. Furthermore, the assemblies of each breed underwent annotation for various types of repeats. The analysis revealed that approximately 47% of the genome of Indian cattle breeds consisted of repeats (Table 2). Long Interspersed Nuclear

Elements (LINEs) were the most prevalent class of repeats, followed by Short Interspersed Nuclear Elements (SINEs), Long Terminal Repeats (LTRs), and DNA elements. Only a small fraction, approximately 0.02%, of interspersed repeats remained unclassified.

Identification and design of next-generation Multi Epitope Vaccine (MEV) Candidates against *Toxoplasma gondii* from its core genome

Protein Sequence Data: Based on a literature review, 18 *T.gondii* strains have been sequenced to date, with only 15 strains having annotated protein sequences. These protein sequences were obtained from ToxoDB and analysed using the GET_HOMOLOGUES software package. Analysis revealed 5054 core genomes present in all species (100%), and the pan genome consists of 21,060 genomes, with 6168 soft-core genomes present in at least 95% of species, and the rest being cloud and shell genomes. The pan genome was partially open, and the core genome was fully closed. Orthologs were concatenated and analysed to establish phylogenetic associations among *T. gondii* strains. Clustering based on amino acid identity provided two groups. The 5054 core genes identified were used in the Reverse Vaccinology workflow.

Identification of Secretory Proteins: Core genome were analysed using subcellular localization tools such as BUSCA, Cello and wolf Psort. A total of 334 proteins predicted to be Extracellular and Plasma membrane proteins using all the three tools. These 334 proteins were further screened for transmembrane helices. 219 proteins with a PredHelix value of <1 were included; others were removed from dataset. Signal peptides were removed, and functional sequences of 219 proteins were taken forward for analysis as potential antigens.

Human Non-Homologous Proteins Identification: A distinct filter was used to identify non-homologous human proteins, providing 186 proteins after removal of 80mer and 9mer proteins. Out of 186 non-homologous proteins, 137 proteins were filtered based on antigenicity and taken further for virulent protein identification.

Virulent Proteins Identification: The 137 extracellular sequences were subjected to blast against ProtVirDB, a web-based database of virulent proteins belonging to protozoan species. Five antigenic sequences were finalized using blast results: TGARI_208030, TGARI_255260, TGARI_260190, TGARI_267130,

TGARI_315730. These proteins were sorted based on their virulence gene ID from ProtVirDB and their high antigenicity scores. The proteins act as adhesion to and invasion of host cells and tissues.

Protein Interaction: STRING was used to examine the prioritised proteins' cellular interactome for both direct and indirect connections. Understanding the inhibitory influence of the selected proteins on pathogen survival requires knowledge of their interaction network. The goal of the STRING database is to gather, analyse, and disseminate user-friendly and extensive protein-protein interaction data.

Further evaluation of immunological properties of these five candidate genes are under progress.

Validation of DBT- NIAB SNP chip for breed identification and preliminary genome-wide association studies of milk yield

This project focuses on phenotyping various breeds, primarily facilitated by collaborators such as NDDB. They have committed to providing samples from Sahiwal, Gir, Kankrej, and Tharparkar breeds. Additionally, Lam Farms of Sri Venkateswara Veterinary University (SVVU) is assisting in

recruiting samples from the Ongole breed. Our main responsibility in this project is to genotype the phenotyped samples using the IndiGau SNP chip. Ultimately, we aim to conduct association analysis to identify the genes influencing milk traits. So far, we have collected a total of 2485 samples with the help of NDDB. Unfortunately, 770 of these samples could not be processed further due to low DNA yield or poor sample quality. However, we have successfully processed 1074 samples for genotyping using the IndiGau SNP chip. The genotyping data has been generated for 852 samples, with an average SNP calling rate of over 99%. This indicates that the genotyping process has been highly successful in capturing the genetic information of the animals.

To ensure we have a sufficient number of genotyped animals for our analysis, we are continuously collecting blood samples from phenotyped animals. This ongoing effort aims to meet our targeted number of genotyped animals in the project, enabling us to conduct a robust association analysis. The ultimate goal of this analysis is to identify the specific genes that influence milk traits in the studied cattle breeds.

Table1: BUSCO Gene Annotation Results for five Cattle Breeds

BUSCO genes	Gir		Kankrej		Tharparkar		Sahiwal		Red Sindhi	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total	9226	100	9226	100	9226	100	9226	100	9226	100
Completed	8680	94.10%	8695	94.30%	8673	94.00%	8800	95.30%	8806	95.50%
Completed Single copy	8470	91.80%	8514	92.30%	8487	92.00%	8611	93.30%	8607	93.30%
Completed Duplicate	210	2.30%	181	2.00%	186	2.00%	189	2.00%	199	2.20%
Fragmented	181	2.00%	170	1.80%	187	2.00%	136	1.50%	138	1.50%
Missing	365	3.90%	361	3.90%	366	4.00%	290	3.20%	282	3.00%

Table 2: Repeat Statistics of Sahiwal assembly taken as representative of Indian breeds

Class	Number of elements	Length occupied	Percentage of sequence
SINEs:	2086750	312701718	11.52 %
Alu/B1	0	0	0.00 %
MIRs	400288	57564085	2.12 %
LINEs:	1337525	738732518	27.22 %
LINE1	591756	336445645	12.40 %
LINE2	254838	65408548	2.41 %
L3/CR1	34693	7192054	0.27 %
RTE	455093	329512208	12.14 %
LTR elements:	411541	128307920	4.73 %
ERV1	75422	29673913	1.09 %
ERV1-MaLRs	121941	39931542	1.47 %

ERV_classI	84597	37315247	1.38 %
ERV_classII	112533	17388816	0.64 %
DNA elements:	290803	57651148	2.12 %
hAT-Charlie	164389	30633427	1.13 %
TcMar-Tigger	45393	11953299	0.44 %
Unclassified:	3149	483409	0.02 %
Total interspersed repeats:	repeats:	1237876713	45.61 %
Small RNA:	253728	42962463 bp	1.58 %
Satellites:	2225	4012991	0.15 %
Simple repeats:	530371	21486339	0.79 %
Low complexity:	82106	3994670	0.15 %
GC level:			41.79 %
Total		1268195242	46.73 %



Figure1: Phylogenetic tree of 40 indigenous cattle breeds.

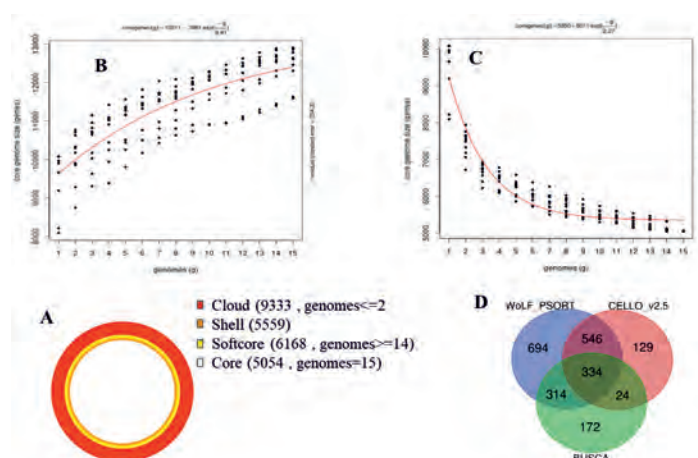


Figure2: Pangenome analysis of 18 genomes from *Toxoplasma gondii*. (A) Partition of OMCI Pangenomic matrix into shell, cloud softcore and core compartments. (B) Estimation of core genome size. (C) Estimation of pangenome size. (D) Venn diagrams of extracellular proteins predicted by WoLF PSORT, Cello and BUSCA tools.



The lab group (Left to right): Krutideppa Rout, sumaiya Khatun, Sarwar Azam and Abhisek Sahu



Facilities at NIAB



Photo Courtesy: Himanshu R. Patil

LARGE ANIMAL FARM



The Large Animal Facility of NIAB houses Indigenous breeds of cattle and goat viz. Dangi and Osmanabadi respectively. Large Animal Facility is registered with Committee for Control and Supervision of Experiments on Animals (CCSEA: 2063/GO/RBi/SL/19/CCSEA) dated 10th April 2019. The Large Animal Facility aligns and functions as per the suggestions and recommendations provided by CCSEA and the institutional Ethical body IAEC. The main goal of the Large Animal facility is to provide all necessary assistance to the institute's scientific fraternity and research scholars to carry out CCSEA-approved experimentation on large animals with an ethical and humane approach. Large Animal Facility has also received the license for "Breeding animals for trade" i.e. trade license from CCSEA in July 2022. CCSEA-approved experimentations are being successfully carried out on animals of both species.

Annual CCSEA inspection of Large Animal Facility was conducted in March 2023, wherein the committee appreciated the efforts taken at Large Animal Facility towards scientific research and the welfare of animals. All essential records as required by CCSEA e.g. Birth records, Mortality records, Animal feed records, etc. are being maintained and routinely updated at Large Animal Facility. These records are also presented to the CCSEA committee during the annual inspection. Biological samples such as blood, milk, placenta,

faeces, etc. of both breeds are also being provided to scientists/research scholars of the institute.

Mandatory measures are also present at Large Animal Facility, animals are being maintained healthy for experimentation by following stringent cleaning, ectoparasite, and endoparasite control measures. Veterinary care and management of animals which are subjected to CCSEA experimentation are well taken care of. Pre and post-operative care of experimental animals is carried out under the



supervision of the Veterinarian In-Charge and Farm Manager of the Large Animal Facility. Neonatal care and management of both breeds is also done. Animals are regularly checked for any disease or discomfort.

Scholars of NIAB are also being sensitized about humane handling of animals and ethics of animal experimentation. Large Animal Facility employees are trained to handle animals ethically with utmost care and to assist veterinarians while performing animal experiments and routine veterinary interventions.



(Animals at LAF):



Dangi Cattle



Osmanabadi Goat



The lab group (Left to right): Krishna Malla, Manas Gogoi, Dr. Himanshu R. Patil (Veterinary In-charge), Dr. Kalpendra Kohli (Farm Manager), Raju Guwala and Lalendra Kumar

To make the functioning of Large Animal Facility more sustainable, we have cultivated around 10,000 Kgs of green fodder which was made available to animals, thereby saving approximately 1.5-2 Lacs capital cost significantly reducing cost of animal feeding. A Bio gas plant for efficient utilisation of Animal by-products is being constructed at Large Animal Facility.

Future Directions:

1. Adoption of advance animal reproductive technologies for enhanced production and productivity of animals.
2. Maintenance of animals in healthy state and facilitate research on them as per the CPCSEA ethical guidelines.

Animal Resource & Experimental Facility

Basic Information

The experiments conducted on animals at this facility are through the approval of Institutional Animal Ethics committee (IAEC). Russell and Burch's concept of application of 3R Reduction, Refinement and Replacement in all experiments on animals are closely observed. The animal facility at the institute is established in concurrence with the national and international guidelines to ensure welfare of animals during and after the experiments. Guidelines of Committee for Control and Supervision of Experiments on Animals (CCSEA) are strictly followed in the interest of the welfare and ethics.

Objectives and Key features

The laboratory animal facility functions on the main objective of care, breeding, management and supply for the experimental usage of laboratory rodents. The department provides the spectrum of services in the area of research and development using laboratory rodents viz. mice, rats, guinea pigs and Rabbits.

It focused to provide husbandry, enrichment, nutrition, veterinary care, technical and professional support to the scientific community of the Institute to facilitate research on animals where animal welfare and human handling ensures that the establishment and minimize the possibility of needless handling, stress and discomfort to the animals housed where defined barrier practices are followed strictly.

The facility has CCTV system, BMS Access for the controlled conditions. Microenvironment parameters

like temperature humidity, air velocity pressure and running of AHU are closely monitored for seasonal variations. Automatic Dark and light cycle (12:12 hours) to follow circadian rhythm and normal physiological behaviour of these nocturnal animals. Sterile conditions for biosecurity are maintained through sterilization, feed quality and water quality are regularly checked.

The facility is registered with Committee for Control and Supervision of Experiments on Animals (CCSEA), Ministry of Fisheries, Animal Husbandry, Dairying Government of India with registration number 2063/GO/RBi/SL/19/CPCSEA which is valid till 10/04/2024

This facility housed inbred strains OF Balb/cJ, C57/BL6J, CBA/C3J, NOD SCID, FVB and NeoR Transgenic strain line, outbred CD1 mouse line and outbred Wistar Rats are maintained New Zealand white Rabbits are frequently being used for the generation of antibodies, Guinea Pigs are housed on the need basis. Recently the facility has established the area for housing and experiment on Athymic nude mice. All records are properly maintained related to breeding and experiments using registers and software tools. At present this facility housed Approx. 3000 Rodents including breeding and experiments. Facility complies the inspection done by CCSEA committee annually.

The breeding program for the propagation of the mice lines inbred/outbred is planned and executed as per the requirements given to the facility to meet the needs of scientist to conduct the experiments on animals.

Maintaining Good Laboratory Practices (GLP) for the Animal Facility is intended to assure quality of animals and safety of personnel involved in handling, biomedical and behavioural research. These include supervision of animal nutrition, disease diagnosis, surveillance, treatment and the preventive control measures in the colonies of animals/rodents housed at the facility.

Animal and staff health monitoring program is conducted yearly to check the health status for the preventive measures if any. It is followed by the vaccination for the staff for the occupational health and staff Relevant records in line of the guidelines are maintained appropriately using record books and software tools.

Technical assistance is supported with highly skilled staff to perform the procedures like blood collections or organ collections, necropsy etc. other laboratory surgical procedures and live animal imaging using IVIS Spectrum.

Transgenic animal laboratory is the additional feature

of the facility where efforts are made establish the transgenic lines, for its relevant usage on breeding and expansion

Facility conducts routine training program of the staff and students for the different protocol and procedures.

Dr Jayant P. Hole



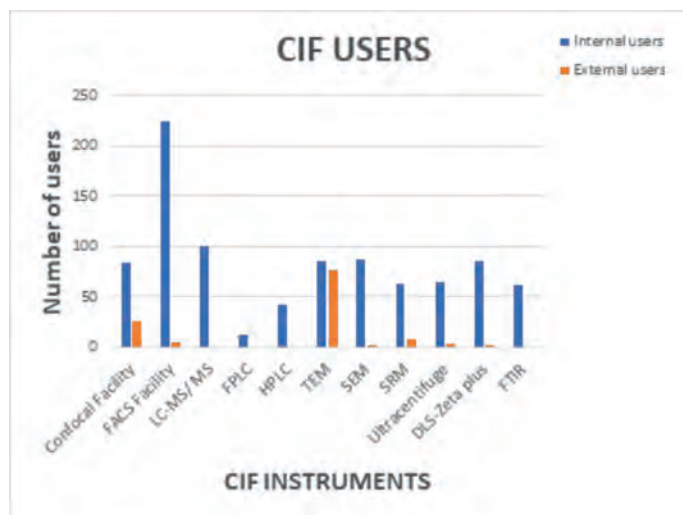
CENTRAL INSTRUMENTATION FACILITY (CIF)

- NIAB Central Instrumentation Facility is established to bring all the high-end equipment under one roof. This minimizes the duplication of sophisticated equipment and use them to the full potential.
- CIF serves the students, fellows and faculty members to perform sample analysis in a hassle-free manner.
- Supports external users from various Universities, Research Institutions and also industries.
- Provides training to students on usage and application of the instruments.
- Encourages outreach activities like providing tour of the CIF to students from various educational/ research Institutions.
- Facilitates the workshops/hands on training programmes organized by the institute for providing an exposure to the students/fellows from different academic/research institutions.

CIF is equipped with the following equipment/facilities:

- Central Imaging Facility: Confocal microscope, Live cell imaging microscope, Super Resolution Microscope, High content screening system (HCS), SEM and TEM.
- Proteomics/Chromatography facility: HPLC (Analytical/ Preparative), FPLC and LC-MS/MS
- Flow Cytometry Facility: LSR Fortessa, FACS Aria III, FACS Melody
- Immuno histo chemistry facility, Ultra Centrifuge, CD Spectrophotometer, FTIR, DLS and Zeta plus.

CIF USER DETAILS AND REVENUE GENERATED FOR THE FINANCIAL YEAR 2022-23



S.No	CIF INSTRUMENTS	REVENUE GENERATED
1.	Confocal facility	1,33,945/-
2.	FACS facility	2,05,216/-
3.	LC-MS	6,37,500/-
4.	FPLC	7,400/-
5.	HPLC	1,50,600/-
6.	TEM	6,83,000/-
7.	SEM	2,05,800/-
8.	SRM	1,07,350/-
9.	Ultra-centrifuge	1,12,665/-
10.	DLS and Zeta Plus	12,017/-
11.	FTIR	22,853/-
Total		22,78,346/-

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Technologies Transferred

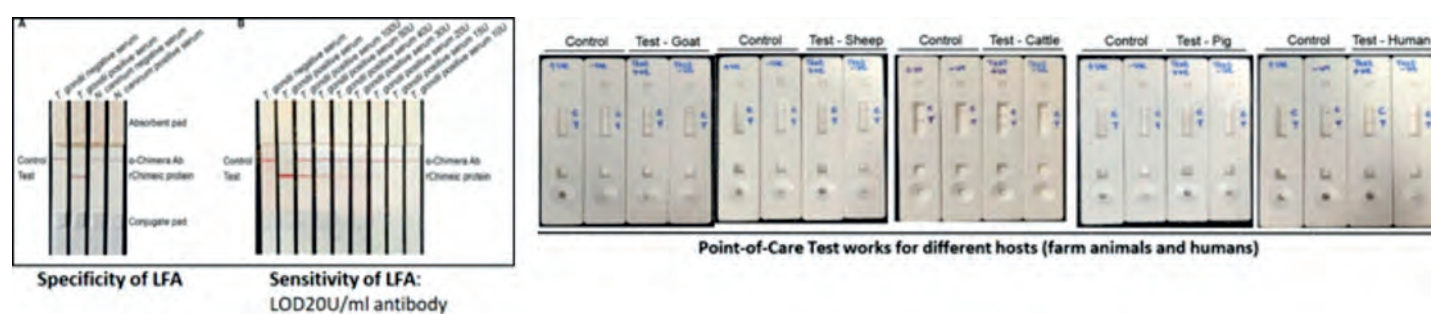
Development of point-of-care test for detection of *Toxoplasma gondii* antibodies in animals and humans

- Dr. Abhijit Deshmukh, Scientist D

Toxoplasmosis detection LFA kit

A lateral flow assay for detection of toxoplasmosis in animals and humans has been developed. This test is simple, rapid (10 min) and does not require any specialized equipment for result visualization or interpretation. The developed technology is specific and sensitive to commercially available ELISA kits, and is very cost effective.

The technology has been transferred to M/S Techinvetion Lifecare Pvt. Ltd. on 20/12/2022



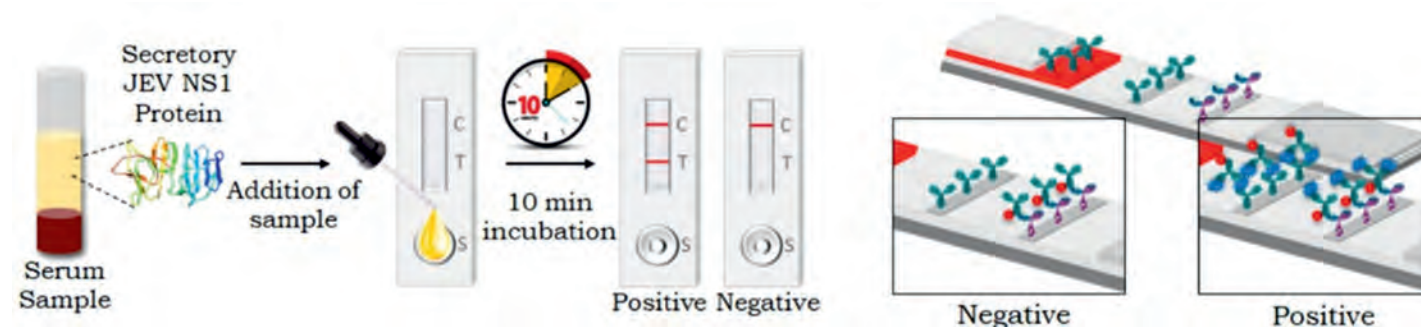
Japanese Encephalitis Virus detection technology- Dr. Sonu Gandhi, Scientist -E

Japanese Encephalitis detection kit

The technology is based on an antigen based lateral flow assay for rapid screening of Japanese Encephalitis Virus (JEV) in clinical serum samples. It provides a recombinant Japanese Encephalitis Virus (JEV) non-structural 1 (NS1) protein and its polyclonal antibody for development of cost-effective and a simple lateral flow assay to detect the presence of JEV in humans and animals.

The technology has also undergone inter-lab and third-party validation for further confirmation of presence or absence of JEV in clinical serum samples. The sensitivity of the technology is 97.14%.

The technology has been transferred to M/s Paramcare Life Sciences Pvt. Ltd. on 22/03/2023.





MoUs



Photo Courtesy: Varadendra Mazumdar



The details of MoU's signed during the period from 1 April 2022 to 31 March 2023 by NIAB are given below:

1. MoU signed with P.V. Narsimha Rao Telangana Veterinary University Hyderabad for collaborative research in high priority areas associated with veterinary and animal health on May 11, 2022.
2. MoU signed with the University of Hyderabad on July 11, 2022 to collaborate on fundamental areas of biological sciences. Faculty/ Researchers and Scientists/Visiting Faculties from both the institutions will collaborate on Animal Biotechnology or allied areas



LIST OF EVENTS HELD IN THE YEAR 2022-23

DATE	LECTURE/MEETING DETAILS
13 April, 2022	17th Finance Committee meeting of NIAB was held on 13th April 2022 at DBT, New Delhi
22 April, 2022	The Earth Day was observed on 22nd April 2022 at NIAB to spread awareness about issues, including pollution, deforestation and global warming. In view of this Earth Hour, the annual practice to switch off the lights is observed to show support for the fight against climate change and commitment towards a better planet.
26 April, 2022	Dr. G. Taru Sharma, Director, NIAB inaugurated the "Ultrastructural imaging and its applications in livestock research", a high end workshop on 26th April 2022 at NIAB, mainly to Train Masters, Ph.D. Students on the Fundamental Aspects of Ultrastructure Imaging, to Provide hands-on-training to Master and Ph.D. Students on Super Resolution Microscope, Transmission Electron Microscope; Scanning Electron Microscope, and Expert talks on ultrastructural imaging.
26 April, 2022	Dr. Sanjay Singh, Scientist-F delivered a lecture on "Nanomaterials-based Probes for Animal Imaging" 26th April 2022 during Workshop on - Ultrastructural imaging and applications in Livestock Research organized by NIAB, Hyderabad
26-29 April, 2022	4-day SERB accelerate Vigyan sponsored workshop on "Ultrastructural imaging and its applications in livestock research" was conducted from 26th to 29th April 2022. Workshop included series of talks, hands on with ultrastructural imaging instruments.
27 April, 2022	Director, NIAB chaired an important one-day meeting with the BCIL team who are the enablers for IP; technology transfer for NIAB on 27th April 2022. They made a presentation and interacted with scientists of NIAB.
2 May, 2022	Director, NIAB inaugurated Swachhata Pakhwada 2022 on 2nd May 2022 and the programme was started by taking "Swachhata Pledge" by all the employees at NIAB.
	NIAB celebrated Swachhata Pakhwada-22 till 15th May 2022 and conducted various activities like swachhata daud, plantation drive, cleaning of surroundings etc the report of the same has been mailed to DBT.
10 May, 2022	Dr. G. Taru Sharma, Director, NIAB inaugurated NIAB's incubation center on 10th May 2022 and ACS Neoteric Technologies, Hyderabad have started working in the incubation facility
11 May, 2022	MoU was signed with P.V. Narsimha Rao Telangana Veterinary University, Hyderabad for collaborative research in high priority areas associated with veterinary and animal health.

DATE	LECTURE/MEETING DETAILS
14 May, 2022	NIAB Ph.D students attended Hy-SCI 2022-Hyderabad's student centric conference on 14th May 2022 at CDFD, Hyderabad. Ms. Binita Roy Nandi, PhD student, NIAB was awarded Second prize for oral presentation in Hy-Sci 2022.
17 May, 2022	Dr. Shailesh Sharma, Sci-D and Bookya Rajendraprasad, Librarian attended Tolic-4 meeting on 17.05.2022 at AMD, Hyderabad.
19 May, 2022	17th Governing Body meeting of NIAB was conducted on 19th May 2022 at DBT, Delhi.
24 May, 2022	The 11th Foundation Day of NIAB was celebrated 25th May 2022. In this connection, several activities were organized throughout the month. Two "Walkathon" events were organized on 11/05/2022 and 17.05.2022, various Sports like Cricket, Badminton, Table Tennis, Chess, Carrom etc were conducted from 17/05/2022 - 24/05/2022 and awards for the same have been given on 25th May 2022. On 11th May 2022, a free eye-checkup camp was organized at NIAB for all the staff (Dr. M. Sudha from Gagana Eye Hospital, Hyderabad). Also, conducted "Own a Plant Drive" where 100 plants were planted in the NIAB campus on 23.05.2022 and finally conducted the cultural programme on 24.05.2022 evening at NIAB.
25 May, 2022	Professor SC Lakhota, Distinguished Professor (BHU) & SERB Distinguished Fellow delivered Foundation Day lecture on "Non-coding RNAs: Key regulatory players in the maintenance of cellular homeostasis" on 25th May 2022 at NIAB
27 May, 2022	Dr. Sanjay Kumar Singh, Sci-F, Dr. Shailesh Sharma Sci-D, Shri Harjit Singh Senior Manager, Shri Pavan Kumar, Asst. Manager, Shri Shshikant Gawai Technical Officer, Bookya Rajendraprasad, Librarian attended a training programme of Tolic-4 (Webex) on 27.05.2022 at Southern Zone Hyderabad.
2 June, 2022	Second Dr. Lalji Singh Memorial Lecture was delivered by Dr Shekhar C. Mande, Former Director-General, CSIR & Secretary, DSIR, Govt. of India on "How atomic view has enhanced our understanding of biology" on 2nd June 2022 at NIAB, Hyderabad
3-4 June, 2022	Laboratory Animal Scientists' Association (LASA) conference 2022 was organized by DBT-NIAB, Hyderabad, ICMR-NARFBR, Hyderabad & LASA India on 3rd and 4th June 2022 at ICAR-NAARM, Hyderabad.
5 June, 2022	NIAB celebrated "World Environment Day 2022" on 5th June 2022 by planting trees inside the campus
9-10 June, 2022	Dr. G. Taru Sharma, Director, Dr. Nagendra R. Hegde, Scientist H & Head (A&R), Dr Pankaj Suman, Scientist D, Mr Sarwar Azam, Scientist C & Mr. Shashikanth Gawai, Technical Officer, NIAB participated in the "Biotech Start-up Expo-2022" organised by the Department of Biotechnology, Ministry of Science & Technology, Government of India along with its public sector undertaking Biotechnology Industry Research Assistance Council (BIRAC) held on 9th & 10th June 2022 at Pragati Maidan, New Delhi.

DATE	LECTURE/MEETING DETAILS
21 June, 2022	As a part of International Yoga Day, Yoga Day lecture and demonstrations were conducted on 21st June 2022 at NIAB, Hyderabad and all the employees & students have participated in the yoga day celebrations.
5 July, 2022	Dr. Lalji Singh Memorial Lecture for 2021 was delivered by Prof. Partha P. Majumdar, Distinguished Professor, NIBMG, Kalyani on "Tracing Some Developments on Human Genetics in India" on 5th July 2022, at 9:00 am in NIAB Auditorium.
11 July, 2022	MoU signed with University of Hyderabad for collaborative research.
15 July, 2022	Distinguished lecture on "Heart health in 21st century" was delivered by Dr. Sudheer Koganti, Cardiologist, Citizens Speciality Hospital, Hyderabad On 15th July 2022 at 4:00 PM in NIAB Auditorium.
18 July, 2022	DBT-NIAB science museum established at Aadarsh Vidyalaya, Shahpur, Yadgir (Aspirational District) was inaugurated by Dr G. Taru Sharma, Director on July 18, 2022.
22-23 July, 2022	NIAB co-organized a MILAN (Meeting of Indian Livestock-farmers and Agriculturists with NIAB scientists) with Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Kashmir at Srinagar, from 22 -23 July 2022. The meeting was planned and coordinated by teams led by Director Dr. Taru Sharma, Drs. Pankaj Suman (Co-ordinator), Abhijit S. Deshmukh, and Nirmalya Ganguli from NIAB, Hyderabad, jointly with Dr. Riaz A. Shah (Professor, Dept. of Animal Biotechnology) from SKUAST, Srinagar.
10 August, 2022	Tiranga Rally was conducted at NIAB on 10th August 2022.
11 August, 2022	NIAB's Institute Day lecture was delivered by Prof Priya Abraham, Director, National Institute of Virology, Pune, and Prof. Sharmila Bapat, Scientist-G, National Centre for Cell Science, Pune on "Our Planet, Our Health, Our Future" at 10.30AM, and on "Plasticity in Biological Systems" at 12 noon respectively at NIAB, Hyderabad.
13-15 August, 2022 15 August, 2022	NIAB participate in the "Har Ghar Tiranga" campaign from 13-15 August 2022. 76th Independence Day was celebrated on 15th August 2022 by hoisting the Indian National flag at NIAB, Hyderabad
18-21 August, 2022	Dr Aurélie Jory (Dr Lily) from NCBS, Bengaluru visited NIAB from 18th - 21st August 2022 to interact and to train the current working team at the transgenic mouse facility and to discuss about extending the existing transgenic facility at NIAB.
5 September, 2022	Teachers Day was celebrated on September 5th, 2022 at NIAB, Hyderabad.
6-7 September, 2022	2 days workshop on FACS was held on 6th and 7th September 2022 at NIAB by BD Biosciences mainly to understand the FACS-based experiment designing as well as the machine handling.
8 September, 2022	18 th Finance Committee Meeting of NIAB was held on 8th September 2022 through VC.

DATE	LECTURE/MEETING DETAILS
13 September, 2022	One Day Symposium and brainstorming on Interdisciplinary Approaches Addressing Augmentation of Livestock Reproduction was conducted on 13.9.2022.
15-16 September, 2022	NIAB Organized a One Health Workshop in collaboration with AIIMS-Bibinagar and NASI at AIIMS-Bibinagar. Organized by Dr Nagendra R Hegde, Scientist-H NIAB and Dr Rahul Narang, AIIMS-Bibinagar.
21-22 September, 2022	Scientific advisory committee meeting of NIAB was held on 21st & 22nd September 2022
14-29 September, 2022	NIAB celebrated "Hindi Diwas/Pakhwada 2022", organized various activities between 14th September to 29th September 2022 to popularize the Hindi language.
2 - 31 October, 2022	NIAB celebrated the FIT India freedom movement under Azadi Ka Amrit Mahotsav by conducting various activities like 2K plog run, internal walk, write-up etc from October 2, 2022 till the end of the month with the theme "Azadi ke 75 saal, fitness rahe bemisaal".
4 October, 2022	Dr. Satish Kumar Gupta, Former Deputy Director, NII, New Delhi delivered World Animal Day Lecture on "World Animal Day: Fertility Control measures to mitigate wildlife-human conflicts" on 4th October 2022 at NIAB.
19 October, 2022	As a part of the educational tour, students and faculty of Kristu Jayanthi college, Bangalore has visited NIAB on October 19, 2022
20 October, 2022	All the staff at NIAB has taken the LiFE pledge and viewed online the Mission Life Launch Event on October 20, 2022.
31 October, 2022	Vigilance Awareness Week, 2022 is being observed by NIAB with the theme "Corruption-free India for a developed Nation" from October 31, 2022 to November 6, 2022. All the scientists and staff at NIAB took the integrity pledge on October 31, 2022.
2 November, 2022	NIAB's 18th Governing Body meeting, Inauguration of Animal Resource & Experimental Facility, and naming of Auditorium as "MK Bhan Auditorium" by Dr. Rajesh S. Gokhale, Secretary, DBT was held on November 2, 2022 at NIAB, Hyderabad
3 November, 2022	Inauguration of High Content Screening Facility & World One Health Day lecture was delivered by Prof. K. VijayRaghavan, Former Principal Scientific Adviser to Government of India on November 3, 2022 at NIAB, Hyderabad.
4 November, 2022	Prof. Peter Doerner, Chair of Applied Biology, School of Biological Sciences, University of Edinburgh and Academic Director to Gujarat Biotechnology University (GBU), Amrita Sadarangani, Executive Director, GBU and Dr. Lilani, Registrar, GBU visited NIAB
14 November, 2022	A virtual demo of 3D Bioprinter (RegenHu) by Dr Janani Radhakrishnan, Scientist B.
18 November, 2022	Green Secure Energy have started 900 kWp Solar Power Plant Installation work at NIAB

DATE	LECTURE/MEETING DETAILS
25 November, 2022	Constitution day was celebrated at NIAB by reading the preamble to commemorate the adoption of the Constitution of India.
1 December, 2022	Annual General Meeting (AGM) of the Society of NIAB was held at NGH Conference Hall, National Institute of Immunology, New Delhi
2 December, 2022	Students and faculty from Late Ambadasrao Warpudkar College of Agriculture, Warpud, Maharashtra visited NIAB on December 2, 2022.
8 – 9 December, 2022	Second NIAB Ph.D Mini-symposium was conducted on December 8 & 9, 2022
14 December, 2022	Dr. Rajeev K. Tyagi, Ramalingaswami Fellow and Faculty, Division of Cell Biology and Immunology, CSIR-Institute of Microbial Technology (IMTECH), Chandigarh delivered a talk on “Humanized mouse model(s): more than a tour de force in translational biomedical research” on December 14, 2022 at NIAB, Hyderabad.
19-21 December, 2022	NIAB arranged an “International Workshop on NanoBioinformatics - 2022” from December 19 – 21, 2022 at NIAB, Hyderabad. The highlights of the workshop are: To sensitize Master’s, Ph.D. and Postdoc candidates about the interface of Nanobiotechnology and Bioinformatics, to provide hands-on training to use Bioinformatics tools and apply them to design nanomaterials suitable for various applications, and Expert talks on Nanobiotechnology, and Bioinformatics and their applications in Livestock.
20 December, 2022	BCIL, New Delhi visited NIAB for licensing of NIAB technology “ Detection of Toxoplasma gondii Infection”, and also Dr. Purnima Sharma, MD, BCIL, New Delhi, delivered a talk on "Essentials of Technology Licensing" on December 20 at 3 PM at NIAB, Hyderabad.
7 January, 2023	Project wide One-Health meeting was held on January 7, 2023
Jan 9-13, 2023	Dr. Shailesh Sharma and Dr. Himanshu R. Patil attended 5 days DST sponsored workshop on “Enhancing Accountability & Responsiveness in Scientific Organisations” held at IPE, Osmania University Campus, Hyderabad.
19 January, 2023	Faculty and students of NIAB attended the distinguished lecture delivered by Prof. Cornelis Murre from the University of California, San Diego on “Molecular mechanisms that instruct nuclear shape” held on January 19, 2023 at School of Life Sciences, University of Hyderabad.
21-24 January, 2023	Dr. G. Taru Sharma, Director, NIAB along with the scientists from NIAB Dr. Sandeep Goel, Dr Vinod Kumar, Mr. Harjit Singh, Sr. Manager(A&F) & Mr. Shashikanth, Technical Officer attended the 8th Edition of India International Science Festival (IISF) 2022 at MANIT, Bhopal, organized by the Ministry of Science and Technology and the Ministry of Earth Science of Government of India in association with Vijnana Bharati from January 21-24, 2023.
23-25 January, 2023	Dr. Nagendra Hegde (Scientist-H), Dr. Sandeep Kushwaha (Scientist-E) and Mr. Sarwar Azam (Scientist-D) attended Workshop on "Genomics Application in Animal Breeding and Animal Health" organized by the Department of Animal Husbandry, Dairying & Fisheries (DADF), Government of India from January 23-25, 2023 in Pune.

DATE	LECTURE/MEETING DETAILS
23 January, 2023	30 Students and 3 faculties from PV Narasimha Rao Telangana Veterinary University, Ragendranar, Hyderabad, visited NIAB, under an educational tour program.
26 January, 2023	NIAB celebrated Republic Day on January 26, 2023 by hoisting the National Flag at NIAB, Hyderabad.
3 February, 2023	A group of twenty two students and three faculty members from the Tamil Nadu Dr. Jayalalithaa Fisheries University (TNJFU), Chennai visited NIAB as part of an education tour on February 3, 2023.
9 February, 2023	Dr. Sandeep Goel along with Dr. Bappaditya Dey coordinated NIAB visit and interaction with newly recruited faculties of OUAT, Bhubaneswar & PVNR Telangana Veterinary University undergoing foundation course at ICAR-NAARM, February 9, 2023.
10 February, 2023	Dr. Sanjay Mishra, Scientist H, DBT and Dr. Deo Prakash, Scientist C, DBT visited NIAB
15 February, 2023	As a part of National Science Day 2023 celebrations, Dr. Nagendra Hegde, Dr. Syed M Faisal, Dr. Abhijit S Deshmukh, Dr. Pankaj Suman, Dr. Vinod Kumar along with students and fellows of NIAB participated in a science outreach program for high school students, Adarsha Vidyalaya, Shahapur, Yadgir district, Karnataka (aspirational district) on February 15, 2023
22 February, 2023	A group of twenty one students and two faculty members from P.C. Jabin Science College, Hubli, Karnataka visited NIAB on February 22, 2023.
24 February, 2023	Dr HBD Prasada Rao, Scientist E discussed a research article on the topic "Can mammalian cells photosynthesise?" on 24-02-2023 with all the students at NIAB, Hyderabad in MK Bhan Auditorium, NIAB.
21-24 February, 2023	HPLC training was conducted for the students at NIAB from 21-02-2023 to 24-02-2023 at NIAB, Hyderabad.
28 February, 2023	<p>National Science Day 2023 is celebrated at NIAB, Hyderabad on February 28, 2023 by conducting various competitions like painting, quiz, etc for the students who were invited from the nearby schools. As a part of NSD, Prof. D. Balasubramanian, Distinguished Scientist & Director of Research Emeritus, L V Prasad Eye Institute, Hyderabad delivered National Science Day Lecture on "The Birth and Growth of Biotechnology in India".</p> <p>Student Orientation Program was conducted on February 28, 2023 in the MK Bhan Auditorium to facilitate newly joined PhD students and Master Trainees to understand NIAB's work culture, rules & regulations, and code of conduct, followed by the farewell for the PhD students at NIAB (who have completed and are about to complete their degree)</p>
1 March, 2023	Dr. Siddharth Shanker Layek, Manager from NDDDB visited NIAB on March 1, 2023
1 March, 2023	Dr. Madhavi Gorla joined NIAB as DST Inspire Faculty on March 1, 2023
6 March, 2023	A group of 40 students (B.Tech) and 4 faculty members from Chaitanya Bharathi Institute of Technology, Hyderabad visited the NIAB as part of an education tour on March 6, 2023.

DATE	LECTURE/MEETING DETAILS
8 March, 2023	International Women's Day 2023 was celebrated at NIAB, Hyderabad on March 8, 2023 by planting trees inside the campus by the Women employees at NIAB.
16 March, 2023	Sub award agreement signed with THSTI for project titled, 'Development of high-throughput screening assays to identify antivirals targeting multiple stages of Henipavirus life-cycle' granted by the Good Ventures Foundation, a 501(c)(3) private foundation (Grantor) in association with Open Philanthropy.
17 March, 2023	Hyderabad's Student Centric Conference (HySci) was organized on March 17, 2023 by students of NIAB, Hyderabad. Researchers from all Hyderabad-area institutions took an active part in the conference. Various events, including flash talks, oral and poster presentations were delivered by students. Panel discussion were led by renowned experts in innovative research concepts and career options on novel and cutting-edge topics like Journey of research from work table to the destination, Ph.D. without a publication: Red or Green signal, Career paths diverging in research and Animal health for human welfare.
17 March, 2023	Ms. Kiranmai Joshi, Research Fellow from Dr Girish Radhakrishnan's Lab won the first prize for a poster presentation during the NIAB-hosted HySci conference on March 17, 2023.
21 March, 2023	Prof. William Bishai, Professor of Medicine, Johns Hopkins University, USA visited NIAB on March 21, 2023 and delivered a distinguished lecture on "Understanding the divergent sex differences in TB and NTM disease" at NIAB.
25 March, 2023	Annual review meeting of DBT-One Health Consortium for nationwide surveillance of zoonotic and transboundary diseases was held at NIAB, Hyderabad on March 25, 2023.
29-30 March, 2023	Meeting with UK delegates (Prof. Anthony Fooks from Animal and Plant Health Agency, Ms. Michelle Beer from DEFRA and Dr. Himangi Bhardwaj from British High Commission) was held on March 29-30, 2023 at NIAB on potential future research collaborations in the field of brucellosis and JEV.
31 March, 2023	A group of 120 students along with their faculty from St. Mary's College, Hyderabad visited NIAB on March 31, 2023 as a part of their educational tour.



Photo Courtesy: Yathirajarao Tammineni

Swachhta Pakhwada

Institute actively participated in Swachhta Pakhwada from 1-15 May 2022

Director, NIAB inaugurated Swachhata Pakhwada 2022 on 2 May 2022 and the programme was started by taking "Swachhata Pledge" by all the employees at NIAB. Various activities like swachhata daud, plantation drive, cleaning of Offices /laboratories, cleaning of surroundings etc were organised during the Pakhwada.

The Institute is proud receipt of Swachhta Pakhwada award from DBT for the consecutive second year.



Distinguished Lectures



Foundation Day Lecture by Prof. SC Lakhota, Distinguished Professor, BHU on 25 May 2022



Dr Lalji Memorial Lecture was given by Dr Shekhar Mande, Former Secretary, DSIR on 2 June 2022

Distinguished Lectures



Dr Lalji Memorial Lecture for 2021 was given by Prof. Partha P. Majumdar, Distinguished Profesoor, NIBMKG, Kalyani on 5 July 2022



Distingued lecture by Dr SK Gupta on 04 October 2022 on the eve of World Animal Day

Distinguished Lectures



Dr. Rajesh Gokhale, Secretary, DBT delivered lecture on 2 November 2022



World One Health Day Lecture was delivered by Prof. K. Vijay Raghavan, Former Principal Scientific Advisor to GoI on 3 November 2022

IMPLEMENTATION OF THE RIGHT TO INFORMATION (RTI) ACT, 2005

Appellate Authority : Dr Syed Faisal
 Central Public Information Officer : Shri P.S.G.S Pavan Kumar
 Details about the RTI applications and appeals received in NIAB

As received under RTI Act 2005	Opening Balance as on 01.04.2022	Received during the year 2022-23			Disposed of during the year 2022-23				
		Received directly	Received as transfer from other Public Authorities [u/s 6(3) of Act]	Total	Decisions where applications accepted/ appeals upheld	Decisions where applications/ appeals rejected	Transferred to other Public Authorities [u/s 6(3) of Act]	Total	Closing Balance as on 31.03.2023
Applications	0	03	10	13	13	0	0	13	0
Appeals	0	02	Not applicable	02	02	0	Not applicable	02	0

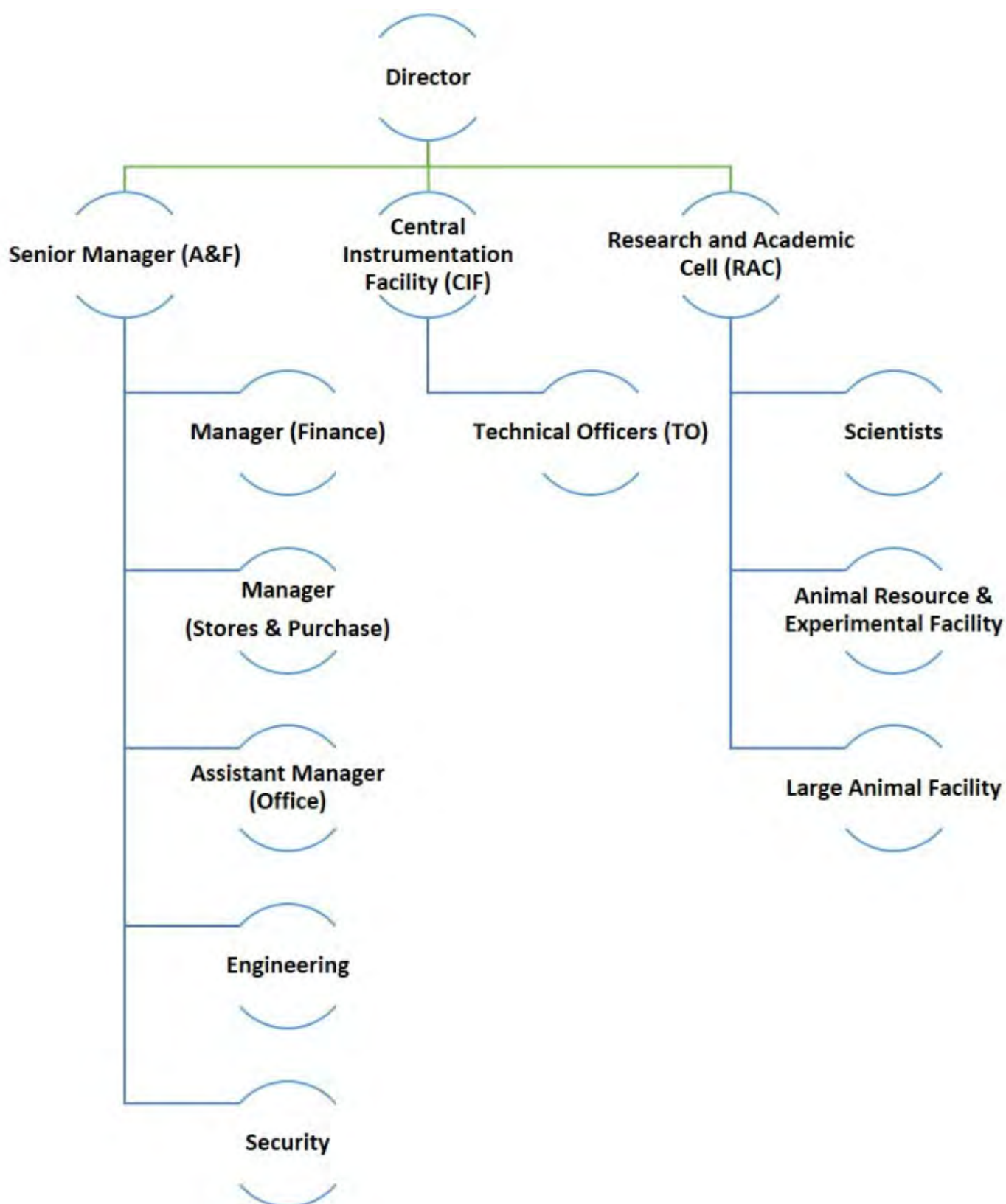


Organizational Structure of NIAB



Photo Courtesy: Himanshu R. Patil

ORGANISATIONAL STRUCTURE OF NIAB



NIAB SOCIETY

1	Dr Jitendra Singh Hon'ble Minister of S&T (IC), GoI	President
2	Sh A. Indrakaran Reddy Hon'ble Minister for Forest, Environment and S&T, Govt of Telangana	Member
3	Dr Rajesh Gokhale Secretary, DBT, GoI	Member
4	Secretary Animal Husbandry, Govt. of India	Member
5	Secretary, DARE & DG, ICAR Govt. of India	Member
6	Dr Rajat Kumar Spl Chief Secretary, Govt of Telangana	Member
7	Shri Visvajit Sahay, AS&FA, DBT	Member
8	Shri Chaitanya Murti Joint Secretary (Admn), DBT, New Delhi	Member
9	Dr. G. Taru Sharma Director, NIAB, Hyderabad	Member
10	Prof. S. Ayyappan Vice Chancellor, CAU	Member
11	Dr. Raj Kumar Singh Former Director, ICAR-IVRI	Member
12	Dr. Inderjeet Singh Vice-chancellor, GADVASU	Member
13	Dr. Saumitra Das Director, NIBMG	Member
14	Dr. Ashish Motiram Paturkar Vice-chancellor, MAFSU	Member
15	Dr. K. Anand Kumar Managing Director, IIL	Member

NIAB GOVERNING BODY

1	Dr Rajesh Gokhale Secretary, DBT, GoI	Chairperson	
2	Shri Chaitanya Murti Joint Secretary(Admn), DBT, New Delhi	Member	
3	Shri Vishvajit Sahay Additional Secretary & Financial Advisor, DBT, New Delhi	Member	
4	Dr. Nitin Kumar Jain Scientist F/Coordinator, DBT, New Delhi	Member	
5	Dr. Rajneesh Kumar Gaur Scientist E/Nodal Officer, DBT, New Delhi	Member	
6	Dr. A. Gopalakrishnan Director, ICAR-Central Marine Fisheries Research Institute, Kochi	Member	
7	Dr. Sharmistha Banerjee Professor, School of Life Sciences, University of Hyderabad, Hyderabad	Member	
8	Dr. Rajendera Singh Sangwan Director, Academy of Scientific and Innovative Research (AcSIR), Ghaziabad	Member	
9	Dr. Kalpana Luthra Professor, Department of Biochemistry AIIMS, New Delhi	Member	
10	Dr. G. Taru Sharma Director, NIAB, Hyderabad	Member	
11	Mr. I Jagadeesh, i/c Sr. Manager (A&F) , NIAB, Hyderabad	Member Secretary	Till 12 May 2022
	Mr Harjit Singh Sr. Manager (A&F), NIAB, Hyderabad		From 13 May 2022

NIAB FINANCE COMMITTEE

1	Shri Vishvajit Sahay Additional Secretary & Financial Advisor, DBT, New Delhi	Chairperson	
2	Dr. Nitin Kumar Jain Scientist F/Coordinator, DBT, New Delhi	Member	
3	Dr. Monica Singhania, Professor, Faculty of Management Studies, University of Delhi.	Member	
4	Shri Parveen Kumar Bansal, Former Vice President, Income Tax Appellate Tribunal, Government of India.	Member	
5	Dr. G. Taru Sharma Director, NIAB, Hyderabad	Member	
6	Mr. I Jagadeesh, i/c Sr. Manager (A&F) , NIAB, Hyderabad	Member Secretary	Till 12 May 2022
	Mr Harjit Singh Sr. Manager (A&F), NIAB, Hyderabad		From 13 May 2022

NIAB SCIENTIFIC ADVISORY COMMITTEE

1	Dr. Raj Kumar Singh Former Director Indian Veterinary Research Institute (IVRI), Uttar Pradesh	Chairman
2	Dr. Nitin Kumar Jain Scientist F/Coordinator, DBT, New Delhi	Member
3	Dr. G. Dhinakar Raj Director Centre for Animal Health Studies TANUVAS, Chennai	Member
4	Dr. S. Ramakrishna Senior Principal Scientist Department of Applied Biology CSIR-Indian Institute of Chemical Technology (IICT), Hyderabad	Member
5	Dr. Chaitanya Joshi Director Gujarat Biotechnology Research Centre Gandhinagar, Gujarat	Member
6	Dr. A. Gopalakrishnan Director ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi	Member
7	Dr. Sharmistha Banerjee Professor School of Life Sciences University of Hyderabad, Telangana	Member
8	Dr. Rajendera Singh Sangwan Director Academy of Scientific and Innovative Research (AcSIR), Ghaziabad	Member
9	Dr. Kalpana Luthra Professor Department of Biochemistry AIIMS, New Delhi	Member
10	Dr. G. Taru Sharma Director, NIAB, Hyderabad	Member

COMPLAINT COMMITTEE FOR THE PREVENTION AND PROHIBITION OF SEXUAL HARASSMENT

The following internal complaint committee has been constituted for the prevention and prohibition of sexual harassment in accordance with Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013:

Dr. Madhuri Subbiah, Scientist-E	-	Chairperson
Smt. M. Sreelekha, Legal Expert	-	Member (till 2 August 2022)
Shri. Harjit Singh, Senior Manager	-	Member (from 13 May 2022)
Shri. I. Jagadeesh, I/c. Senior Manager	-	Member (from 4 Nov 2021)
Shri. Santosh Mhadeshwar, Manager S&P	-	Member
Ms S.V Dilna, Technical Officer	-	Member
Ms. Krishna Priya, PA to Director	-	Member Secretary

The following committee has been reconstituted w.e.f 16-2-2023:

Prof. Krishnaveni Mishra, UoH	-	Chairperson
Dr. Sanjay Singh, Scientist-F, NIAB	-	Member
Dr. Madhuri Subbiah, Scientist-E, NIAB	-	Member
Mr. Santosh N Mhadeshwar, Manager (S&P), NIAB	-	Member
Smt. V. Padmavathi I/C KGNMT-NGO	-	External Member
Ms. S V Dilna, Technical Officer, NIAB	-	Member Convener



NIAB Staff



Photo Courtesy: Amit Pal

NIAB

Scientific

S.No	NAME	DESIGNATION
1	Dr. (Mrs.) G. Taru Sharma	Director
2	Dr Subeer S Majumdar	Distinguished Professor (Till 13 November 2022)
3	Dr. Nagendra R. Hegde	Scientist-H
4	Dr Sandeep Goel	Scientist-F
5	Dr Sanjay Singh	Scientist-F
6	Dr. Girish K Radhakrishnan	Scientist-F
7	Dr. Bappaditya Dey	Scientist-E
8	Dr. H.B.D Prasada Rao	Scientist-E
9	Dr. Syed Mohd Faisal	Scientist-E
10	Dr Sandeep Kushwaha	Scientist-E
11	Dr Madhuri Subbiah	Scientist-E
12	Dr. Anand Srivastava	Scientist-E
13	Dr. Paresh Sharma	Scientist-E
14	Dr. Shailesh Sharma	Scientist-E
15	Dr. Sonu Gandhi	Scientist-E
16	Dr. Abhijit S Deshmukh	Scientist-D
17	Dr. Nirmalya Ganguli	Scientist-D
18	Dr. Pankaj Suman	Scientist-D
19	Dr. Vinod kumar	Scientist-D (w.e.f. 21.07.2022)
20	Dr. Santosh Dasari	Scientist-D (w.e.f. 11.10.2022)
21	Mr. Sarwar Azam	Scientist-D
22	Dr. Yash Pal	Scientist-C
23	Dr. Souvik Sen Sharma	Scientist-B
24	Dr. Janani Radhakrishnan	Scientist-B (w.e.f. 29.08.2022)
25	Dr. Bhaswati Chatterjee	DST-Women Scientist (w.e.f. 04.04.2022)
26	Dr. Madhavi Gorla	DST-Inspire Follow (w.e.f. 01.03.2023)

Administrative, Technical and Support Wing

S.No.	NAME	DESIGNATION
1	Harjit Singh	Senior Manager (Admin & Finance) (w.e.f 13 May 2022)
2	I. Jagadeesh	Manager (Office & Finance)
3	Santosh Namdeo Mhadeshwar	Manager (Stores & Purchase)
4	Ravindra Nath	Sup Engineer
5	V. Ramesh Babu	Exe. Engineer
6	PSGS Pavan Kumar	Asst Manager (Office & Estate)
7	Prem Kumar Kukumalla	Security Officer
8	K. Krishna Priya	PA to Director
9	Bookya Rajendra Prasad	Librarian
10	Dr. Jayant Pundalik Rao Hole	I/c Small Animal House
11	Dr. Himanshu Ramdas Patil	I/c Large Animal Farms
12	Dr. Kalpendra Kohli	Farm Manager (w.e.f. 19.01.2023)
13	G. Rama Devi	Technical Officer
14	Shashikant Dasharath Gawai	Technical Officer
15	A.Hari Krishna	Technical Officer
16	P.Praveen Kumar	Technical Officer
17	Dilna S V	Technical Officer
18	K Preeti Prasanna	Technical Officer
19	Nilanjana Ganguli	Technical Officer
20	Dr. Vinita	Technical Officer (w.e.f. 11.01.2023)



Picture Gallery



Photo Courtesy: Meenakshi Mansukhani



Celebration of Independence Day 2022 at the Institute



Celebration of Republic Day 2023 at the Institute



Inauguration of Incubation centre by Dr G. Taru Sharma, Director NIAB on 10 May 2022



Signing of MoU with Incubatee



International Yoga Day on 21 June 2022



Tiranga Rally



NIAB's Institute Day lecture was delivered by Prof Priya Abraham, Director, National Institute of Virology, Pune, and Prof. Sharmila Bapat, Scientist-G, National Centre for Cell Science, Pune on 11 Aug. 2022



Hindi Pakhwada



Audit team of CAG at Institute



Scientific Advisory Committee meeting on 21-22 Sep 2022



Fit India Freedom Run



Vigilance Pledge



Constitution Day on 25 Nov. 2022



**Inauguration of High Content Screening Facility by Prof. K. VijayRaghavan,
Former Principal Secretary to GoI on 3 Nov. 2022**





Governing Body meeting on 2 Nov. 2022



Inauguration of MK Bhan Auditorium on 2 Nov 2022



Inauguration of Small Animal Facility by Dr Rajesh Gokhale, Secretary DBT on 2 Nov. 2022



Visit to Small Animal Facility



Meeting of "One Health Consortium" on 25 March 2023



Lecture by Prof. William Bishai, John Hopkin University, USA on 21 March 2023



NIAB-APHA (U.K) collaborative meeting on 28 March 2023



Administration Unit of NIAB



Central Instrumentation Facility (CIF) Team



NIAB Family



Audit Statement of Accounts 2022-23



Photo Courtesy: Himanshu R. Patil

**CHARY AND CO.**
CHARTERED ACCOUNTANTS**M.S. Appala Chary** FCA

9441490545

ca.msachary@gmail.com

AUDITOR'S REPORT01st May 2023

The Director
National Institute of Animal Biotechnology (NIAB),
Opp. Journalist Colony, Near Gowlidoddy,
Extended Q City Road, Gachibowli,
Hyderabad - 500 032

We have audited the attached Balance Sheet of **NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY**, Hyderabad, as at 31st March 2023 and also the Income & Expenditure Account for the year ended on that date annexed there to. These financial statements are the responsibility of the organization management. Our responsibility is to express an opinion on these financial statements based on our audit.

We report that:

1. We have obtained all the information and explanations, which are to the best of our knowledge and belief, were necessary for the purpose of our audit.
2. In our opinion, the organization has kept proper books of account as required by law so far, as appears from our examination of those books.
3. The Balance sheet and Income & Expenditure account dealt with by this report is in agreement with the books of accounts.
4. The Institute has maintained accounts on Accrual basis.
5. In our opinion and to the best of our information and according to the explanations given to us, the said Balance sheet and the Income & Expenditure account read together with the notes thereon gives the required information in the manner so required and give a true and fair view.
 - a) In so far as it relates to the Balance sheet as at 31st March 2023 and
 - b) In so far as it relates to the Income & Expenditure account excess of expenditure over income for the year ended on 31st March 2023.

Place: Hyderabad
Date: 01/05/2023

For CHARY AND CO
Chartered Accountants
F R No. 014102S




M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31st MARCH 2023

		Amount - Rs.	
RECEIPTS	PAYMENTS	Current Year	Previous Year
1. Opening Balances	1. Expenses		
a) Cash in hand	a) Establishment Expenses (corresponding to Schedule 20)	10,48,05,543.40	8,09,06,211.00
b) Bank Balances	b) Administrative Expenses (corresponding to Schedule 21)	18,09,68,858.62	13,54,80,869.07
i) In current accounts			
ii) In deposit accounts	2. Payments made against funds for various projects		
iii) Savings accounts	(Name of the fund or project should be shown along with the particulars of payments made for each project)		
	Projects (Annexure F)		
2. Grants Received		12,46,50,006.48	35,37,87,199.00
a) From Government of India	3. Investments and deposits made		
b) From State Government	a) Out of Earmarked/Endowment funds	-	-
c) From other sources (details)	b) Out of Own Funds (Investments-Others)	-	-
(Grants for capital & revenue exp. To be shown separately)	c) Investments	16,33,66,224.00	20,49,00,000.00
d) Projects (Annexure - C)			
	4. Expenditure on Fixed Assets & Capital Work-in-Progress		
3. Income on Investments from	a) Purchases of Fixed Assets:		
a) Earmarked/Endow. Funds	Books & Journals	-	10,013.00
b) Own Funds (Oth. Investment)	Equipment - Lab/Office/Furniture	13,00,42,782.76	2,87,46,978.70
c) Investments Encashed	b) Expenditure on Capital Work-in-Progress:	-	-
4. Interest Received	5. Refund of surplus money/Loans		
a) On Bank deposits (Please Refer Schedule -17)	a) To the Government of India	-	-
b) Loans, Advances etc.	b) To the State Government	-	-
c) on savings accounts	c) To other providers of funds	-	-
d) Interest on LC			
	6. Finance Charges (Interest)		
5. Other Income(Specify)			
a) Analysis Charges	7. Other Payments (Specify)		
	Advances (Annexure-D)	21,94,59,395.74	39,09,32,615.00
6. Amount Borrowed	I-Remittances (Annexure-E)	2,02,47,583.00	2,29,08,509.00
	CPF A/c / GPF A/c	-	2,10,000.00
7. Any Other Receipts(Give Details)	New Pension Scheme	55,27,516.00	44,52,805.00
I-Remittances (Annexure-A)			
CPF-SUB, Arrears and adv. Refund/GPF	8. Closing Balances		
Sundry Receipts	a) Cash in hand	-	-
Application Fee	b) Bank Balances	-	-
Income from Royalty, Publications etc.			
Sale OF Tender Forms	i) In current accounts	-	-
License Fee	ii) In deposit accounts	-	-
New Pension Scheme	iii) Savings accounts	3,51,33,368.18	10,72,766.44
Advance/Refunds/Recovery/Ad(Annexure-B)			
TOTAL	TOTAL	98,42,01,278.18	1,22,34,07,966.21

For CHARY AND CO
 Chartered Accountants
 F R No. 014/1025

M S Asmita Chary
 Chartered Accountant
 M. No. 221442
 UDIN : 23221442BGVWQ9638
 Date : 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

डॉ। जी। तरु शर्मा/Dr. G. Taru Sharma

निदेशक/Director
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 वरिष्ठ प्रबंधक (प्रशासन और वित्त)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 ए जगदीश/ I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY, HYDERABAD
BALANCE SHEET AS ON 31st MARCH 2023

(Amount - Rs.)					
Particulars	Schedule	Current Year	Previous Year		
CORPUS/CAPITAL FUND AND LIABILITIES					
Corpus / Capital Fund	1	1,62,31,08,769.47	1,71,82,19,420.49		
Reserves and Surplus	2	-	-		
Earmarked / Endowment funds	3	4,13,50,950.17	10,87,08,575.65		
Secured Loans & Borrowings	4	-	-		
Unsecured Loans & Borrowings	5	-	-		
Differed Credit Liabilities	6	-	-		
Current Liabilities and Provisions	7	2,83,89,553.45	2,82,36,005.45		
TOTAL		1,69,28,49,273.09	1,85,51,64,001.59		
ASSETS					
Fixed Assets	8	1,64,73,84,169.91	1,67,81,53,482.15		
Investments- From Earmarked / Endowment Funds	9	96,00,000.00	10,79,19,966.65		
Investments - Others	10	6,25,000.00	65,80,033.35		
Current Assets, Loans, Advances etc.	11	3,52,40,103.18	6,25,10,519.44		
Miscellaneous Expenditure		-	-		
TOTAL		1,69,28,49,273.09	1,85,51,64,001.59		
Significant Accounting Policies	24				
Contingent Liabilities and Notes on Accounts	25				

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ। जी। तरु शर्मा/Director
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
ज्येष्ठ प्रबंधक (प्रशासन और वित्त)
Senior Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ए जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY, HYDERABAD
 Income And Expenditure Statement for the year ended on 31st MARCH 2023

Particulars		Schedule		Current Year		Previous Year	
INCOME							
Income from Sales/Services		12		28,27,002.00			4,43,839.00
Grants/Subsidies		13		27,32,63,445.00			19,80,00,000.00
Fees/Subscriptions		14		-			-
Income from Investments		15		-			-
Income from Royalty, Publications etc.		16		5,57,500.00			-
Interest Earned		17		-			-
Other Income		18		20,44,353.00			22,31,440.00
Increase/(decrease) in stock of Finished goods and works-in-progress		19		-			-
TOTAL (A)				27,86,92,300.00			20,06,75,279.00
EXPENDITURE							
Establishment Expenses		20		10,48,05,543.40			8,09,06,211.00
Administrative Expenses etc.		21		18,09,68,858.62			13,54,80,869.07
Expenditure on Grants, Subsidies etc.		22		-			-
Interest		23		-			-
Depreciation (Net Total at the year-end -corresponding to Schedule 8)				18,74,52,196.00		18,49,10,802.00	
Less: Transferred to Grants-in-Aid				18,74,52,196.00		18,49,10,802.00	
Provision For Salaries and other Expenses (Annexure-I)				-		-	
TOTAL (B)				-42,93,940.00			58,13,526.00
Balance being excess of Expenditure over Income (A-B)				28,14,80,462.02			22,22,00,606.07
Transfer to Special Reserve (Specify each)				-27,88,162.02			-2,15,25,327.07
Transfer to/from General Reserve							
Balance being SURPLUS/(DEFICIT) carried to CORPUS/CAPITAL FUND							
Significant Accounting Policies		24					
Contingent Liabilities and Notes on Accounts		25					

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
Mr. No. 221442
UDIN23214428GVWQ9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ। जी। तारु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
हार्जित सिंह/Harjit Singh
Senior Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
ऐ. जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars	Current Year		Previous Year	
SCHEDULE 1 - CORPUS/CAPITAL FUND :				
Balance as at the beginning of the year		1,71,82,19,420.49		1,75,98,70,216.56
Add : Contribution towards Corpus/Capital Fund				
NIAB Core - Plan (Non-Recurring)	6,84,89,606.00		9,00,00,000.00	
Capitalised portion of Capital Expenditure of projects (Annexure -II)	2,66,40,101.00		7,47,85,333.00	
Others	-	9,51,29,707.00	-	16,47,85,333.00
Less : Lump Sum Depreciation				
Less : Depreciation For the Year 2022-2023 (Schedule -8)	18,74,52,196.00	18,74,52,196.00	18,49,10,802.00	18,49,10,802.00
Add : Balance of net income/(Expenditure) transferred		-27,88,162.02		-2,15,25,327.07
Add : transferred from General Reserve Account (Schedule2)				
BALANCE AS AT THE YEAR - END		1,62,31,08,769.47		1,71,82,19,420.49

(Amount - Rs.)

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala-Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


NIAB
National Institute of Animal Biotechnology
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB
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National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars	Current Year		Previous Year	
SCHEDULE 2 - RESERVES AND SURPLUS :				
<u>1. Capital Reserve :</u>				
Opening Balance	-	-	-	-
Addition during the year	-	-	-	-
Less : Deductions during the year	-	-	-	-
<u>2. Revaluation Reserve :</u>				
Opening Balance	-	-	-	-
Addition during the year	-	-	-	-
Less : Deductions during the year	-	-	-	-
<u>3. Special Reserves :</u>				
Opening Balance	-	-	-	-
Addition during the year	-	-	-	-
Less : Deductions during the year	-	-	-	-
<u>4. General Reserve :</u>				
Opening Balance	-	-	-	-
Addition during the year	-	-	-	-
Less : Deductions during the year	-	-	-	-
Less: Transfer to Corpus Fund				
Total				

(Amount - Rs.)

For CHARY AND CO
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars	(Amount - Rs.)	
	Current Year	Previous Year
SCHEDULE 3 - EARMARKED/ENDOWMENT FUNDS :		
(Refer Annexures)		
(a) Opening balance of the Funds		20,18,02,455.65
(b) Additions to the Funds :		
i. Donations /grants	5,54,89,165.00	25,70,13,088.00
ii. Income from investments made on account of funds	-	-
iii. Other additions (Interest earned)	18,03,216.00	36,80,231.00
TOTAL (a+b)	16,60,00,956.65	46,24,95,774.65
(c) Utilisation/Expenditure towards objective of funds		
(i) Capital Expenditure (Refer Annexures I & II)		
- Fixed Assets	2,66,40,101.00	7,47,85,333.00
- Others	-	-
Total		7,47,85,333.00
(ii) Revenue Expenditure (Refer Annexures I & II)		
- Salaries, Wages and allowances etc.	-	-
- Rent	-	-
- Other Expenses	9,80,09,905.48	27,90,01,866.00
Total	9,80,09,905.48	27,90,01,866.00
TOTAL (c)	12,46,50,006.48	35,37,87,199.00
NET BALANCE AS AT THE YEAR-END [(a + b)-c]	4,13,50,950.17	10,87,08,575.65

For CHARY AND CO
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

		(Amount - Rs.)	
Particulars	Current Year	Previous Year	
SCHEDULE 4 - SECURED LOANS AND BORROWINGS :			
1. Central Government			
2. State Government (Specify)			
3. Financial Institutions			
a) Term Loans			
b) Interest accrued and due			
4. Banks :			
a) Terms Loans			
- Interest accrued and due			
b) Other Loans			
- Interest accrued and due			
5. Other Institutions and Agencies			
6. Debentures and Bonds			
7. Others (Specify)			
TOTAL			
Note: Amount due within one year			

For CHARY AND CO
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars	(Amount - Rs.)	
	Current Year	Previous Year
SCHEDULE 5 - UNSECURED LOANS AND BORROWINGS :		
1. Central Government		
2. State Government (Specify)		
3. Financial Institutions		
4. Banks :		
a) Terms Loans		
b) Other Loans		
5. Other Institutions and Agencies		
6. Debentures and Bonds		
7. Fixed Deposits		
8. Others (Specify)		
TOTAL		
Note: Amount due within one year		

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025


M S Appala-Chary,
 Chartered Accountant
 M. No. 221442


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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars		(Amount - Rs.)	
		Current Year	Previous Year
SCHEDULE 6 - DEFERRED CREDIT LIABILITIES :			
a) Acceptances secured by hypothecation of capital equipment and other assets		-	-
b) Others		-	-
TOTAL		-	-
Note: Amount due within one year			

For CHARY AND CO
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars		(Amount - Rs.)	
		Current Year	Previous Year
SCHEDULE 7 - CURRENT LIABILITIES AND PROVISIONS :			
A. CURRENT LIABILITIES			
1. Acceptances	-	-	-
2. Sundry Creditors	-	-	-
3. Advances Received <i>(including interest to be returned. Ref Sch-17)</i>	13,23,652.45	13,23,652.45	25,52,391.45
4. Interest accrued but not due	-	-	-
5. Statutory Liabilities	-	-	-
6. Other current Liabilities	-	-	-
NIAB.CP Fund A/C	-	-	-
EMD	-	-	-
Security Deposit	20,54,205.00	20,54,205.00	18,03,499.00
TOTAL (A)		33,77,857.45	43,55,890.45
B. PROVISIONS			
1. For Taxation	-	-	-
2. Gratuity	-	-	-
3. Superannuation/Pension	-	-	-
4. Accumulated Leave Encashment & Gratuity	1,59,56,571.00	1,05,31,050.00	1,05,31,050.00
5. Trade Warranties/Claims	-	-	-
6. Others (Specify) (Annexure-G)	90,55,125.00	2,50,11,696.00	1,33,49,065.00
TOTAL (B)		2,50,11,696.00	2,38,80,115.00
TOTAL (A+B)		2,83,89,553.45	2,82,36,005.45

For CHARY AND CO
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M. No. 221442


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NIAB


Jagadeesh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

(Amount - Rs.)

Particulars	GROSS BLOCK		DEPRECIATION		NET BLOCK	
	Cost/valuation As at beginning of the year	Addition during the year	Deductions during the year	As at the beginning of the year	On additions during the year	On Deductions during the year
A. FIXED ASSETS:						
1. LAND:						
a) Freehold **	1.00					1.00
b) Leasehold						
2. BUILDINGS						
a) On Freehold Land	1,30,88,45,605.00	7,00,00,000.00		32,45,15,659.00	10,54,32,995.00	94,89,96,951.00
b) On Leasehold Land						
c) Ownership Flats/Premises						
d) Superstructures on Land not belongs to the entity						
3. PLANT MACHINERY & EQUIPMENT						
a) On Freehold Land	72,21,09,563.86	9,36,18,086.80		29,91,25,157.00	7,38,59,005.00	44,27,44,488.66
b) On Leasehold Land	77,28,885.29			44,85,926.00	4,86,444.00	27,56,515.29
4. VEHICLES	3,48,34,773.00	32,09,404.96		1,10,12,963.00	26,32,717.00	2,43,98,497.96
5. FURNITURE, FIXTURES	2,32,65,944.00	74,34,524.00		1,00,55,282.00	26,69,834.00	1,79,74,852.00
6. OFFICE EQUIPMENT	37,50,313.00	2,39,916.00		32,95,931.00	2,77,719.00	4,16,579.00
7. COMPUTER/PERIPHERALS						
8. ELECTRIC INSTALLATIONS						
9. LIBRARY BOOKS	7,36,373.00			7,21,367.00	5,006.00	5,006.00
10. TUBEWELLS & WATER SUPPLY	1,45,29,404.00	59,68,914.00		56,71,968.00	20,89,476.00	1,27,36,864.00
11. OTHER FIXED ASSETS	2,11,57,90,862.15	18,04,70,835.76		65,88,84,753.00	18,74,52,196.00	1,44,99,24,748.91
TOTAL						
B. CAPITAL WORK-IN-PROGRESS	22,12,47,373.00	4,74,13,674.00	7,12,01,626.00			19,74,59,421.00
TOTAL	2,33,70,38,235.15	22,78,84,509.76	7,12,01,626.00	65,88,84,753.00	18,74,52,196.00	1,64,73,84,169.91
*** LAND OF 100 ACRES ALLOTTED BY GOVT. OF AP. WORTH OF RS. 306.822 CRORES TO NIAB AT FREE OF COST VIDE G.O.MS.NO. 566, DT. 13/09/2012 AT SY NO. 37, GOPANAPALLY VILLAGE, SERILINGAMPALLY VILLAGE, R R DIST. ***						
Assets bifurcation by funding :						
Core grant	2,16,18,26,071.68	20,12,44,408.76	7,12,01,626.00	61,45,70,647.00	16,55,11,355.00	1,51,17,86,852.44
Extra mural projects	17,52,12,163.47	2,66,40,101.00		4,43,14,106.00	2,19,40,841.00	13,55,97,317.47
TOTAL	2,33,70,38,235.15	22,78,84,509.76	7,12,01,626.00	65,88,84,753.00	18,74,52,196.00	1,64,73,84,169.91

For CHARY AND CO
 Chartered Accountants
 FR No. 0141025

 M S Appala Chary
 Chartered Accountant
 No. No. 221442

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 (అవైట్డ్ సిగ్/హర్జిత్ సింగ్)

Jagadeesh
 Manager (Office & Finance)
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 (అవైట్డ్ సిగ్/జగదీష్)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

(Amount - Rs.)

Particulars	Current Year	Previous Year
SCHEDULE 9 - INVESTMENTS FROM EARMARKED/ENDOWMENT FUNDS :		
1. In Government Securities	-	-
2. Other approved securities	-	-
3. Shares	-	-
4. Debentures and Bonds	-	-
5. Subsidiaries and Joint Ventures	-	-
6. Others (to be specified) - STDRs	96,00,000.00	10,79,19,966.65
TOTAL	96,00,000.00	10,79,19,966.65

For CHARY AND CO

Chartered Accountants

F R No. 0141025


M.S. Appala Chary
 Chartered Accountant
 M. No. 221442




Harjit Singh

Sr. Manager (Admin & Finance)

NIAB हरजीत सिंह / Harjit Singh

Senior Manager (Admin & Finance)

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National Institute of Animal Biotechnology

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

(Amount - Rs.)		
Particulars	Current Year	Previous Year
SCHEDULE 10 - INVESTMENTS - OTHERS :		
1. In Government Securities	-	-
2. Other approved securities	-	-
3. Shares	-	-
4. Debentures and Bonds	-	-
5. Subsidiaries and Joint Ventures	-	-
6. Others (to be specified) - STDRs	6,25,000.00	65,80,033.35
TOTAL	6,25,000.00	65,80,033.35

For CHARY AND CO
Chartered Accountants
F R No. 014102S



M S Appala-Chary
Chartered Accountant
M. No. 221442

Harjit Singh
Sr. Manager (Admin & Finance)
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31st MAR 2023

Particulars		(Amount - Rs.)	
		Current Year	Previous Year
SCHEDULE 11 - CURRENT ASSETS, LOANS, ADVANCES ETC.:			
A. CURRENT ASSETS			
1. Inventories			
a) Stores and Spares			
b) Loose Tools			
c) Stock-in-trade			
Finished Goods			
Work-in-progress			
Raw Materials			
2. Sundry Debtors:			
a) Debts Outstanding for a period exceeding six months			
b) Others-Life Membership Fees			
3. Cash balances in hand (including cheques/drafts and imprest)			
4. Bank Balances:			
a) With Scheduled Banks:			
-On Current Accounts			
-On Deposit Accounts (includes margin money)			
-On Savings Accounts			
b) With non-Scheduled Banks:			
-On Current Accounts			
-On Deposit Accounts			
-On Savings Accounts			
5. Post Office-Savings Accounts			
TOTAL (A)		3,51,33,368.18	10,72,766.44
B. LOANS, ADVANCES AND OTHER ASSETS			
1. Loans:			
a) Staff			
b) Other Entities engaged in activities/objectives similar to that of the Entity			
2. Advances and other amounts recoverable in cash or in kind or for value to be received			
a) On Capital Account (Annexure-H)			
b) Prepayments - Deposits (Annexure-I)			
c) Others			
3. Income Accrued:			
a) On Investments from Earmarked/Endowments Funds			
b) On Investments - Others			
c) On Loans and Advances			
d) Others			
4. Claims Receivable			
TOTAL (B)		1,06,735.00	6,14,37,753.00
TOTAL (A+B)		3,52,40,103.18	6,25,10,519.44

For CHARY AND CO
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M. No. 221442


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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

(Amount - Rs.)		
Particulars	Current Year	Previous Year
SCHEDULE 12 - INCOME FROM SALES/SERVICES :		
1) Income from sales		
a) Sale of Finished Goods	-	-
b) Sale of Raw Material	-	-
c) Sale of Scraps	-	-
2) Income from Services		
a) Labour and Processing Charges	-	-
b) Professional/Consultancy Services (Analysis Charges)	28,27,002.00	4,43,839.00
c) Agency Commission and Brokerage	-	-
d) Maintenance Services (Equipment/Property)	-	-
e) Others (Specify)	-	-
TOTAL	28,27,002.00	4,43,839.00

For CHARY AND CO
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

		(Amount - Rs.)	
Particulars	Current Year	Previous Year	
SCHEDULE 13 - GRANTS/SUBSIDIES : (Irrevocable Grants & Subsidies Received)			
1) Central Government (DBT Plan Grant-in-Aid)	27,32,63,445.00	19,80,00,000.00	
2) State Government(s)	-	-	
3) Government Agencies	-	-	
4) Institutions/Welfare Bodies	-	-	
5) International Organisations	-	-	
6) Others (Specify)	-	-	
TOTAL	27,32,63,445.00	19,80,00,000.00	

For CHARY AND CO

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M. No. 221442

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I Jagadeesh

Manager (Office & Finance)

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

(Amount - Rs.)

Particulars	Current Year	Previous Year
SCHEDULE 14 - FEES/SUBSCRIPTIONS :		
1) Entrance Fees	-	-
2) Annual Fees/Subscriptions	-	-
3) Seminar/Program Fees	-	-
4) Consultancy Fees	-	-
5) Others (Specify)	-	-
TOTAL	-	-

For CHARY AND CO

Chartered Accountants

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Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

हर्जित सिंह (प्रशासन और वित्त)
 वरिष्ठ प्रबंधक (प्रशासन और वित्त)
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Jagadeesh

Manager (Office & Finance)

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ऐ जगदीश/! Jagadeesh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

Particulars	Investments from Earmarked Fund		Investments-Others	
	Current Year	Previous Year	Current Year	Previous Year
SCHEDULE 15 - INCOME FROM INVESTMENTS: (Income on Invest. from Earmarked/Endowment Funds transferred to Funds)				
1) Interest:				
a) On Govt. Securities	-	-	-	-
b) Other Bonds/Debentures	-	-	-	-
2) Dividends:				
a) On Shares	-	-	-	-
b) On Mutual Fund Securities	-	-	-	-
3) Rents	-	-	-	-
4) Others (Specify) STDRs	-	-	-	-
TOTAL				
TRANSFERRED TO EARMARKED/ENDOWMENT FUNDS				

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
Senior Manager (Admin & Finance)
Chartered Accountant
National Institute of Animal Biotechnology
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I Jagadeesh
Manager (Office & Finance)
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से जगदीश / I Jagadeesh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

		(Amount - Rs.)	
Particulars	Current Year	Previous Year	
SCHEDULE 16 - INCOME FROM ROYALTY, PUBLICATION ETC. :			
1) Income from Royalty	5,57,500.00	-	-
2) Income from Publications	-	-	-
3) Others (Specify)	-	-	-
TOTAL	5,57,500.00	-	-

For CHARY AND CO

Chartered Accountants

F R No. 014102S


M S Appala Chary
 Chartered Accountant
 M. No. 221442




Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

हरजीत सिंह/Harjit Singh

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I Jagadeesh

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ऐ जगदीश/I Jagadeesh

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

Particulars	Current Year	Previous Year
SCHEDULE 17 - INTEREST EARNED :		
1) On Term Deposits		
a) With Schedule Banks #	10,04,895.00	-
Less : Transferred to Advances Received under		
Current Liabilities under Secedule-7	-10,04,895.00	-
b) With Non-Scheduled Banks	-	-
c) With Institutions	-	-
d) Others	-	-
2) On Saving Accounts		
a) With Scheduled Banks	-	-
b) With Non-Scheduled Banks	-	-
c) Post Office Savings Accounts	-	-
d) Others	-	-
3) On Loans		
a) Employees/Staff	-	-
b) Others	-	-
4) Interest on Debtors and Other Receivables	-	-
TOTAL	-	-
Note :- Tax deducted at source to be indicated		

An amount of Rs.10,04,895/- earned as interest on Core grant during 2022-23 has been shown as Current Liability under Advances Received in Schedule-7 as the interest earned on Grants in aid or advances should be mandatorily remitted to the Consolidated Fund of India immediately after finalisation of the accounts as per the GRF Rule 230 (8).

For CHARY AND CO
Chartered Accountants
FR No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

		(Amount - Rs.)	
Particulars	Current Year	Previous Year	
SCHEDULE 18 - OTHER INCOME :			
1) Profit on Sale/disposal of Assets:			
a) Owned assets	-	-	-
b) Assets acquired out of grants, or received free of cost	-	-	-
2) Export Incentives realized	-	-	-
3) Fees for Miscellaneous Services	-	-	-
4) Miscellaneous Receipts (Overheads from the EMR Projects)	7,55,339.00	10,03,703.00	
5) Other Receipts			
Sundry Receipts (Road Show Charges, Guest house Charges etc.)	3,17,719.00	4,24,758.00	
Application Fee	2,40,403.00	37,100.00	
Sales Of Tender Forms	57,000.00	2,47,500.00	
Licence Fee	6,73,892.00	5,18,379.00	
Interest On Computer Advance, Conveyance Advance And HBA	-	-	-
Leave Salary-Pension Contribution	-	-	-
Provident Fund Salvage	-	-	-
Free. Gifts-Donations	-	-	-
TOTAL	20,44,353.00	22,31,440.00	

For CHARY AND CO

Chartered Accountants

F R No. 0141025


M S Appala-Chary
 Chartered Accountant
 M. No. 221442


Harjit Singh
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Jagadeesh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

(Amount - Rs.)

Particulars	Current Year	Previous Year
SCHEDULE 19 - INCREASE/(DECREASE) IN STOCK OF FINISHED GOODS & WORK IN PROGRESS :		
a) Closing stock		
-Finished Goods	-	-
-Work-in-progress	-	-
Total (a)	-	-
b) Less: Opening stock		
-Finished Goods	-	-
-Work-in-progress	-	-
Total (b)	-	-
NET INCREASE/(DECREASE) [a-b]	-	-

For CHARY AND CO

Chartered Accountants

F R No. 014102S

M S Appala Chary

Chartered Accountant

M. No. 221442



Harjit Singh

Sr. Manager (Admin & Finance)

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Senior Manager (Admin & Finance)

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023


(Amount - Rs.)		
Particulars	Current Year	Previous Year
SCHEDULE 20 - ESTABLISHMENT EXPENSES :		
a) Salaries and Wages	4,54,01,502.00	3,74,08,048.00
b) Allowances and Bonus	3,05,29,865.40	2,24,78,410.00
c) Contribution to Provident Fund	-	67,500.00
d) Contribution to Other Fund (NPS)	77,29,619.00	89,23,689.00
e) Staff Welfare Expenses - Medical charges	20,49,940.00	13,06,807.00
f) Expenses on Employees Retirement and Terminal Benefits	1,90,94,617.00	1,07,21,757.00
g) Others	-	-
TOTAL	10,48,05,543.40	8,09,06,211.00

For CHARY AND CO

Chartered Accountants

F R No. 0141025


M S Appala Chary
 Chartered Accountant
 M. No. 221442


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Sr. Manager (Admin & Finance)

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

(Amount - Rs.)		
Particulars	Current Year	Previous Year
SCHEDULE 21 - OTHER ADMINISTRATIVE EXPENSES :		
a) Purchases	3,60,05,953.00	3,41,63,042.00
b) Electricity and power	3,52,77,602.00	2,66,21,120.00
c) Water charges	62,50,701.00	39,85,112.00
d) Insurance	1,25,555.00	1,23,573.00
e) Repairs and maintenance	1,84,56,499.00	1,53,41,800.00
f) Rent, Rates and Taxes (Property Tax)	30,62,017.00	30,62,016.00
g) Vehicles Running and Maintenance	13,95,281.37	14,02,002.66
h) Postage, Telephone and Communication Charges	5,08,995.00	5,18,729.00
i) Printing and Stationary	9,75,595.00	5,32,679.00
j) Travelling and Conveyance Expenses	28,13,795.00	6,07,493.00
k) Expenses on Seminar/Workshops	3,34,050.00	3,86,000.00
l) Subscription Expenses	49,590.00	1,92,120.00
m) Expenses on Fees	-	-
n) Auditors Remuneration	50,000.00	64,000.00
o) Hospitality Expenses	1,70,876.00	1,47,084.00
p) Professional Charges	-	-
q) Advertisement and Publicity	11,89,099.00	9,43,207.00
r) Bank Charges	4,042.38	1,062.00
s) Security & Cleaning Contract Charges	5,75,91,514.00	3,71,69,617.00
t) Training Course /Symposia	-	-
u) Other Contingencies	65,92,603.87	39,17,830.41
v) Liveries & Blankets	-	-
w) Other Research Expenses	1,01,15,090.00	63,02,382.00
x) Office Books	-	-
TOTAL	18,09,68,858.62	13,54,80,869.07

For CHARY AND CO
Chartered Accountants
F R No. 0141025
M S Appala Chary
Chartered Accountant
M. No. 221442
Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
I Jagadeesh
Manager (Office & Finance)
NIAB
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

		(Amount - Rs.)	
Particulars	Current Year	Previous Year	
SCHEDULE 22 - EXPENDITURE ON GRANTS, SUBSIDIES ETC.:			
a) Grants given to Institutions/Organisations	-	-	
b) Subsidies given to Institutions/Organisations	-	-	
TOTAL	-	-	

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
SCHEDULES FORMING PART OF INCOME & EXPENDITURE AS AT 31st MAR 2023

(Amount - Rs.)		
Particulars	Current Year	Previous Year
SCHEDULE 23 - INTEREST :		
a) On Fixed Loans	-	-
b) On Other Loans (including Bank Charges)	-	-
c) Others	-	-
TOTAL	-	-

For CHARY AND CO

Chartered Accountants

F R No. 014102S

M S Appala Chary

Chartered Accountant

M. No. 221442

Harjit Singh

Sr. Manager (Admin & Finance)

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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY HYDERABAD

CLARIFICATION ON NOTES ON ACCOUNTS: 2022-23

- ❖ **Notes on Accounts 1 to 2 & 4 to 8:** Method of Accounting / Revenue recognition / Fixed Asset/ Inventories / Foreign Currency transactions: These are all only informative items.
- ❖ **Notes on Accounts 3:** Fixed Assets:
Depreciation has been calculated on Written Down Value method and at the rates prevailing to the concerned Fixed Asset as specified on the Income Tax Act, 1961 and set off against the Grant-in-aid (non-recurring). The details of the Depreciation on Fixed Assets are at Schedule – 8 is an integral part of the financial statements.



Harjit Singh
Senior Manager (Admin & Finance)

हरजीत सिंह / Harjit Singh
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Place: Hyderabad
 Date: 01/05/2023

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: A Forming part of Receipts and Payment a/c

Previous Year	Particulars	Current Year
	I-Remittances	
41,88,490.00	GST TDS	48,96,481.00
80,59,800.00	Income Tax	1,14,29,700.00
40,49,045.00	Other Salary Remittances	8,92,925.00
1,19,550.00	Professional Tax	1,37,950.00
64,91,624.00	TDS	28,90,527.00
2,29,08,509.00	TOTAL	2,02,47,583.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442



Harjit Singh
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Senior Manager (Admin & Finance)
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY

For the Year Ended 31st MAR 2023

Annexure: B Forming part of Receipts and Payment a/c

Previous Year	Particulars	Current Year
	Advance refunds/recovery/Adjustments.	
58,097.00	LTC [Advance]	1,49,974.00
50,000.00	Medical [Advance]	-
33,099.00	TA India & Abroad [Advance]	-
29,000.00	Refreshments [Advance]	10,000.00
11,87,166.00	Printing & Stationery [Advance]	20,000.00
2,13,762.00	Others [Contingencies Advance]	15,02,000.00
2,97,000.00	Others [Maintenance Advance]	9,25,490.00
4,25,000.00	Consumables, glassware and Spares [Advance]	5,605.00
25,000.00	Other Research Expenses [Advance]	63,100.00
15,000.00	Equipment [Advance]	6,12,45,000.00
	Office Equipment [Advance]	-
	Computer Advance [Staff]	6,400.00
30,28,193.00	General Deposits And Advances (Interest Liability)	11,76,758.74
9,54,708.00	Security Deposit	9,42,567.00
1,09,189.00	Revolving Advance	1,25,627.00
32,27,81,026.00	Inter Bank Transfers (GDA Others)	20,29,16,056.00
1,92,753.00	Prepaid Expenses	1,92,753.00
1,05,31,050.00	Leave Encashment and gratuity provision	1,59,56,571.00
33,99,30,043.00	TOTAL	28,52,37,901.74

For CHARY AND CO
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F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442


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Jagadeesh
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
 For the Year Ended 31st MAR 2023

Annexure: C Forming part of Receipts and Payment a/c

(Amount-Rs.)			(Amount-Rs.)		
Previous Year	Particulars	Current Year	Previous Year	Particulars	Current Year
	Projects-Receipts			Projects-Receipts	
51,417.00	FS005(NAT)	-	4,145.00	SP034(SSM)	412.00
20,000.00	FS-009(NN)	-	21,600.00	SP036(NG)	-
2,02,000.00	FS-011(SR)	1,66,382.00	9,672.00	SP037(NG)	-
6,75,000.00	FS016(DD)	-	388.00	SP039(SF)	-
5,83,892.00	FS017(AD)	-	16,02,964.00	SP040(NRH)	1,50,398.00
4,31,913.00	FS018(PPK)	-	2,229.00	SP041(GKR)	-
-	FS019(PK)	20,000.00	10,721.00	SP042(MS)	1,934.00
3,66,069.00	FS020(VG)	68,666.00	3,25,921.00	SP043(AGG)	-
20,000.00	FS021(SD)	-	12,27,291.00	SP044(PS)	3,692.00
6,51,000.00	FS024(RK)	4,37,437.00	4,10,017.00	SP045(ASD)	-
6,50,948.00	FS025(PG)	4,85,871.00	6,02,946.00	SP046(SF)	3,05,433.00
6,51,000.00	FS027(KRA)	4,72,064.00	1,50,141.00	SP049(ASD)	-
6,51,000.00	FS028(LK)	4,66,667.00	1,794.00	SP050(AS)	-
3,62,240.00	FS029(AR)	4,40,000.00	44,60,351.00	SP051(RKG)	94,695.00
8,34,920.00	FS031(MA)	-	7,23,257.00	SP052(HBD)	1,958.00
-	FS032(PS)	19,841.00	9,43,704.00	SP055(BD)	-
18,282.00	FS033(MRP)	1,680.00	9,08,266.00	SP056(SM)	5,099.00
20,000.00	FS034(SM)	20,000.00	11,50,528.00	SP057(HBD)	11,37,958.00
-	FS035(PJM)	25,031.00	2,58,897.00	SP058(SA)	15,17,801.00
5,40,005.00	FS036(KJ)	8,29,736.00	13,55,656.00	SP059(MS)	18,88,098.00
4,15,997.00	FS037(SSN)	4,39,934.00	33,47,300.00	SP060(BD)	10,19,608.00
3,85,812.00	FS038(KCR)	3,19,115.00	7,07,348.00	SP061(NRH)	-
4,34,163.00	FS039(PLR)	73,333.00	10,25,562.00	SP062(SG)	10,17,380.00
7,64,240.00	FS040	1,14,880.00	33,601.00	SP063(NRH)	18,90,258.00
20,000.00	FS041(AS)	-	63,51,160.00	SP064(PS)	1,92,281.00
5,40,800.00	FS042(MV)	-	29,762.00	SP065(NG)	4,00,000.00
4,40,000.00	FS043(RRG)	4,37,463.00	11,49,985.00	SP066(SG)	7,60,355.00
17,041.00	FS044(AT)	20,000.00	18,60,162.00	SP067(VTF)	1,04,587.00
7,36,200.00	FS045(AR)	7,79,120.00	10,454.00	SP068(SG)	6,05,443.00
28,986.00	FS046(SS)	11,552.00	15,67,647.00	SP069(BD)	8,20,664.00
28,877.00	FS047(NK)	11,678.00	19,41,635.00	SP070(GKR)	17,82,042.00
2,20,000.00	FS048(SPB)	4,39,857.00	11,35,402.00	SP071(SG)	6,11,706.00
2,87,452.00	FS049	4,02,000.00	14,86,600.00	SP072(AD)	6,516.00
36,556.00	FS050(VVK)	24,984.00	26,17,840.00	SP073A(PCMU)	35,620.00
2,36,042.00	FS051(BB)	3,91,837.00	1,25,90,400.00	SP073B(NRH)	2,08,319.00
28,384.00	FS052(U)	11,616.00	15,58,59,560.00	SP073C(Comp)	-
20,000.00	FS053(MR)	-	33,91,920.00	SP074(GKR)	23,14,129.00
-	FS054(SSI)	16,329.00	15,59,200.00	SP075(SS)	34,877.00
-	FS055(NP)	5,46,050.00	40,53,120.00	SP076(AS)	10,93,576.00
-	FS056(DP)	4,97,097.00	1,46,50,028.00	SP077(NG)	3,41,498.00
-	FS057(DM)	5,36,000.00	2,92,383.00	SP078(SS)	5,01,366.00
-	FS058(KA)	5,38,234.00	45,401.00	SP079(SKS)	267.00
-	FS059(AA)	6,13,567.00	44,11,999.00	SP080(SKK)	97,642.00
-	FS060(DR)	30,027.00	15,09,469.00	SP081(HBD)	8,695.00
-	FS061(AM)	40,000.00	19,78,824.00	SP082(AS)	29,886.00
-	FS062(MM)	20,000.00	25,76,029.00	SP083(SGL)	55,695.00
-	FS063(AP)	6,48,666.00	27,18,668.00	SP084(GKR)	31,871.00
-	FS064	4,92,440.00	5,00,805.00	SP085(HBD)	-
-	FS065(JCP)	31,014.00	21,60,205.00	SP086(AD)	5,28,341.00
-	FS066(SG)	7,49,360.00	3,62,222.00	SP087(PS)	33,03,602.00
-	FS067(KA)	1,91,274.00	10,00,614.00	SP088(PRS)	21,49,697.00
-	FS068(RPR)	1,91,274.00	-	SP089(NG)	3,18,455.00
-	FS069(IK)	3,36,081.00	-	SP090(KK)	24,97,411.00
59,628.00	SP004	1,13,792.00	-	SP091(NG)	1,93,267.00
9,03,848.00	SP024(SSM)	-	-	SP092(MS)	11,83,165.00
2,710.00	SP027(PS)	-	-	SP093(JR)	9,74,766.00
7,51,816.00	SP028(BD)	10,19,418.00	-	SP094(SF)	1,12,02,782.00
2,843.00	SP030(SSM)	-	-	SP095(JR)	12,24,023.00
5,01,288.00	SP031(HBD)	5,02,558.00	-	SP096(MS)	6,01,188.00
5,157.00	SP033(SSM)	-			
			26,06,93,319.00	TOTAL	5,72,92,381.00

 For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

 M S Appala Chary
 Chartered Accountant
 M. No. 221442

 Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

 हरजित सिंह/Harjit Singh
 सीनियर मैनेजर (एडमिन & फाइनेंस)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad,

 Jagadeesh
 Manager (Office & Finance)
 NIAB

 जगदीश/Jagadeesh
 मैनेजर (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY

For the Year Ended 31st MAR 2023

Annexure: D Forming part of Receipts and Payment a/c

Previous Year	Particulars	Current Year
	Advances	
58,097.00	LTC [Advance]	2,11,109.00
50,000.00	Medical [Advance]	-
33,099.00	TA India & Abroad [Advance]	-
-	Refreshments [Advance]	10,000.00
29,000.00	Printing & Stationery [Advance]	20,000.00
11,87,166.00	Others [Contingencies Advance]	15,02,000.00
2,13,762.00	Others [Maintenance Advance]	9,31,490.00
2,97,000.00	Consumables, glassware and Spares [Advance]	5,605.00
4,25,000.00	Other Research Expenses [Advance]	69,100.00
6,12,70,000.00	Equipment [Advance]	-
15,000.00	Office Equipment [Advance]	-
-	Computer Advance [Staff]	40,000.00
38,37,533.00	General Deposits And Advances (Interest Liability)	24,05,497.74
1,33,271.00	Security Deposit	6,91,861.00
1,09,189.00	Revolving Advance	1,25,627.00
32,30,81,745.00	Inter Bank Transfers (GDA Others)	20,29,16,056.00
1,92,753.00	Prepaid Expenses	-
-	Leave Encashment and gratuity provision	1,05,31,050.00
39,09,32,615.00	Total	21,94,59,395.74

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.


I Jagadeesh
Manager (Office & Finance)
NIAB
ए जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: E Forming part of Receipts and Payment a/c

Previous Year	Particulars	Current Year
	I-Remittances	
41,88,490.00	GST TDS	48,96,481.00
80,59,800.00	Income Tax	1,14,29,700.00
40,49,045.00	Other Salary Remittances	8,92,925.00
1,19,550.00	Professional Tax	1,37,950.00
64,91,624.00	TDS	28,90,527.00
2,29,08,509.00	TOTAL	2,02,47,583.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB हरजीत सिंह/Harjit Singh

वरिष्ठ प्रबंधक (प्रशासन और वित्त)
Senior Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
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I Jagadeesh
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ऐ जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: F Forming part of Receipts and Payment a/c

(Amount-Rs.)			(Amount-Rs.)		
Previous Year	Particulars	Current Year	Previous Year	Particulars	Current Year
Projects - Expenditure			Projects - Expenditure		
1,28,206.00	FS005(NAT)	-	-	SP029(GKR)	2,99,260.00
-97.00	FS006(PN)	-	1,53,677.00	SP030(SSM)	62,321.00
3,10,935.00	FS-007(PB)	59,065.00	3,73,373.00	SP031(HBD)	6,11,414.00
3,870.00	FS-009(NN)	-	16,296.00	SP032(NRH)	-
3,67,787.00	FS-011(SR)	1,74,034.00	7,79,892.00	SP033(SSM)	-
6,35,000.00	FS016(DD)	10,000.00	3,36,282.00	SP034(SSM)	17,348.00
6,43,010.00	FS017(AD)	5,000.00	12,30,021.00	SP036(NG)	94,606.00
3,95,000.00	FS018(PPK)	1,30,500.00	4,67,391.00	SP037(NG)	1,24,419.71
-	FS019(PK)	17,320.00	2,58,772.00	SP038(VB)	-
3,62,000.00	FS020(VG)	73,333.00	48,897.00	SP039(SF)	-
3,956.00	FS021(SD)	-	23,39,020.00	SP040(NRH)	14,42,403.00
6,17,649.00	FS024(RK)	4,37,987.00	-	SP041(GKR)	81,840.00
6,47,325.00	FS025(PG)	4,67,071.00	5,03,355.00	SP042(MS)	71,913.00
20,000.00	FS026(SN)	-	17,77,463.00	SP043(AKG)	5,30,837.00
5,50,000.00	FS027(KRA)	5,51,656.00	8,10,198.00	SP044(PS)	11,25,780.00
6,45,047.00	FS028(LK)	4,85,339.00	3,96,020.00	SP045(ASD)	1,49,192.00
3,91,967.00	FS029(AR)	4,05,000.00	3,95,833.00	SP046(SF)	5,34,994.00
-188.00	FS030(VPV)	-	4,15,607.00	SP048(SG)	-
8,56,821.00	FS031(MA)	-	10,99,874.00	SP049(ASD)	-
-	FS032(PS)	20,000.00	1,71,307.00	SP050(AS)	6,159.00
18,282.00	FS033(MRP)	1,699.00	49,79,110.00	SP051(RKG)	45,54,840.00
19,999.00	FS034(SM)	19,995.00	10,40,009.00	SP052(HBD)	2,85,855.00
-	FS035(PJM)	25,191.00	5,11,998.00	SP054(VB)	-
5,40,771.00	FS036(KJ)	7,37,150.00	13,34,206.00	SP055(BD)	5,62,768.50
4,15,934.00	FS037(SSN)	4,39,967.00	8,88,730.00	SP056(SM)	5,14,367.00
4,18,792.00	FS038(KCR)	3,24,181.00	13,09,302.00	SP057(HBD)	10,50,909.00
4,39,987.00	FS039(PLR)	73,332.00	15,11,737.00	SP058(SA)	16,01,090.00
7,15,041.00	FS040	1,68,103.00	20,40,510.00	SP059(MS)	22,56,713.00
19,998.00	FS041(AS)	-	6,09,158.00	SP060(BD)	33,89,541.00
5,41,600.00	FS042(MV)	-	17,96,064.00	SP061(NRH)	-
3,67,463.00	FS043(RRG)	4,39,851.00	15,86,562.00	SP062(SG)	14,04,394.00
17,041.00	FS044(AT)	20,000.00	28,14,626.00	SP063(NRH)	20,49,765.00
7,49,199.00	FS045(AR)	7,65,960.00	46,82,550.00	SP064(PS)	37,39,466.00
28,812.00	FS046(SS)	11,725.00	10,50,845.00	SP065(NG)	14,76,483.00
28,829.00	FS047(NK)	11,678.00	10,88,078.00	SP066(SG)	17,22,170.00
2,19,857.00	FS048(SPB)	4,40,000.00	7,77,24,342.00	SP067(VTF)	64,77,245.00
2,66,000.00	FS049	4,24,419.00	4,99,923.00	SP068(SG)	6,04,234.00
36,554.00	FS050(VVK)	24,986.00	11,75,928.00	SP069(BD)	8,64,279.00
2,35,879.00	FS051(BB)	3,91,974.00	15,77,578.00	SP070(GKR)	10,60,934.00
28,034.00	FS052(U)	11,966.00	5,61,692.00	SP071(SG)	10,40,837.00
20,000.00	FS053(MR)	-	5,10,000.00	SP072(AD)	9,61,259.00
-	FS054(SSI)	16,319.00	5,40,788.00	SP073A(PCMU)	18,26,886.00
-	FS055(NP)	5,30,242.00	3,24,242.00	SP073B(NRH)	1,08,52,018.00
-	FS056(DP)	4,80,386.00	15,31,98,520.00	SP073C(Comp)	26,61,040.00
-	FS057(DM)	5,07,500.00	21,40,595.00	SP074(GKR)	23,38,146.00
-	FS058(KA)	5,39,481.00	1,63,027.00	SP075(SS)	3,47,200.00
-	FS059(AA)	6,13,624.00	22,11,871.00	SP076(AS)	17,35,945.00
-	FS060(DR)	30,000.00	5,03,525.00	SP077(NG)	1,17,54,709.00
-	FS061(AM)	38,994.00	-	SP078(SS)	6,07,831.00
-	FS062(MM)	19,999.00	4,400.00	SP079(SKS)	41,001.00
-	FS063(AP)	4,58,471.00	47,387.00	SP080(SKK)	27,60,466.00
-	FS064	4,82,440.00	4,42,864.00	SP081(HBD)	10,62,225.00
-	FS065(ICP)	29,940.00	2,50,099.00	SP082(AS)	14,62,101.00
-	FS066(SG)	7,49,189.00	26,075.00	SP083(SGL)	20,66,809.00
-	FS067(KA)	1,77,000.00	4,19,213.00	SP084(GKR)	19,51,593.00
-	FS068(NPR)	1,77,000.00	-	SP085(HBD)	5,00,805.00
-	FS069(K)	3,11,000.00	-	SP086(AD)	19,86,443.00
79,829.00	SP002	-	-	SP087(PS)	12,53,650.00
-	SP004	1,73,420.00	-	SP088(PRS)	23,99,395.00
4,48,254.00	SP016 (VB)	-	-	SP089(NG)	2,99,311.00
55,340.00	SP020(AS)	-	-	SP090(KK)	24,97,411.00
2,33,487.00	SP022 (NRH)	-	-	SP091(NG)	1,88,755.00
5,94,97,023.00	SP024(SSM)	72,71,370.67	-	SP092(MS)	5,80,075.00
-	SP025 (SF)	1,10,389.60	-	SP093(JR)	6,53,015.00
94,300.00	SP026 (SS)	-	-	SP094(SF)	1,06,41,638.00
77,429.00	SP027(PS)	70,181.00	-	SP095(JR)	88,216.00
4,56,345.00	SP028(BD)	13,43,636.00	-	SP096(MS)	54,622.00
			35,37,87,199.00	TOTAL	12,46,50,006.48

For CHARY AND CO.
Chartered Accountants
F R No. 0141025

M S Appala Enay
Chartered Accountant
M. No. 221442

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ जगदीश / I Jagadeesh
मैनेजर (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: G Forming part of Balance sheet

Previous Year	Particulars	Current Year
51,40,405.00	March Salaries	67,54,419.00
5,43,582.00	NPS Employer Contribution	7,09,458.00
59,000.00	Audit Fee	50,000.00
22,40,447.00	Electricity Charges	-
3,57,522.00	Water Charges	4,14,222.00
21,830.00	Telephone Charges	23,033.00
6,373.00	Photo Copier maintenance Charges	3,605.00
26,59,541.00	Outsourcing Contract Charges	-
11,14,749.00	Security Contract Charges	-
4,62,226.00	Technical maintenance Contract Charges	4,61,677.00
87,438.00	Chillers maintenance Contract Charges	37,046.00
3,43,635.00	Lifts Maintenance Contract Charges	2,34,848.00
5,900.00	Biowaste maintenance Charges	5,900.00
14,750.00	Software Maintenance Charges	44,250.00
2,91,667.00	Small Animal Facility AMC Charges	3,16,667.00
1,33,49,065.00	TOTAL	90,55,125.00

For CHARY AND CO

Chartered Accountants

F R No. 0141025

M S Appala Chary
Chartered Accountant

M. No. 221442

Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

बॉस (अनुमानित वित्त)

Senior Manager (Admin & Finance)

राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान

National Institute of Animal Biotechnology

Hyderabad.

I Jagadeesh

Manager (Office & Finance)

NIAB

रेखादाश (I Jagadeesh)

Manager (Office & Finance)

राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान

National Institute of Animal Biotechnology (NIAB)

Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY

For the Year Ended 31st MAR 2023

Annexure: H Forming part of Balance sheet

Previous Year	Particulars	Current Year
	LOANS AND ADVANCES	
6,12,45,000.00	Equipment [Advance]	-
6,12,45,000.00	TOTAL	-

For CHARY AND CO

Chartered Accountants

F R No. 014102S



M S Appala Chary

Chartered Accountant

M. No. 221442

Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

वर्तमान प्रबंधक (प्रशासन और वित्त)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

I Jagadeesh

Manager (Office & Finance)

NIAB

ऐ जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: I Forming part of Balance sheet

(Amount-Rs.)		
Previous Year	Particulars	Current Year
	PREPAYMENTS / DEPOSITS	
-	Computer Advance [Staff]	33,600.00
-	LTC [Advance]	61,135.00
-	Other Research Expenses [Advance]	6,000.00
-	Others [Maintenance Advance]	6,000.00
1,92,753.00	Prepaid Expenses	-
1,92,753.00	TOTAL	1,06,735.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442



Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
सीनियर प्रबंधक (प्रशासन और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.



I Jagadeesh
Manager (Office & Finance)
NIAB
ऐ जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
For the Year Ended 31st MAR 2023

Annexure: J Forming part of Income and Expenditure statement

Previous Year	Particulars	(Amount-Rs.) Current Year
	Provision For Salaries and other Expenses	
	Addition during the year :	
51,40,405.00	Salaries for March	67,54,419.00
5,43,582.00	NPS (Employer contribution)	7,09,458.00
59,000.00	Audit Fee	50,000.00
22,40,447.00	Electricity	-
3,57,522.00	Water charges	4,14,222.00
21,830.00	Telephone Charges	23,033.00
6,373.00	Photo copier maintenance charges	3,605.00
26,59,541.00	Outsourcing Contract Charges	-
11,14,749.00	Security Contract Charges	-
4,62,226.00	Technical maintenance Contract Charges	4,61,677.00
87,438.00	Chillers maintenance Contract Charges	37,046.00
3,43,635.00	Lifts Maintenance Contract Charges	2,34,848.00
5,900.00	Biowaste maintenance Charges	5,900.00
14,750.00	Software Maintenance Charges	44,250.00
2,91,667.00	Small Animal Facility AMC Charges	3,16,667.00
1,33,49,065.00	Sub total	90,55,125.00
75,35,539.00	Less : Adjustments during the year (Refer Annexure-G)	1,33,49,065.00
58,13,526.00	TOTAL	-42,93,940.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M-S Appala Chary
Chartered Accountant
M. No. 221442


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.


Jagadeesh
Manager (Office & Finance)
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National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
 Details of Closing balances of various Earmarked / Endowment Funds (Refer Sch-3)
 For the Year Ended 31 MAR 2023

Annexure-I

(Amount in Rs.)

Previous year	Proj No	Particulars	Current Year
494.00	FS005(NAT)	DBT-JRF	494.00
59,065.00	FS-007(PB)	DST-INSPIRE FELLOWSHIP	-
7,652.00	FS-011(SR)	DBT-JRF Fellowship	-
43,921.00	FS016(DD)	DBT-JRF	33,921.00
42,783.00	FS017(AD)	DBT-JRF	37,783.00
1,30,500.00	FS018(PPK)	DST-INSPIRE Fellowship	-
-2,680.00	FS019(PK)	CSIR Fellowship	-
4,667.00	FS020(VG)	Generation of recombinant therapeutics in animal bioreactors for increasing affordability and improvement of human health.	-
11,124.00	FS023 (NH)	SERB	11,124.00
48,353.00	FS024(RK)	DBT-JRF	47,803.00
-28.00	FS025(PG)	DBT-JRF	18,772.00
1,29,552.00	FS027(KRA)	DBT-JRF	49,960.00
36,737.00	FS028(LK)	DBT-JRF	18,065.00
33.00	FS029(AR)	DST-INSPIRE FELLOWSHIP	35,033.00
159.00	FS032(PS)	CSIR - Fellowship	-
19.00	FS033(MRP)	CSIR-Fellowship	-
1.00	FS034(SM)	CSIR - Fellowship	6.00
186.00	FS035(PJM)	CSIR - Fellowship	26.00
-18.00	FS036(KJ)	Identification and characterization of novel host targets for developing improved therapeutics for the zoonotic disease, Brucellosis.	92,568.00
66.00	FS037(SSN)	ICMR	33.00
5,208.00	FS038(KCR)	ICMR	142.00
9.00	FS039(PLR)	Improving gene editing with twin technologies- CRISPR & Reverse Genetics	10.00
69,079.00	FS040	DBT-SRF	15,856.00
2.00	FS041(AS)	CSIR-UGC	2.00
-800.00	FS042(MV)	ICMR-SRF	-800.00
72,537.00	FS043(RRG)	ICMR-SRF	70,149.00
-12,999.00	FS045(AR)	DBT RA1(IISC)	161.00
174.00	FS046(SS)	CSIR Fellowship	1.00
48.00	FS047(NK)	CSIR Fellowship	48.00
143.00	FS048(SPB)	Nanoliposome mediated co-delivery of PTEN plasmid and plumbagin drug for the treatment of hepatic cancer using 3D spheroid model.	-
21,452.00	FS049	DBT-JRF	967.00
2.00	FS050(VVK)	CSIR-UGC	-
163.00	FS051(BB)	ICMR-JRF	-
350.00	FS052(IJ)	CSIR-UGC	26.00
-	FS054(SJ)	CSIR-Fellowship	-
-	FS055(NP)	DBT-JRF	10.00
-	FS056(DP)	DBT-JRF	15,808.00
-	FS057(DM)	DBT-JRF	16,711.00
-	FS058(KA)	DBT-JRF	28,500.00
-	FS059(AA)	Fellowship-JRF	-1,247.00
-	FS060(DR)	"Isolation and Characterisation of theranostic aptamers for sensitive detection and neutralization of botulinum toxins".	-57.00
-	FS061(AM)	CSIR	27.00
-	FS062(MM)	CSIR	1,006.00
-	FS063(AP)	CSIR	1.00
-	FS064	ICMR-Fellowship	1,90,195.00
-	FS065(JCP)	Fellowship-DST/INSPIRE	10,000.00
-	FS066(SG)	CSIR-JRF(RSP)	1,074.00
-	FS067(KA)	DBT-JRF	171.00
-	FS068(RPR)	DBT-JRF	14,274.00
-	FS069(IK)	DBT-JRF	14,274.00
0.50	SP002	DBT-JRF	25,081.00
59,628.00	SP004	Characterization of Cell Cycle regulators associated with DNA replication machinery in Toxoplasma Gondii - DST INSPIRE Faculty	0.50
72,71,370.67	SP024(SSM)	Evaluation of Anti-inflammatory Natural Compounds for Therapeutic use in Mastitis of Dairy Animals - NMPB	-
1,10,389.60	SP025 (SF)	Genomics for conservation of indigenous cattle breeds and for enhancing milk yield, Phase-I	-
70,181.00	SP027(PS)	Random and Targeted mutagenesis of zoonotic pathogen Leptospira interrogans: in perspective of vaccine development"	-
3,86,586.00	SP028(BD)	Aptamer based lateral flow device for the detection of heat or estrus in buffalo	-
2,99,260.00	SP029(GKR)	The Ramanujan Fellowship	62,368.00
62,321.00	SP030(SSM)	To understand the role of Cytoplasmic linker protein-170 in the down-regulation of TLR4 signaling	-
1,62,969.68	SP031(HBD)	Genome ending for generating semen favoring production of cow.	-
77,418.00	SP033(SSM)	Unraveling Molecular Mechanisms of Homologous recombination and Germ cell maintenance to prevent Birth Defects, Extend Human and livestock Fertility.	64,113.68
31,437.00	SP034(SSM)	JC Bose National Fellowship	77,418.00
0.33	SP035(PS)	An attempt to generate transgenic pig through testicular transgenesis or male germ cell transplantation to enhance productivity.	14,501.00
94,606.00	SP036(NG)	Development of point-of-care diagnostics for detection of venom proteins of Naja Naja Cobra and Bungarus caeruleus Krait in envenomed animals.	0.33
1,24,419.71	SP037(NG)	Feasibility of producing cattle gonadotropins in milk of rabbit by in vivo gene transfection	-
3,237.00	SP039(SF)	Establishment of goat mammary epithelial/stem cell lines for the production of pharmaceutical interest proteins	-
62,71,366.00	SP040(NRH)	Development of Novel Mucosal Delivery System and Testing its Efficacy Against Salmonella infection	3,237.00
81,840.00	SP041(GKR)	Chicken or egg: Drivers of antimicrobial resistance in poultry in India	49,79,361.00
81,126.00	SP042(MS)	Understanding the mechanism of host innate immune suppression by the Brucella effector protein, TcPB to identify novel drug targets for brucellosis.	-
5,30,837.00	SP043(AGK)	Molecular platform for epidemiology, disease mapping and development of diagnostics for economically important diseases of ducks.	11,147.00
11,22,088.00	SP044(PS)	Development of injectable nanofibrous implant for oestrus synchronization in cattle.	-
1,49,192.00	SP045(ASD)	Understanding the Epigenetics of Host Pathogen interaction during Bovine Theileriosis"	-
3,11,634.00	SP046(SF)	Characterization of spliceosome-associated Nine Teen complex (NTC) like proteins in Toxoplasma Gondii.	-
6,159.00	SP050(AS)	Immunocharacterization of Lipopolysaccharide (LPS) from Leptospira: Towards development LPS based Vaccine."	82,073.00
46,85,483.16	SP051(RKG)	Establishment of genome manipulation technology in Theileria parasite for identification of gene involved in transformation of host cell.	-
2,83,897.00	SP052(HBD)	Genomics assisted pathobiology to identify novel targets for diagnosis and therapeutic intervention(s) of Japanese encephalitis and Leptospirosis.	2,25,338.16
		Development of large animal models and Polyherbal medicines to treat ovarian cysts in livestock.	-




 Jagadeesh / Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

ऐ जगदीश / Jagadeesh
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 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
Details of Closing balances of various Earmarked / Endowment Funds (Refer Sch-3)
For the Year Ended 31 MAR 2023

Annexure-I

(Amount in Rs.)

Previous year	Proj No	Particulars	Current Year
0.50	SP054(VB)	Deciphering the role of efflux pumps in imparting antimicrobial resistance in staphylococcus aureus and their inhibitors in potentiating the existing therapy.	0.50
5,62,768.50	SP055(BD)	Limiting antimicrobial resistance by inhibiting diadenylate cyclase (DAC)- a bacterial second messenger biosynthetic enzyme involved in biofilm formation and cell wall integrity.	-
5,47,794.00	SP056(SM)	Understanding the mechanism of buparvaquone resistance in apicomplexan parasite theileriaannulata.	38,526.00
1,06,298.00	SP057(HBD)	An attempt to enhance the shelf life of an oocyte to increase the fertilization time window.	1,93,347.00
3,49,004.00	SP058(SA)	Identification of key molecular factors involved in resistance/susceptibility to paratuberculosis infection in indigenous breeds of cows	2,65,715.00
3,48,615.00	SP059(MS)	Molecular biological studies on porcine reproductive & respiratory syndrome (PRRS) virus in pig population of North East Region of India for development of sustainable diagnostics and vaccine.	-
30,70,161.00	SP060(BD)	A transcriptional approach to identify biomarkers of susceptibility and/or resistance to tuberculosis in native and crossbred cattle.	7,00,228.00
6,18,057.00	SP062(SG)	COVID-SCAN(Novel diagnostic platforms for point-of-care SARS-CoV-2 detection).	2,31,043.00
2,14,446.00	SP063(NRH)	Hunt for PANACEA (PAN-Anti-Coronavirals) against coronaviruses of the past, present, and the future.	54,939.00
79,00,617.00	SP064(PS)	Socio-economic upliftment of landless and marginal farmers of Yadgir district (an aspirational district) of Karnataka through goat rearing.	43,53,432.00
4,78,599.00	SP065(NG)	Gene editing for generating tissue specific complete knock down/out of Myostatin gene for increased lean meat production in Indian goat (Capra hircus, Osmanabadi breed), Phase-1	-5,97,884.00
10,06,046.00	SP066(SG)	Development of Multiplex/Disposable Paper Microfluidic Device for Detection of β -lactum antibiotic residues in livestock and poultry products.	44,231.00
1,62,37,043.00	SP067(VTF)	Upgradation of Department of Biotechnology's two existing laboratories as Central Drugs Laboratory for testing of COVID-19 vaccine.	98,64,385.00
11,559.00	SP068(SG)	Development of a new generation of biosensors integrated with nanostructured sensitive elements for detection of Salmonellosis.	12,768.00
3,91,719.00	SP069(BD)	Development of an endogenous STING agonist adjuvanted Mycobacterium bovis BCG vaccine to enhance efficacy against tuberculosis.	3,48,104.00
3,64,057.00	SP070(GKR)	Validation and translation of the vaccines as well as diagnostic technologies developed in Phase-I of ADMaC.	10,85,165.00
5,73,710.00	SP071(SG)	PESTISCAN (Development of novel biosensor for endosulfan pesticide residue detection.)	1,44,579.00
9,76,600.00	SP072(AD)	Development of affordable Immunochromatographic Test(ICT) based on recombinant proteins for point-of-care detection of Toxoplasma gondii infection	21,857.00
20,77,052.00	SP073A(PCMU)	Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.	2,85,786.00
1,22,66,158.00	SP073B(NRH)	Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.	16,22,459.00
26,61,040.00	SP073C(Comp)	Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.	-
12,51,325.00	SP074(GKR)	Studies on the immunodominant proteins of the zoonotic pathogen, Brucella to develop improved diagnostic assays and vaccines for brucellosis.	12,27,308.00
13,96,173.00	SP075(SS)	Identification of key molecular players specially lncRNAs involved in response to NDV challenge in indigenous and exotic chicken breeds using RNA-seq analysis.	10,83,850.00
18,41,249.00	SP076(AS)	Phenotypic characterization of ruminant B cells from precursors to effector cells- Phase I.	11,98,880.00
1,41,46,503.00	SP077(NG)	Therapeutic protein production in milk of farm animals to increase their affordability.	27,33,292.00
2,92,383.00	SP078(SS)	Development of catalytically Active Nanoprobes or Enhanced imaging and cancer phenotyping.	1,85,918.00
41,001.00	SP079(SKS)	Synthesis, characterization and cellular interactions of carbohydrate metal nanoclusters (CRS-M-300)	267.00
43,64,612.00	SP080(SKK)	Validation of DBT-NIAB SNP chip for Breed Identification and Preliminary Genome Wide Association Studies on Milk Yield	17,01,788.00
10,66,605.00	SP081(HBD)	Identification and phenotypic analysis of novel targets of guarding of germ cells (taps) to combat the ovarian insufficiency (poi).	13,075.00
17,28,725.00	SP082(AS)	Identification and characterization of CDK-cyclin pair in Theileria annulata and identification of small molecule inhibitor perturbing CDK-cyclin interactions	2,96,510.00
25,49,954.00	SP083(SGL)	Adipose tissue-derived mesenchymal stem cells for therapy in livestock species	5,38,840.00
22,99,455.00	SP084(GKR)	Understanding the role of an Ubiquitin Specific Peptidase in the invasion and intracellular replication of the zoonotic bacterial pathogen, Brucella	3,79,733.00
5,00,805.00	SP085(HBD)	High-End workshop (karyashala) on Ultrastructural imaging and its applications in livestock research	-
21,60,205.00	SP086(AD)	Development of field based diagnostic assays (serological and molecular)and genotyping of Toxoplasma gondii from clinical samples	7,02,103.00
3,62,222.00	SP087(PS)	Nanostructured paper-kit comprising magnetic nanoparticle for naked eye and rapid detection of subclinical and clinical mastitis: optimization for large scale production and clinical validation in field condition	24,12,174.00
10,00,614.00	SP088(PRS)	Targeting Virulence associated SVSP Gene Family of Theileria annulata for Developing potential Therapeutic Candidates	7,50,916.00
-	SP089(NG)	Enrichment of egg and meat by producing bovine lactoferrin through development of transgenic chicken.	19,144.00
-	SP091(NG)	"Development of transgenic chicken as bioreactor for easy and cost effective production of human therapeutic proteins-tissue plasminogen activator(htPA) and erythropoietin(hERP)"	4,512.00
-	SP092(MS)	"Evaluation of anticancer potency of accessory viral protein W ₁ of Newcastle disease virus."	6,03,090.00
-	SP093(JR)	3D Bioprinting of electrically conducting hydrogel with stem cells and Neovasculture Guidance for Functional Cardiac tissue Regeneration.	3,21,751.00
-	SP094(SF)	Development of Novel Adjuvanted Vaccine for Foot-and-Mouth Disease	5,61,144.00
-	SP095(JR)	"3D Bioprinting Biomimetic Dermo-Epidermal Construct using Engineered Silk Spidroin with Vasculature Guidance for Skin Tissue Regeneration and Organotypic Tissue Model"	11,35,807.00
-	SP096(MS)	"In vitro immunogenicity study of Newcastle disease virus in poultry"	5,46,566.00
10,87,08,575.65		TOTAL	4,13,50,950.17

For CHARY AND CO
Chartered Accountants
F R No. 0451025
M S Appala Chary
Chartered Accountant
M. No. 221442

Harijit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

हरिजित सिंह/Harijit Singh
ज्येष्ठ प्रबंधक (प्रशासन और वित्त)
Senior Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

ऐ जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
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NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
Details of Fixed Assets Fund (Capitalised Portion of Project Grants)
For the Year Ended 31 MAR 2023

Annexure-II

(Amount in Rs.)

Previous year	Proj No	Particulars	Current Year
1,79,550.00	SP028(BD)	The Ramanujan Fellowship	1,11,500.00
1,52,155.00	SP049(ASD)	Development of lateral flow based chromatographic immunoassay using recombinant chimera antigens for point of care testing of Toxoplasma gondii infection.	-
1,47,213.00	SP051(RKG)	Genomics assisted pathobiology to identify novel targets for diagnosis and therapeutic intervention(s) of Japanese encephalitis and Leptospirosis.	-
1,47,675.00	SP055(BD)	Limiting antimicrobial resistance by inhibiting diadenylate cyclase (DAC)- a bacterial second messenger biosynthetic enzyme involved in biofilm formation and cell wall integrity.	-
3,55,500.00	SP059(MS)	Molecular biological studies on porcine reproductive & respiratory syndrome (PRRS) virus in pig population of North East Region of India for development of sustainable diagnostics and vaccine.	-
14,98,544.00	SP061(NRH)	Complete solution for molecular diagnosis of COVID 19 multiplex assay along with screening for other related respiratory diseases.	-
9,60,000.00	SP063(NRH)	Hunt for PANACEA (PAN-Anti-Coronavirals) against coronaviruses of the past, present, and the future.	-
8,72,698.00	SP064(PS)	Socio-economic upliftment of landless and marginal farmers of Yadgir district (an aspirational district) of Karnataka through goat rearing.	-
1,24,688.00	SP066(SG)	Development of Multiplex/Disposable Paper Microfluidic Device for Detection of β -lactum antibiotic residues in livestock and poultry products.	8,72,000.00
6,75,49,820.00	SP067(VTF)	Upgradation of Department of Biotechnology's two existing laboratories as Central Drugs Laboratory for testing of COVID-19 vaccine.	4,45,595.00
89,998.00	SP068(SG)	Development of a new generation of biosensors integrated with nanostructured sensitive elements for detection of Salmonellosis.	-
7,61,208.00	SP069(BD)	Development of an endogenous STING agonist adjuvanted Mycobacterium bovis BCG vaccine to enhance efficacy against tuberculosis.	-
-	SP071(SG)	PESTISCAN (Development of novel biosensor for endosulfan pesticide residue detection.)	2,47,800.00
-	SP072(AD)	Development of affordable Immunochromatographic Test(ICT) based on recombinant proteins for point-of-care detection of Toxoplasma gondii infection	6,08,000.00
-	SP073B(NRH)	Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.	22,54,672.00
4,15,284.00	SP074(GKR)	Studies on the immunodominant proteins of the zoonotic pathogen, Brucella to develop improved diagnostic assays and vaccines for brucellosis.	5,91,701.00
15,31,000.00	SP076(AS)	Phenotypic characterization of ruminant B cells from precursors to effector cells: Phase I.	-
-	SP077(NG)	Therapeutic protein production in milk of farm animals to increase their affordability.	77,92,726.00
-	SP080(SKK)	Validation of DBT-NIAB SNP chip for Breed Identification and Preliminary Genome Wide Association Studies on Milk Yield	4,04,722.00
-	SP081(HBD)	Identification and phenotypic analysis of novel targets of guarding of germ cells (taps) to combat the ovarian insufficiency (poi).	4,99,500.00
-	SP083(SGL)	Adipose tissue-derived mesenchymal stem cells for therapy in livestock species	8,87,320.00
-	SP084(GKR)	Understanding the role of an Ubiquitin Specific Peptidase in the invasion and intracellular replication of the zoonotic bacterial pathogen, Brucella	2,94,249.00
-	SP086(AD)	Development of field based diagnostic assays (serological and molecular) and genotyping of Toxoplasma gondii from clinical samples	6,97,847.00
-	SP087(PS)	Nanostructured paper-kit comprising magnetic nanoparticle for naked eye and rapid detection of subclinical and clinical mastitis: optimization for large scale production and clinical validation in field condition	3,62,000.00
-	SP088(PRS)	Targeting Virulence associated SVSP Gene Family of Theileria annulata for Developing potential Therapeutic Candidates	9,95,944.00
-	SP093(JR)	3D Bioprinting of electrically conducting hydrogel with stem cells and Neovascularization Guidance for Functional Cardiac tissue Regeneration.	98,130.00
-	SP094(SF)	Development of Novel Adjuvanted Vaccine for Foot-and-Mouth Disease	94,76,395.00
7,47,85,333.00		TOTAL	2,66,40,101.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 Senior Manager (Admin & Finance)
 NIAB
 National Institute of Animal Biotechnology

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 ऐ जगदीश / I Jagadeesh
 मनेधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

NATIONAL INSTITUTE OF ANIMAL BIOTECHNOLOGY
Receipts and Payments Statement of NIAB's Staff Welfare Fund for the year ended 31/03/2023

Amount (Rs.)									
Receipts					Payments				
S.No.	Head		Current Year	Pervious Year	S.No.	Head		Current Year	Pervious Year
1	Opening Balances a) Cash in hand b) Bank Balances		84,645.30	27,293.00	1	Expenses a) Establishment Expenses b) Administrative Expenses		3.83	1,767.70
2	Contribution by the Employees Mar-22 Apr-22 May-22 Jun-22 Jul-22 Aug-22 Sep-22 Oct-22 Nov-22 Dec-22 Jan-23 Feb-23	4,700.00 4,775.00 5,000.00 5,000.00 5,000.00 5,150.00 5,900.00 5,900.00 5,750.00 5,720.00 5,900.00 5,900.00	64,695.00	57,770.00	2	Advances paid		-	-
3	Distributable portion of User charges & non-tax revenue received from NIAB		53,751.00	-					
4	Interest Earned Interest earned for the period 01/03/2022 to 31/05/2022 Interest earned for the period 01/06/2022 to 31/08/2022 Interest earned for the period 01/09/2022 to 30/11/2022 Interest earned for the period 01/12/2022 to 28/02/2023	608.00 706.00 812.00 1,211.00	3,337.00	1,350.00	3	Closing Balances a) Cash in hand b) Bank Balances		2,06,424.47	84,645.30
5	Advances Received			-					
	Total		2,06,428.30	86,413.00		Total		2,06,428.30	86,413.00

[Signature]
Dr G Taru Sharma
Chairperson

डॉ। जी। तरु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025
[Signature]
M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

[Signature]
Harjit Singh
Secretary
हरजीत सिंह/Harjit Singh
वर्चस्व प्रबंधक (प्रशासन और वित्त)
Senior Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

[Signature]
I Jagadeesh
Treasurer
ऐ जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad

FS005(NAT)-DBT-JRF

P.L.Ms.Neelam A Topno

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
77,283.00	Opening Balance	494.00			0.00
51,417.00	Grant In Aid	0.00	1,05,000.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	23,206.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
1,28,700.00		494.00	1,28,206.00		0.00
	Excess of Expenditure over Income	0.00	494.00	Closing Balance	494.00
1,28,700.00		494.00	1,28,700.00		494.00



Dr G Taru Sharma
Director
NIAB

डॉ. जी. गुरु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
FR No. 0141025


M Sappala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023



Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
सीनियर प्रबंधक (प्रशासन और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.



Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/Jagadeesh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

**FS006(PN)-CSIR-JRF
P.I:Ms.Prachita Nandini**

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	97.00		0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00	-	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
0.00		0.00		Closing Balance	0.00
0.00	Excess of Expenditure over Income	0.00	0.00		0.00
0.00		0.00	0.00		0.00

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**

**M S Appala Chary
Chartered Accountant
M. No. 221442**

**UDIN: 23221442BGVWQK9638
Date: 01/05/2023**

**Dr G Taru Sharma
Director
NIAB**

**तारु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२ /Hyderabad-500 032**

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**

**हरजित सिंह/Harjit Singh
सीनियर मैनेजर (एडमिन & फाइनेंस)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.**

**I Jagadeesh
Manager (Office & Finance)
NIAB**

**ऐ जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.**

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
3,70,000.00	Opening Balance	59,065.00			0.00
0.00	Grant In Aid	0.00	2,96,935.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	14,000.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	59,065.00
3,70,000.00		59,065.00	3,10,935.00		59,065.00
0.00	Excess of Expenditure over Income	0.00	59,065.00	Closing Balance	0.00
3,70,000.00		59,065.00	3,70,000.00		59,065.00



Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
निदेशक / Director
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हेदराबाद-५०० ०३२ / Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023



Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Senior Manager (Admin & Finance)
Harjit Singh
NIAB
National Institute of Animal Biotechnology
Hyderabad/Hydrabad.



I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हेदराबाद / Hyderabad.

**NIAB
Hyderabad**
FS-009(NN)-CSIR-UGC Fellowship

P.I: Mr. B. Nagaraj Navak

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	16,130.00		0.00
20,000.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	3,870.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
20,000.00		0.00	20,000.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
20,000.00		0.00	20,000.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह (एडमिन & फाइनेंस)
Senior Manager (Admin & Finance)
National Institute of Animal Biotechnology
(NIAB) Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,73,439.00	Opening Balance	7,652.00			0.00
2,02,000.00	Grant In Aid	1,66,382.00	3,45,333.00	Salaries - Manpower	1,66,382.00
0.00	Other Receipts	0.00	7,621.00	Consumables	0.00
0.00		0.00	14,833.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	7,652.00
3,75,439.00		1,74,034.00	3,67,787.00		1,74,034.00
0.00	Excess of Expenditure over Income	0.00	7,652.00	Closing Balance	0.00
3,75,439.00		1,74,034.00	3,75,439.00		1,74,034.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary -
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. शर्मा / Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
जूनियर मैनेजर (एडमिन & फाइनेंस)
Senior Manager (Admin & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

**NIAB
Hyderabad
FS016(DD)-DBT-JRF
P.L:Mr.Debabrata Dandasena**

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
3,921.00	Opening Balance	43,921.00			0.00
6,75,000.00	Grant In Aid	0.00	6,30,000.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	5,000.00	Contingencies	10,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
6,78,921.00		43,921.00	6,35,000.00		10,000.00
0.00	Excess of Expenditure over Income	0.00	43,921.00	Closing Balance	33,921.00
6,78,921.00		43,921.00	6,78,921.00		43,921.00

Dr G Taru Sharma
Director
NIAB

डॉ। जी। रघु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
सीनियर मैनेजर (एडमिन & फाइनेंस)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/I. Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad

FS017(AD)-DBT-JRF

P.I: Mr. Abhishek Das

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,01,901.00	Opening Balance	42,783.00			0.00
5,83,892.00	Grant In Aid	0.00	6,30,000.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	13,010.00	Contingencies	5,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
6,85,793.00		42,783.00	6,43,010.00		5,000.00
	Excess of Expenditure over Income	0.00	42,783.00	Closing Balance	37,783.00
6,85,793.00		42,783.00	6,85,793.00		42,783.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 232214428GVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

श्री। जी। तरु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

श्री। हरजित सिंह/Harjit Singh
जूनियर मैनेजर (एडमिन & फाइनेंस)
राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

FS018(PPK)-DST- INSPIRE Fellowship

P.L:Ms.Prajna Parimita Kar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
93,587.00	Opening Balance	1,30,500.00			0.00
4,31,913.00	Grant In Aid	0.00	3,85,000.00	Salaries - Manpower	1,14,333.00
0.00	Other Receipts	0.00	0.00	Consumables	10,000.00
0.00		0.00	10,000.00	Contingencies	5,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	1,167.00
5,25,500.00		1,30,500.00	3,95,000.00		1,30,500.00
0.00	Excess of Expenditure over Income	0.00	1,30,500.00	Closing Balance	0.00
5,25,500.00		1,30,500.00	5,25,500.00		1,30,500.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
निर्देशक / Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032 / Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सिニア मैनेजर (अडमिन & फाइनेंस)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
हैदराबाद-500 032 / Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद / Hyderabad.

NIAB
Hyderabad
FS019(PK)-CSIR Fellowship
P.I.: Mr. Pankaj Kumar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	2,680.00	Opening Balance	2,680.00
0.00	Grant In Aid	20,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	17,320.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		20,000.00	2,680.00		20,000.00
2,680.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
2,680.00		20,000.00	2,680.00		20,000.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442

UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

डा. जी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२ / Hyderabad-500 032.

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

हरजित सिंह / Sr. Manager (Admin & Finance)
 NIAB
 Senior Manager (Admin & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद / Hyderabad.

NIAB
Hyderabad

ES020(VG)-Generation of recombinant therapeutics in animal bioreactors for increasing affordability and improvement of human health.

P.L: Mr. Venkateswaran Ganeshan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
598.00	Opening Balance	4,667.00			0.00
3,66,069.00	Grant In Aid	68,666.00	3,50,000.00	Salaries - Manpower	70,000.00
0.00	Other Receipts	0.00	7,000.00	Consumables	3,333.00
0.00		0.00	5,000.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
3,66,667.00		73,333.00	3,62,000.00		73,333.00
0.00	Excess of Expenditure over Income	0.00	4,667.00	Closing Balance	0.00
3,66,667.00		73,333.00	3,66,667.00		73,333.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. शर्मा / Dr. G. Taru Sharma
निदेशक / Director

राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२ / Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद / Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सिニアयर मैनेजर (ऑफिस और वित्त)
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
हैदराबाद / Hyderabad.

NIAB
Hyderabad
FS021(SD)-CSIR-UGC
P.L:Mr.Sunny Deval

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	16,044.00		0.00
20,000.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	3,956.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
20,000.00		0.00	20,000.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
20,000.00		0.00	20,000.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant

M. No. 221442

UDIN: 232214428GVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ। जी। तरु शर्मा/Dr. G. Taru Sharma
 निदेशक/Director

राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

सीनियर मैनेजर (एडमिन. एंड फाइनेंस)
 हार्जित सिंह/Harjit Singh
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

FS023 (NH-SERB)

P.J.Dr.Neelima Hosamani

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
11,124.00	Opening Balance	11,124.00			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
11,124.00		11,124.00	0.00		0.00
	Excess of Expenditure over Income		11,124.00	Closing Balance	11,124.00
11,124.00		11,124.00	11,124.00		11,124.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. गुरुशर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान (एन आइ ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


हरजित सिंह/Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
इ. जगदीश/I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad
FS024(RK)-DBT-JRF
P.I: Mr. Rishi Kumar


Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
15,002.00	Opening Balance	48,353.00			0.00
6,51,000.00	Grant In Aid	4,37,437.00	5,85,450.00	Salaries - Manpower	4,27,987.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	32,199.00	Contingencies	10,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
6,66,002.00		4,85,790.00	6,17,649.00		4,37,987.00
	Excess of Expenditure over Income	0.00	48,353.00	Closing Balance	47,803.00
6,66,002.00		4,85,790.00	6,66,002.00		4,85,790.00


Dr G Taru Sharma
 Director
 NIAB

डॉ. गी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 इंदिरावती-५०० ०३२ / Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 232214428GVWQK9638
 Date: 01/05/2023


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

हरजित सिंह / Harjit Singh
 सहायक निदेशक (प्रशासन व वित्त)
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 इंदिरावती / Hyderabad.


Jagadeesh
 Manager (Office & Finance)
 NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 इंदिरावती / Hyderabad.

NIAB
Hyderabad
FS025(PC)-DBT-JRF
P.I:Ms.Priva Gupta

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	3,651.00	Opening Balance	28.00
6,50,948.00	Grant In Aid	4,85,871.00	6,06,000.00	Salaries - Manpower	4,55,871.00
0.00	Other Receipts	0.00	9,964.00	Consumables	0.00
0.00		0.00	31,361.00	Contingencies	11,200.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
6,50,948.00		4,85,871.00	6,50,976.00		4,67,099.00
28.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	18,772.00
6,50,976.00		4,85,871.00	6,50,976.00		4,85,871.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. रू. शर्मा / Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सीनियर मैनेजर (एडमिन & फाइनेंस)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद, Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad
FS026(SN)-ICMR
P.I:Ms.Swapna N

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
20,000.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	10,000.00	Consumables	0.00
0.00		0.00	10,000.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
20,000.00		0.00	20,000.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
20,000.00		0.00	20,000.00		0.00

For CHARY AND CO
Chartered Accountants
FR No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. शर्मा / Dr. G. Taru Sharma
 निदेशक/Director
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
 सहायक निदेशक (प्रशासन व वित्त)
 Senior Manager (Admin & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

FS027(KRA)-DBT- JRF

P.I: Ms. Kalyani Rajendra Aswale

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
28,552.00	Opening Balance	1,29,552.00			0.00
6,51,000.00	Grant In Aid	4,72,064.00	5,36,000.00	Salaries - Manpower	5,12,065.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00	14,000.00	Contingencies	29,842.00
0.00		0.00		Travel	9,749.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
6,79,552.00		6,01,616.00	5,50,000.00		5,51,656.00
0.00	Excess of Expenditure over Income	0.00	1,29,552.00	Closing Balance	49,960.00
6,79,552.00		6,01,616.00	6,79,552.00		6,01,616.00

For CHARY AND CO

Chartered Accountants

F R No. 0141025

M S Appala Chary

Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ। जी। तरु शर्मा/Dr. G. Taru Sharma

निदेशक/Director

राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान (एन आई ए बी)

National Institute of Animal Biotechnology (NIAB)

पिनकोड-५०० ०३३/Hyderabad-500 032.

Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

हरजित सिंह/Harjit Singh

Senior Manager (Admin & Finance)

National Institute of Animal Biotechnology

Hyderabad/Hyderabad.

I Jagadeesh

Manager (Office & Finance)

NIAB

ऐ. जगदीश/I Jagadeesh

प्रबंधक (कार्यालय और वित्त)

Manager (Office & Finance)

राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान

National Institute of Animal Biotechnology (NIAB)

हैदराबाद/Hyderabad.

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
30,784.00	Opening Balance	36,737.00			0.00
6,51,000.00	Grant In Aid	4,66,667.00	6,06,000.00	Salaries - Manpower	4,36,667.00
0.00	Other Receipts	0.00	10,900.00	Consumables	0.00
0.00		0.00	28,147.00	Contingencies	27,418.00
0.00		0.00	0.00	Travel	21,254.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
6,81,784.00	Excess of Expenditure over Income	5,03,404.00	6,45,047.00	Closing Balance	4,85,339.00
0.00		0.00	36,737.00		18,065.00
6,81,784.00		5,03,404.00	6,81,784.00		5,03,404.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा
निदेशक/डायरेक्टर
राष्ट्रीय पशु वैद्यकीय संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
विमानमार्ग-५०० ०३३/Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ए. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यकीय संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/ Sr. Manager (Admin & Finance)
NIAB
राष्ट्रीय पशु वैद्यकीय संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

NIAB
Hyderabad
FS029(AR)-DST-INSPIRE FELLOWSHIP
P.I.: Ms. Akanksha Roberts

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
29,760.00	Opening Balance	33.00			0.00
3,62,240.00	Grant In Aid	4,40,000.00	3,72,000.00	Salaries - Manpower	3,85,000.00
0.00	Other Receipts	0.00	606.00	Consumables	0.00
0.00		0.00	19,361.00	Contingencies	20,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
3,92,000.00		4,40,033.00	3,91,967.00		4,05,000.00
0.00	Excess of Expenditure over Income	0.00	33.00	Closing Balance	35,033.00
3,92,000.00		4,40,033.00	3,92,000.00		4,40,033.00

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. शर्मा / Dr. G. Taru Sharma
निदेशक / Director
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३३ / Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सीनियर मैनेजर (एडमिनिस्ट्रेशन & फाइनेंस)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद, India

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद / Hyderabad.

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00	188.00		0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	-	Contingencies	0.00
0.00		0.00	188.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		0.00	0.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
0.00		0.00	0.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
NIAB

राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (सं. आर्. ए. बी.)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३३/Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
सीनियर मैनेजर (अधिनियंत्रण और वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

FS031(MA)-DBT-Research Associate-I

P.I: Dr. Madhavi Annamandeni

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
21,901.00	Opening Balance	0.00			0.00
8,34,920.00	Grant In Aid	0.00	4,92,528.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	3,64,293.00	Transfer of Funds	0.00
8,56,821.00		0.00	8,56,821.00		0.00
	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
8,56,821.00		0.00	8,56,821.00		0.00

For CHARTY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

निदेशक
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

प्रबन्धक (कार्यालय और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB


Hyderabad

FS032(PS)-CSIR - Fellowship

P.I.: Ms. Purna Saini

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
159.00	Opening Balance	159.00			0.00
0.00	Grant In Aid	19,841.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	20,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
159.00		20,000.00	0.00		20,000.00
0.00	Excess of Expenditure over Income	0.00	159.00	Closing Balance	0.00
159.00		20,000.00	159.00		20,000.00


Dr G Taru Sharma
 Director
 NIAB
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

For CHARY AND CO
 Chartered Accountants
 F R No. 014102S


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVM/QK9638
 Date: 01/05/2023


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 ऐ. जादेश/ I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 हरजीत सिंह/Harjit Singh
 सीनियर मैनेजर (एडमिन & फाइनेंस)
 Senior Manager (Admin & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद/Hyderabad.

**NIAB
Hyderabad**
FS033(MRP)-CSIR-Fellowship
P.I: Mr. Manas Ranjan Praharaj
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
19.00	Opening Balance	19.00			0.00
18,282.00	Grant In Aid	1,680.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	1,699.00
0.00		0.00	18,282.00	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
18,301.00		1,699.00	18,282.00		1,699.00
0.00	Excess of Expenditure over Income	0.00	19.00	Closing Balance	0.00
18,301.00		1,699.00	18,301.00		1,699.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025
M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023
Dr G Taru Sharma
Director
NIAB
Dr. G. Taru Sharma
Director
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान (एन आई एबी)
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032
I Jagadeesh
Manager (Office & Finance)
NIAB
ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad
Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
हरजित सिंह / Harjit Singh
सीनियर मैनेजर (प्रशासन और वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad

**NIAB
Hyderabad**

FS034(SM)-CSIR - Fellowship

P.I. Mr. Subhasis Mahari

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	1.00			0.00
20,000.00	Grant In Aid	20,000.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00	19,999.00	Contingencies	19,995.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
20,000.00		20,001.00	19,999.00		19,995.00
0.00	Excess of Expenditure over Income	0.00	1.00	Closing Balance	6.00
20,000.00		20,001.00	20,000.00		20,001.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डा. जी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आइ ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३४ / Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
 सहायक निदेशक (प्रशासनिक व वित्त)
 Senior Manager (Admin & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद / Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad

**NIAB
Hyderabad**

FS035(PJM)-CSIR - Fellowship

P.I: Ms. Pagala Jasmeen

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
186.00	Opening Balance	186.00			0.00
0.00	Grant in Aid	25,031.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	991.00
0.00		0.00		Contingencies	24,200.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
186.00		25,217.00	0.00		25,191.00
0.00	Excess of Expenditure over Income	0.00	186.00	Closing Balance	26.00
186.00		25,217.00	186.00		25,217.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary -
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
डायरेक्टर
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
पेठगाँव-400 082/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Senior Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
रेजिस्ट्रार/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

FS036(KJ)-Identification and characterization of novel host targets for developing improved therapeutics for the zoonotic disease, Brucellosis.

P.I: Mrs. Kiranmai Joshi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
748.00	Opening Balance	0.00		Opening Balance	18.00
5,40,005.00	Grant In Aid	8,29,736.00	5,20,800.00	Salaries - Manpower	7,09,671.00
0.00	Other Receipts	0.00	9,971.00	Consumables	0.00
0.00		0.00	10,000.00	Contingencies	27,479.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
5,40,753.00		8,29,736.00	5,40,771.00		7,37,168.00
18.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	92,568.00
5,40,771.00		8,29,736.00	5,40,771.00		8,29,736.00

For CHARY AND CO

Chartered Accountants

F R No. 0141025

M S Appala Chary,
Chartered Accountant,

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma

Director

NIAB

निदेशक/Dr. G. Taru Sharma
राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान (एन आई ए बी)
National Institute of Animal Biotechnology (NIAB)
प्रस्तावित-५०० २३२/Hyderabad-500 032.

Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

I Jagadeesh

Manager (Office & Finance)

NIAB

ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**
FS037(SSN)-ICMR
P.I: Mr. Sagar Shrikishna Narlawar
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
3.00	Opening Balance	66.00			0.00
4,15,997.00	Grant In Aid	4,39,934.00	3,96,000.00	Salaries - Manpower	4,20,000.00
0.00	Other Receipts	0.00	11,713.00	Consumables	12,970.00
0.00		0.00	8,221.00	Contingencies	6,997.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
4,16,000.00		4,40,000.00	4,15,934.00		4,39,967.00
	Excess of Expenditure over Income	0.00	66.00	Closing Balance	33.00
4,16,000.00		4,40,000.00	4,16,000.00		4,40,000.00

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**
**M S Appala Chary
Chartered Accountant
M. No. 221442**
**UDIN: 232214428GVWQK9638
Date: 01/05/2023**
**Dr G Taru Sharma
Director
NIAB**

 डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 प्लॉट-4, 00 032 / Hyderabad-500 032.

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**




 हरजित सिंह (एडमिन & फाइनेंस)
 Senior Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

**I Jagadeesh
Manager (Office & Finance)
NIAB**

 ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

NIAB
Hyderabad
FS038/KCR-ICMR
P.I: Mr. Khandavalli Chitti Raju
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
38,188.00	Opening Balance	5,208.00			0.00
3,85,812.00	Grant In Aid	3,19,115.00	4,03,000.00	Salaries - Manpower	3,09,323.00
0.00	Other Receipts	0.00	0.00	Consumables	9,858.00
0.00		0.00	15,792.00	Contingencies	5,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
4,24,000.00		3,24,323.00	4,18,792.00		3,24,181.00
0.00	Excess of Expenditure over Income	0.00	5,208.00	Closing Balance	142.00
4,24,000.00		3,24,323.00	4,24,000.00		3,24,323.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025
M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB
Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB
Dr. Jagadeesh / I. Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
Harjit Singh
Senior Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

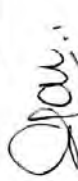
**NIAB
Hyderabad**

FS039(PLR)-Improving gene editing with twin technologies- CRISPR & Reverse Genetics

P.I: Mr. Pachineela Lakshmana Rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,833.00	Opening Balance	9.00			0.00
4,34,163.00	Grant In Aid	73,333.00	4,20,000.00	Salaries - Manpower	70,000.00
0.00	Other Receipts	0.00	8,188.00	Consumables	3,332.00
0.00		0.00	11,799.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
4,39,996.00	Excess of Expenditure over Income	73,342.00	4,39,987.00		73,332.00
0.00		0.00	9.00	Closing Balance	10.00
4,39,996.00		73,342.00	4,39,996.00		73,342.00


Dr G Taru Sharma
Director
NIAB


Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB
ऐ. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

NIAB
Hyderabad
FS040-DBT-SRF
P.I: Dr Himadri Medhi
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
19,880.00	Opening Balance	69,079.00			0.00
7,64,240.00	Grant In Aid	1,14,880.00	6,87,270.00	Salaries - Manpower	1,68,103.00
0.00	Other Receipts	0.00	16,452.00	Consumables	0.00
0.00		0.00	11,319.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
7,84,120.00		1,83,959.00	7,15,041.00		1,68,103.00
0.00	Excess of Expenditure over Income	0.00	69,079.00	Closing Balance	15,856.00
7,84,120.00		1,83,959.00	7,84,120.00		1,83,959.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Plot No. 4, 5 & 6, 3rd Stage, 500 032, Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Plot No. 4, 5 & 6, 3rd Stage, 500 032, Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB
Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Plot No. 4, 5 & 6, 3rd Stage, 500 032, Hyderabad

NIAB
Hyderabad
FS041(AS)-CSIR-UGC
P.I:Mr.Akash.S

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	2.00			0.00
20,000.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00	19,998.00	Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
20,000.00		2.00	19,998.00		0.00
0.00	Excess of Expenditure over Income	0.00	2.00	Closing Balance	2.00
20,000.00		2.00	20,000.00		2.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. टी. रू. शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 पिनकोड-५०० ०३२ / Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
 सी. मैनेजर (एडमिन. & फाइनेंस)
 राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 मैनेजर (ऑफिस & फाइनेंस)
 राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

NIAB
Hyderabad

FS042(MV)-ICMR-SRF

P.I: Mr. Macha Vijay

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00		Opening Balance	800.00
5,40,800.00	Grant In Aid	0.00	5,20,800.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	2,000.00	Consumables	0.00
0.00		0.00	18,800.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
5,40,800.00		0.00	5,41,600.00		800.00
800.00	Excess of Expenditure over Income	800.00	0.00	Closing Balance	0.00
5,41,600.00		800.00	5,41,600.00		800.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Jalgaon-Bhopal Road 033/Hyderabad-500 052.

I Jagadeesh
Manager (Office & Finance)
NIAB

Dr. Jagadeesh I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

NIAB
Hyderabad
FS043(RRG)-ICMR-SRF

P.E: Mr. Rajkumar Ramesh Gurupwar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	72,537.00			0.00
4,40,000.00	Grant In Aid	4,37,463.00	3,48,833.00	Salaries - Manpower	4,20,000.00
0.00	Other Receipts	0.00	18,630.00	Consumables	19,851.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
4,40,000.00		5,10,000.00	3,67,463.00		4,39,851.00
	Excess of Expenditure over Income			Closing Balance	70,149.00
0.00		0.00	72,537.00		
4,40,000.00		5,10,000.00	4,40,000.00		5,10,000.00

For CHARY AND CO

Chartered Accountants

F R No. 014102S

M S Appala Chary

Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023


Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032


I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
हर्जित सिंह/Harjit Singh
Senior Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad

NIAB
Hyderabad
FS044(AT)-JRF(RSP) CSIR Scheme
P.I: Ms. Ambati Tejaswi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
17,041.00	Grant In Aid	20,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	673.00	Consumables	8,068.00
0.00		0.00	16,368.00	Contingencies	11,932.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
17,041.00		20,000.00	17,041.00		20,000.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
17,041.00		20,000.00	17,041.00		20,000.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442

UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 हैदराबाद/Hyderabad

NIAB
Hyderabad
FS045(AR)-DBT RAI(IISC)
P.I:Dr.Anandhi.R

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00		Opening Balance	12,999.00
7,36,200.00	Grant In Aid	7,79,120.00	6,99,360.00	Salaries - Manpower	7,15,960.00
0.00	Other Receipts	0.00	35,339.00	Consumables	43,950.00
0.00		0.00	14,500.00	Contingencies	6,050.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
7,36,200.00		7,79,120.00	7,49,199.00		7,78,959.00
12,999.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	161.00
7,49,199.00		7,79,120.00	7,49,199.00		7,79,120.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

Dr. Jagadeesh / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

NIAB
Hyderabad
FS046(SS)-CSIR Fellowship
P.I: Mr. Shivam Saini

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	174.00			0.00
28,986.00	Grant In Aid	11,552.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	246.00	Consumables	49.00
0.00		0.00	28,566.00	Contingencies	11,676.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
28,986.00		11,726.00	28,812.00		11,725.00
0.00	Excess of Expenditure over Income	0.00	174.00	Closing Balance	1.00
28,986.00		11,726.00	28,986.00		11,726.00

For CHARY AND CO
 Chartered Accountants
 F R No. 014102S

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad

**NIAB
Hyderabad**

FS047(NK)-CSIR Fellowship

P.I: Ms. Niti Kumari

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	48.00			0.00
28,877.00	Grant In Aid	11,678.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00	3,877.00	Consumables	0.00
0.00		0.00	24,952.00	Contingencies	11,678.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
28,877.00		11,726.00	28,829.00		11,678.00
0.00	Excess of Expenditure over Income	0.00	48.00	Closing Balance	48.00
28,877.00		11,726.00	28,877.00		11,726.00

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**

**M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023**

**Dr G Taru Sharma
Director
NIAB**

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

**I Jagadeesh
Manager (Office & Finance)
NIAB**

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB

Hyderabad

FS048(SPB)-Nanoliposome mediated co-delivery of PTEN plasmid and plumbagin drug for the treatment of hepatic cancer using 3D spheroid model.

P.I: Miss. Smiti Parimalbhai Bhagat

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	143.00			0.00
2,20,000.00	Grant In Aid	4,39,857.00	2,10,000.00	Salaries - Manpower	4,20,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	9,857.00	Contingencies	20,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
2,20,000.00		4,40,000.00	2,19,857.00		4,40,000.00
0.00	Excess of Expenditure over Income	0.00	143.00	Closing Balance	0.00
2,20,000.00		4,40,000.00	2,20,000.00		4,40,000.00


Dr G Taru Sharma
 Director
 NIAB
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

For CHARY AND CO
 Chartered Accountants
 F R No. 014102S


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 सहायक प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NIAB

Hyderabad

FS049-DBT-JRF

P.I: Ms. Anjali Kumari(AK)

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	21,452.00			0.00
2,87,452.00	Grant In Aid	4,02,000.00	2,66,000.00	Salaries - Manpower	3,72,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	41,098.00
0.00		0.00	0.00	Travel	11,321.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
2,87,452.00		4,23,452.00	2,66,000.00		4,24,419.00
	Excess of Expenditure over Income	967.00	21,452.00	Closing Balance	0.00
2,87,452.00		4,24,419.00	2,87,452.00		4,24,419.00


Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad
FS050(VVK)-CSIR-UGC
P.I: Mr. Vanamamalai Venkata Krishna
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	2.00			0.00
36,556.00	Grant In Aid	24,986.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	1,556.00	Consumables	0.00
0.00		0.00	34,998.00	Contingencies	24,986.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
36,556.00		24,986.00	36,554.00		24,986.00
0.00	Excess of Expenditure over Income	0.00	2.00	Closing Balance	0.00
36,556.00		24,986.00	36,556.00		24,986.00



Dr G Taru Sharma
 Director
 NIAB


Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032


For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023




Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB


Harjit Singh
 Sr. Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad


Jagadeesh
 Manager (Office & Finance)
 NIAB


Jagadeesh
 Manager (Office & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad

NIAB
Hyderabad

FS051(BB)-ICMR-JRF

P.I: Ms. Bhawna Baloda

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	163.00			0.00
2,36,042.00	Grant In Aid	3,91,837.00	2,24,000.00	Salaries - Manpower	3,72,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	11,879.00	Contingencies	19,974.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
2,36,042.00		3,92,000.00	2,35,879.00		3,91,974.00
0.00	Excess of Expenditure over Income	0.00	163.00	Closing Balance	26.00
2,36,042.00		3,92,000.00	2,36,042.00		3,92,000.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology
Hyderabad/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

NIAB
Hyderabad
FS052(IJ)-CSIR-UGC
P.I: Ms. Itishree Jali

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	350.00			0.00
28,384.00	Grant In Aid	11,616.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	558.00
0.00		0.00	28,034.00	Contingencies	11,408.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
28,384.00		11,966.00	28,034.00		11,966.00
0.00	Excess of Expenditure over Income	0.00	350.00	Closing Balance	0.00
28,384.00		11,966.00	28,384.00		11,966.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB
ऐ. जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

**NIAB
Hyderabad**

FS053(MR)-CSIR-Fellowship

P.I: Ms. Mood Rajitha

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
20,000.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00	20,000.00	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
20,000.00		0.00	20,000.00		0.00
	Excess of Expenditure over Income	0.00			
0.00		0.00		Closing Balance	0.00
20,000.00		0.00	20,000.00		0.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

NIAB
Hyderabad

FS054(SS)-CSIR-Fellowship

P.L:Ms.Sakshi Singh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	16,329.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	319.00
0.00		0.00	0.00	Contingencies	16,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		16,329.00	0.00		16,319.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	10.00
0.00		16,329.00	0.00		16,329.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

Dr. Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यकशास्त्रीय संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad/Hyderabad

NIAB
Hyderabad

FS055(NP)-DBT-JRF

P.I:Mr.Naveenprasath T

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	5,46,050.00	0.00	Salaries - Manpower	5,05,300.00
0.00	Other Receipts	0.00	0.00	Consumables	19,942.00
0.00		0.00	0.00	Contingencies	5,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		5,46,050.00	0.00		5,30,242.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	15,808.00
0.00		5,46,050.00	0.00		5,46,050.00

Don:

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442

M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager
NIAB

Sr. Manager (Admin & Finance)
NIAB

✓

Jagadeesh
Manager (Office & Finance)
NIAB

ए. जादवीश/1 Jagadeesh
प्रबंधक (कायलय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद (Hyderabad).

NIAB
Hyderabad

FS056(DP)-DBT-JRF

P.I:Ms.Drisha Prakashan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	4,97,097.00	0.00	Salaries - Manpower	4,60,000.00
0.00	Other Receipts	0.00	0.00	Consumables	10,386.00
0.00		0.00	0.00	Contingencies	10,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00	Excess of Expenditure over Income	4,97,097.00	0.00	Closing Balance	4,80,386.00
0.00		4,97,097.00	0.00		16,711.00
					4,97,097.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary -
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ.जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
सी.एम. (प्रशासनिक और वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

NIAB
Hyderabad
FS057(DM)-DBT-JRF
P.J.Ms.Divya Mehta

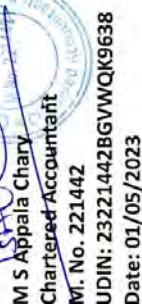
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	5,36,000.00	0.00	Salaries - Manpower	4,96,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	11,500.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		5,36,000.00	0.00		5,07,500.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	28,500.00
0.00		5,36,000.00	0.00		5,36,000.00


Dr G Taru Sharma
Director
NIAB


Dr G Taru Sharma
Principal/Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB


I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad
FS058(KA)-Fellowship-JRF
P.I: Mr. Krishnagaanth M

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	5,38,234.00	0.00	Salaries - Manpower	4,97,033.00
0.00	Other Receipts	0.00	0.00	Consumables	32,448.00
0.00		0.00	0.00	Contingencies	10,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		5,38,234.00	0.00		5,39,481.00
0.00	Excess of Expenditure over Income	1,247.00	0.00	Closing Balance	0.00
0.00		5,39,481.00	0.00		5,39,481.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr G Taru Sharma
 Director
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 Jagadeesh
 Manager (Office & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

FS059(AA)-"Isolation and Characterisation of theranostic aptamers for sensitive detection and neutralization of botulinum toxins".

**NIAB
Hyderabad**

P.I: Dr. Anitha Arumugam

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	6,13,567.00	0.00	Salaries - Manpower	5,96,900.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	16,724.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		6,13,567.00	0.00		6,13,624.00
0.00	Excess of Expenditure over Income	57.00	0.00	Closing Balance	0.00
0.00		6,13,624.00	0.00		6,13,624.00

Dr G Taru Sharma
Director
NIAB
 डॉ. जी. टी. शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
 हरजित सिंह / Harjit Singh
 सিনিअर मैनेजर (एडमिन & फाइनेंस)
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 Hyderabad/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
 ऐ. जगदीश / Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NIAB

Hyderabad

FS060(DR)-CSIR

P.I: Ms. Deepali Rawat

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant in Aid	30,027.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	30,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		30,027.00	0.00		30,000.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	27.00
0.00		30,027.00	0.00		30,027.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जादीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad

NIAB
Hyderabad
FS06I(AM)-CSIR
P.L.Ms. Aradhana Mohanty
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	40,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	31,499.00
0.00		0.00	0.00	Travel	7,495.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		40,000.00	0.00		38,994.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	1,006.00
0.00		40,000.00	0.00		40,000.00

Dr G Taru Sharma
Director
NIAB
 डॉ. जी. तारु शर्मा/Director
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एन आर आर सी)
 National Institute of Animal Biotechnology (NIAB)
 बसोबास-400 032/Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
 हरजित सिंह/Sr. Manager (Admin & Finance)
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 बसोबास/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
 ऐ. जगदीश/I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 बसोबास/Hyderabad.

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	20,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	19,999.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		20,000.00	0.00		19,999.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	1.00
0.00		20,000.00	0.00		20,000.00


I Jagadeesh
Manager (Office & Finance)
NIAB

**NIAB
Hyderabad**

FS063(API)-ICMR-Fellowship

P.L:Mr.Amar Prajapati

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	6,48,666.00	0.00	Salaries - Manpower	4,29,571.00
0.00	Other Receipts	0.00	0.00	Consumables	10,700.00
0.00		0.00	0.00	Contingencies	18,200.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		6,48,666.00	0.00		4,58,471.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	1,90,195.00
0.00		6,48,666.00	0.00		6,48,666.00

Dr G Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014402S

M-S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad
FS064-Fellowship-DST/INSPIRE
P.I: Ms. Sripratyusha Gandham

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	4,92,440.00	0.00	Salaries - Manpower	4,72,440.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	10,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		4,92,440.00	0.00	Closing Balance	4,82,440.00
0.00	Excess of Expenditure over Income	0.00	0.00		10,000.00
0.00		4,92,440.00	0.00		4,92,440.00


Dr G Taru Sharma
 Director
 NIAB


 Director
 NIAB
 National Institute of Animal Biotechnology
 Hyderabad-500 032

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB


 Sr. Manager (Admin & Finance)
 NIAB
 National Institute of Animal Biotechnology
 Hyderabad


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 Manager (Office & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad/Hyderabad.

NIAB
Hyderabad
FS065(JCP)-CSIR-JRF(RSP)

P.I: Mr. Jusail C.P

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	31,014.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	29,940.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		31,014.00	0.00		29,940.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	1,074.00
0.00		31,014.00	0.00		31,014.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

NIAB**Hyderabad****FS066(SG)-DBT-RA****P.I:Dr.Deepshika Gupta****Receipts and Payments Account from 01/04/2022 to 31/03/2023**

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	7,49,360.00	0.00	Salaries - Manpower	6,99,360.00
0.00	Other Receipts	0.00	0.00	Consumables	19,967.00
0.00		0.00	0.00	Contingencies	29,862.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		7,49,360.00	0.00		7,49,189.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	171.00
0.00		7,49,360.00	0.00		7,49,360.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
Dr. Jagadeesh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**
FS067(KA)-DBT-JRF
P.I: Mr. Kartikeya Avadhani
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	1,91,274.00	0.00	Salaries - Manpower	1,77,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		1,91,274.00	0.00		1,77,000.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	14,274.00
0.00		1,91,274.00	0.00		1,91,274.00

Dr G Taru Sharma
Director
NIAB

निदेशक/निदेशक
राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हिदराबाद-500 032

For CHARY AND CO
Chartered Accountants
FR No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

सिंह/सिंह
सि. मैनेजर (अडमिनिस्ट्रेशन & फाइनेंस)
राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
हिदराबाद/हिदराबाद

I Jagadeesh
Manager (Office & Finance)
NIAB

जे. जगदीश/जे. जगदीश
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हिदराबाद/हिदराबाद

NIAB
Hyderabad
FS068(RPR)-DBT-JRF
P.I: Ms. Ramya P.R

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	1,91,274.00	0.00	Salaries - Manpower	1,77,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00	Excess of Expenditure over Income	1,91,274.00	0.00		1,77,000.00
0.00		0.00	0.00	Closing Balance	14,274.00
0.00		1,91,274.00	0.00		1,91,274.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M.S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NIAB

Hyderabad

FS069(IK)-DBT-JRF

P.I.Mr.Ibraiz Kori

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	3,36,081.00	0.00	Salaries - Manpower	3,11,000.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		3,36,081.00	0.00		3,11,000.00
	Excess of Expenditure over Income	0.00	0.00	Closing Balance	25,081.00
0.00		3,36,081.00	0.00		3,36,081.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

I Jagadeesh
Manager (Office & Finance)
NIAB

देवचारी/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यकीय संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

NIAB
Hyderabad

SP002-Characterization of Cell Cycle regulators associated with DNA replication machinery in Toxoplasma Gondii - DST INSPIRE Faculty

P.I: Dr. Abhijit S Deshmukh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
79,829.50	Opening Balance	0.50			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	79,829.00	Transfer of Funds	0.00
79,829.50		0.50	79,829.00		0.00
0.00	Excess of Expenditure over Income	0.00		Closing Balance	0.50
79,829.50		0.50	79,829.50		0.50

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appella Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Principal
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

SP004-Evaluation of Anti-inflammatory Natural Compounds for Therapeutic use in Mastitis of Dairy Animals - NMPB

P.I: Prof P Reddanna & Dr. Paresh Sharma

Receipts and Payments Account from 01/04/2022 to 31/03/2023

**NIAB
Hyderabad**

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	59,628.00			0.00
59,628.00	Grant In Aid	1,13,792.00	0.00	Salaries - Manpower	1,73,420.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
59,628.00		1,73,420.00	0.00		1,73,420.00
0.00	Excess of Expenditure over Income	0.00	59,628.00	Closing Balance	0.00
59,628.00		1,73,420.00	59,628.00		1,73,420.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad

SP016 (VB)-DST INSPIRE FACULTY-Characterization of transglycosylases associated with cell wall biogenesis in Vancomycin resistant *Staphylococcus aureus*

P.I: Dr. Vasundhara Bhandari

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
4,48,254.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00	55,774.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	3,92,480.00	Transfer of Funds	0.00
4,48,254.00		0.00	4,48,254.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
4,48,254.00		0.00	4,48,254.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Director
राष्ट्रीय पशु और जीवविज्ञान संस्थान (पशु और पक्षी)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-५०० ०३३/Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु और जीवविज्ञान संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Sr. Manager (Admin & Finance)
राष्ट्रीय पशु और जीवविज्ञान संस्थान
National Institute of Animal Biotechnology
हैदराबाद/Hyderabad.

NIAB
Hyderabad

SP020(AS)-Evaluation of medicinal plant extracts for anti-tick activity and identification of active compounds

P.I: Dr. Anand Srivastava

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
55,340.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	55,340.00	Transfer of Funds	0.00
55,340.00		0.00	55,340.00		0.00
0.00	Excess of Expenditure over Income	0.00		Closing Balance	0.00
55,340.00		0.00	55,340.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442B8GVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

निदेशक/डायरेक्टर
राष्ट्रीय चरु और पशु आरोग्य विज्ञान संस्थान (NIAB)
Hyderabad-500 042.

I Jagadeesh
Manager (Office & Finance)
NIAB

प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय चरु और पशु आरोग्य विज्ञान संस्थान (NIAB)
Hyderabad.

Harijit Singh
Sr. Manager (Admin & Finance)
NIAB

सि. मैनेजर (ऑफिस और वित्त)
राष्ट्रीय चरु और पशु आरोग्य विज्ञान संस्थान (NIAB)
Hyderabad.

SP022 (NRH)-Development, testing and evaluation of whole and recombinant antigen-based ELISA for monitoring the health of laboratory animals Phase

**NIAB
Hyderabad**

-II-

P.L:Dr. Nagendra R Hegde

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
2,33,487.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	2,33,487.00	Transfer of Funds	0.00
2,33,487.00		0.00	2,33,487.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
2,33,487.00		0.00	2,33,487.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

निदेशक/Dr. G. Taru Sharma
राष्ट्रीय प्रौद्योगिकी संस्थान (एन आर ई आर)
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश /I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह /Harjit Singh
सिニア मैनेजर (ऑफिस और वित्त)
Sr. Manager (Admin & Finance)
NIAB
हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

SP024(SSM)-Genomics for conservation of indigenous cattle breeds and for enhancing milk yield, Phase -I

P.I: Dr Subeer S Majumdar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
6,58,64,545.67	Opening Balance	72,71,370.67			0.00
0.00	Grant In Aid	0.00	1,32,000.00	Salaries - Manpower	0.00
9,03,848.00	Other Receipts	0.00	5,85,24,907.00	Consumables	0.00
0.00		0.00	1,99,643.00	Contingencies	0.00
0.00		0.00	6,40,473.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	72,71,370.67
6,67,68,393.67		72,71,370.67	5,94,97,023.00		72,71,370.67
	Excess of Expenditure over Income	0.00	72,71,370.67	Closing Balance	0.00
6,67,68,393.67		72,71,370.67	6,67,68,393.67		72,71,370.67

Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय पशु जीव विज्ञान संस्थान (पशु आर्य ए. आर.)
 National Institute of Animal Biotechnology (NIAB)
 प्लॉट नं. 406 अ 32 / Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
 सहायक प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जीव विज्ञान संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद / Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ई. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय पशु जीव विज्ञान संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

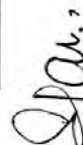
SP025 (SF)-Random and Targeted mutagenesis of zoonotic pathogen Leptospira interrogans: In perspective of vaccine development"

P.I: Dr Syed Mohd Faisal


Receipts and Payments Account from 01/04/2022 to 31/03/2023

NIAB
Hyderabad

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,10,389.60	Opening Balance	1,10,389.60			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	1,10,389.60
1,10,389.60		1,10,389.60	0.00		1,10,389.60
	Excess of Expenditure over Income			Closing Balance	
0.00		0.00	1,10,389.60		0.00
1,10,389.60		1,10,389.60	1,10,389.60		1,10,389.60


Dr G Taru Sharma
 Director
 NIAB

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023


 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 हैदराबाद/Hyderabad.


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB


 Sr. Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

SP026 (SS)-Integrated Biotechnological Approach towards Improvement of Quality and Productivity of Tropical Tasar Silk

**NIAB
Hyderabad**


P.F.Dr Shailesh Sharma

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
94,300.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00	50,000.00	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	44,300.00	Transfer of Funds	0.00
94,300.00		0.00	94,300.00		0.00
0.00	Excess of Expenditure over Income	0.00		Closing Balance	0.00
94,300.00		0.00	94,300.00		0.00


Dr G Taru Sharma
Director
NIAB
राष्ट्रीय प्रभु शैव आधुनिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


CHARY AND CO.
Chartered Accountants
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
राष्ट्रीय प्रभु शैव आधुनिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032.


Jagadeesh
Manager (Office & Finance)
NIAB
राष्ट्रीय प्रभु शैव आधुनिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद-500 032.

NIAB
Hyderabad

SP027(PS)-Aptamer based lateral flow device for the detection of heat or estrous in buffalo

P.I:-Dr.Pankaj Suman

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,44,900.00	Opening Balance	70,181.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
2,710.00	Other Receipts	0.00	63,616.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	13,813.00	Transfer of Funds	70,181.00
1,47,610.00		70,181.00	77,429.00		70,181.00
0.00	Excess of Expenditure over Income	0.00	70,181.00	Closing Balance	0.00
1,47,610.00		70,181.00	1,47,610.00		70,181.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M-S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Telangana-500 032/Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

**NIAB
Hyderabad**

SP028(BD)-The Ramanujan Fellowship

P.J:Dr.Bappaditya Dey

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
91,115.00	Opening Balance	3,86,586.00			0.00
7,45,000.00	Grant In Aid	10,00,000.00		Salaries - Manpower	0.00
6,816.00	Other Receipts	19,418.00	2,16,795.00	Consumables	8,22,386.00
0.00		0.00	0.00	Contingencies	3,29,674.00
0.00		0.00	0.00	Travel	20,076.00
0.00		0.00	60,000.00	Overheads	60,000.00
0.00		0.00	1,79,550.00	Equipment	1,11,500.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
8,42,931.00		14,06,004.00	4,56,345.00		13,43,636.00
	Excess of Expenditure over Income	0.00	3,86,586.00	Closing Balance	62,368.00
8,42,931.00		14,06,004.00	8,42,931.00		14,06,004.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr G Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

NIAB
Hyderabad

SP029(GKR)-To understand the role of Cytoplasmic linker protein-170 in the down-regulation of TLR4 signaling


P.I: Dr. Girish K Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
2,99,260.00	Opening Balance	2,99,260.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	2,99,260.00
2,99,260.00		2,99,260.00	0.00		2,99,260.00
0.00	Excess of Expenditure over Income	0.00	2,99,260.00	Closing Balance	0.00
2,99,260.00		2,99,260.00	2,99,260.00		2,99,260.00


Dr G Taru Sharma
 Director
 NIAB

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025


M S Appala Chary
 Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023


 Dr. G. Taru Sharma
 Director
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032.


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 हैदराबाद/Hyderabad.


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 हैदराबाद/Hyderabad.


I Jagadeesh
 Manager (Office & Finance)
 NIAB
 राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
 हैदराबाद/Hyderabad.


**NIAB
Hyderabad**

SP030(SSM)-Genome ending for generating semen favoring production of cow.

P.I: Dr. Subeer S Majumdar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
2,13,155.00	Opening Balance	62,321.00			0.00
0.00	Grant In Aid	0.00	1,53,677.00	Salaries - Manpower	0.00
2,843.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	62,321.00
2,15,998.00		62,321.00	1,53,677.00		62,321.00
0.00	Excess of Expenditure over Income	0.00	62,321.00	Closing Balance	0.00
2,15,998.00		62,321.00	2,15,998.00		62,321.00


Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.


I Jagadeesh
Manager (Office & Finance)
NIAB
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु जैव औद्योगिकी संस्थान
हैदराबाद/Hyderabad.


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
श्रीमान हरजित सिंह
जूनियर मैनेजर (अधिनियम व वित्त)
राष्ट्रीय पशु जैव औद्योगिकी संस्थान
हैदराबाद/Hyderabad.

SP031(HBD)-Unraveling Molecular Mechanisms of Homologues recombination and Germ cell maintenance to prevent Birth Defects, Extend Human and livestock Fertility.

P.I: Dr.HBD Prasada Rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
35,054.68	Opening Balance	1,62,969.68			0.00
4,95,003.00	Grant In Aid	5,00,000.00	0.00	Salaries - Manpower	0.00
6,285.00	Other Receipts	2,558.00	3,19,396.00	Consumables	4,48,339.00
0.00		0.00	23,919.00	Contingencies	84,174.00
0.00		0.00	0.00	Travel	62,616.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	30,058.00	Transfer of Funds	6,285.00
5,36,342.68		6,65,527.68	3,73,373.00		6,01,414.00
0.00	Excess of Expenditure over Income	0.00	1,62,969.68	Closing Balance	64,113.68
5,36,342.68		6,65,527.68	5,36,342.68		6,65,527.68

For CHARY AND CO
Chartered Accountants
FR No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

Dr. Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

Harijit Singh
Sr. Manager (Admin & Finance)
NIAB

**NIAB
Hyderabad**

SP032(NRH)-DBT-GADVASU Canine Research Centre and Networks.

P.I: Dr. Nagendra R Hegde.

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
16,296.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	16,296.00	Transfer of Funds	0.00
16,296.00		0.00	16,296.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
16,296.00		0.00	16,296.00		0.00


Dr G Taru Sharma
Director
NIAB

डॉ. गी. तारु शर्मा / Dr. G. Taru Sharma
Director / Director
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एन आर आई)
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB
ई. जगदीश / I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद / Hyderabad.

NIAB
Hyderabad
SP033(SSM)-JC Bose National Fellowship
P.I: Dr. Subeer S Majumdar

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
8,52,153.00	Opening Balance	77,418.00			0.00
0.00	Grant In Aid	0.00	58,333.00	Salaries - Manpower	0.00
5,157.00	Other Receipts	0.00	7,21,559.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
8,57,310.00		77,418.00	7,79,892.00		0.00
0.00	Excess of Expenditure over Income		77,418.00	Closing Balance	77,418.00
8,57,310.00		77,418.00	8,57,310.00		77,418.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M.S.Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director, NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 033

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
Dr. Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

SP034(SSM)-An attempt to generate transgenic pig through testicular transgenesis or male germ cell transplantation to enhance productivity.

NIAB
Hyderabad

P.I:Dr.Subeer S Majumdar
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
3,63,574.00	Opening Balance	31,437.00			0.00
0.00	Grant In Aid	0.00	1,12,000.00	Salaries - Manpower	0.00
4,145.00	Other Receipts	412.00	1,86,661.00	Consumables	0.00
0.00		0.00	1,350.00	Contingencies	0.00
0.00		0.00	36,271.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	17,348.00
3,67,719.00		31,849.00	3,36,282.00		17,348.00
0.00	Excess of Expenditure over Income	0.00	31,437.00	Closing Balance	14,501.00
3,67,719.00		31,849.00	3,67,719.00		31,849.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

I Jagadeesh
Manager (Office & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

रैजदेव/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
NIAB
राष्ट्रीय पशु वैद्य शैक्षणिक संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

हरजित सिंह
सि. मैनेजर (अडमिन. & फाइनेंस)
NIAB
राष्ट्रीय पशु वैद्य शैक्षणिक संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad
SP035(P5)-Development of point-of-care diagnostics for detection of venom proteins of Naja Naja Cobra and Bungarus caeruleus Krait in envenomed animals.

P.I: Dr. Pankaj Suman

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.33	Opening Balance	0.33			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.33		0.33	0.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.33	Closing Balance	0.33
0.33		0.33	0.33		0.33

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Plot No. 428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000/1001/1002/1003/1004/1005/1006/1007/1008/1009/1010/1011/1012/1013/1014/1015/1016/1017/1018/1019/1020/1021/1022/1023/1024/1025/1026/1027/1028/1029/1030/1031/1032/1033/1034/1035/1036/1037/1038/1039/1040/1041/1042/1043/1044/1045/1046/1047/1048/1049/1050/1051/1052/1053/1054/1055/1056/1057/1058/1059/1060/1061/1062/1063/1064/1065/1066/1067/1068/1069/1070/1071/1072/1073/1074/1075/1076/1077/1078/1079/1080/1081/1082/1083/1084/1085/1086/1087/1088/1089/1090/1091/1092/1093/1094/1095/1096/1097/1098/1099/1100/1101/1102/1103/1104/1105/1106/1107/1108/1109/1110/1111/1112/1113/1114/1115/1116/1117/1118/1119/1120/1121/1122/1123/1124/1125/1126/1127/1128/1129/1130/1131/1132/1133/1134/1135/1136/1137/1138/1139/1140/1141/1142/1143/1144/1145/1146/1147/1148/1149/1150/1151/1152/1153/1154/1155/1156/1157/1158/1159/1160/1161/1162/1163/1164/1165/1166/1167/1168/1169/1170/1171/1172/1173/1174/1175/1176/1177/1178/1179/1180/1181/1182/1183/1184/1185/1186/1187/1188/1189/1190/1191/1192/1193/1194/1195/1196/1197/1198/1199/1200/1201/1202/1203/1204/1205/1206/1207/1208/1209/1210/1211/1212/1213/1214/1215/1216/1217/1218/1219/1220/1221/1222/1223/1224/1225/1226/1227/1228/1229/1230/1231/1232/1233/1234/1235/1236/1237/1238/1239/1240/1241/1242/1243/1244/1245/1246/1247/1248/1249/1250/1251/1252/1253/1254/1255/1256/1257/1258/1259/1260/1261/1262/1263/1264/1265/1266/1267/1268/1269/1270/1271/1272/1273/1274/1275/1276/1277/1278/1279/1280/1281/1282/1283/1284/1285/1286/1287/1288/1289/1290/1291/1292/1293/1294/1295/1296/1297/1298/1299/1300/1301/1302/1303/1304/1305/1306/1307/1308/1309/1310/1311/1312/1313/1314/1315/1316/1317/1318/1319/1320/1321/1322/1323/1324/1325/1326/1327/1328/1329/1330/1331/1332/1333/1334/1335/1336/1337/1338/1339/1340/1341/1342/1343/1344/1345/1346/1347/1348/1349/1350/1351/1352/1353/1354/1355/1356/1357/1358/1359/1360/1361/1362/1363/1364/1365/1366/1367/1368/1369/1370/1371/1372/1373/1374/1375/1376/1377/1378/1379/1380/1381/1382/1383/1384/1385/1386/1387/1388/1389/1390/1391/1392/1393/1394/1395/1396/1397/1398/1399/1400/1401/1402/1403/1404/1405/1406/1407/1408/1409/1410/1411/1412/1413/1414/1415/1416/1417/1418/1419/1420/1421/1422/1423/1424/1425/1426/1427/1428/1429/1430/1431/1432/1433/1434/1435/1436/1437/1438/1439/1440/1441/1442/1443/1444/1445/1446/1447/1448/1449/1450/1451/1452/1453/1454/1455/1456/1457/1458/1459/1460/1461/1462/1463/1464/1465/1466/1467/1468/1469/1470/1471/1472/1473/1474/1475/1476/1477/1478/1479/1480/1481/1482/1483/1484/1485/1486/1487/1488/1489/1490/1491/1492/1493/1494/1495/1496/1497/1498/1499/1500/1501/1502/1503/1504/1505/1506/1507/1508/1509/1510/1511/1512/1513/1514/1515/1516/1517/1518/1519/1520/1521/1522/1523/1524/1525/1526/1527/1528/1529/1530/1531/1532/1533/1534/1535/1536/1537/1538/1539/1540/1541/15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**NIAB
Hyderabad**

SP036(NG)-Feasibility of producing cattle gonadotropins in milk of rabbit by invivo gene transfection


P.I: Dr. Nirmalya Ganguli

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
13,03,027.00	Opening Balance	94,606.00			0.00
0.00	Grant In Aid	0.00	2,76,167.00	Salaries - Manpower	0.00
21,600.00	Other Receipts	0.00	8,65,669.00	Consumables	0.00
0.00		0.00	88,185.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	94,606.00
13,24,627.00	Excess of Expenditure over Income	94,606.00	12,30,021.00		94,606.00
0.00		0.00	94,606.00	Closing Balance	0.00
13,24,627.00		94,606.00	13,24,627.00		94,606.00


Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BVGWQK9638
Date: 01/05/2023


I Jagadeesh
Manager (Office & Finance)
NIAB
पैकालीस/1 Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्य आनुवंशिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

**NIAB
Hyderabad**

SP037(NG)-Establishment of goat mammary epithelial/stem cell lines for the production of pharmaceutical interest proteins

P.I: Dr. Nirmalya Ganguli

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,82,138.71	Opening Balance	1,24,419.71			0.00
0.00	Grant In Aid	0.00	1,72,426.00	Salaries - Manpower	0.00
9,672.00	Other Receipts	0.00	2,94,965.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	1,380.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	1,23,039.71
5,91,810.71		1,24,419.71	4,67,391.00		1,24,419.71
0.00	Excess of Expenditure over Income	0.00	1,24,419.71	Closing Balance	0.00
5,91,810.71		1,24,419.71	5,91,810.71		1,24,419.71

[Signature]

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Plot No. 50, 50A & 50B, Phase II, Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025

[Signature]
M-S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

[Signature]

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

[Signature]

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

SP038(VB)-To investigate the mechanisms regulating the enigmatic Oxacillin susceptible mecA positive phenotype in the clinical isolates of staphylococcus aureus.

NIAB
Hyderabad

P.I.: Dr. Vasundhara Bhandari

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
2,58,772.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00		Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	2,58,772.00	Transfer of Funds	0.00
2,58,772.00		0.00	2,58,772.00		0.00
	Excess of Expenditure over Income	0.00		Closing Balance	0.00
2,58,772.00		0.00	2,58,772.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M.S.Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BVGWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

निदेशक/Dr. G. Taru Sharma
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एनआईएबी)
National Institute of Animal Biotechnology (NIAB)
एनआईएबी-500 032, हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

सि.एम.ए.डी./Harjit Singh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ए. जगदीश/I. Jagadeesh
प्रबंधक (कार्यालय और वित्त)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
हैदराबाद/Hyderabad.

NIAB
Hyderabad
SP039(SF)-Development of Novel Mucosal Delivery System and Testing its Efficacy Against Salmonella Infection

P.I: Dr. Syed Mohd Faisal

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
51,746.00	Opening Balance	3,237.00			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
388.00	Other Receipts	0.00	48,897.00	Consumables	0.00
0.00		0.00		Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
52,134.00		3,237.00	48,897.00		0.00
0.00	Excess of Expenditure over Income	0.00	3,237.00	Closing Balance	3,237.00
52,134.00		3,237.00	52,134.00		3,237.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BQVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 B-5, R-1, A-2, B-1, Hyderabad-500 032.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad/Hyderabad.

I Jagadeesh
 Manager (Office & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad/Hyderabad.

**NIAB
Hyderabad**

SP040(NRH)-Chicken or egg: Drivers of antimicrobial resistance in poultry in India

P.I: Dr. Nagendra R. Hegde

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
70,07,422.00	Opening Balance	62,71,366.00			0.00
14,46,048.00	Grant In Aid	0.00	10,35,648.00	Salaries - Manpower	1,36,453.00
1,56,916.00	Other Receipts	1,50,398.00	10,37,508.00	Consumables	11,42,390.00
0.00		0.00	30,297.00	Contingencies	6,644.00
0.00		0.00	23,495.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	2,12,072.00	Transfer of Funds	1,56,916.00
86,10,386.00		64,21,764.00	23,39,020.00		14,42,403.00
0.00	Excess of Expenditure over Income	0.00	62,71,366.00	Closing Balance	49,79,361.00
86,10,386.00		64,21,764.00	86,10,386.00		64,21,764.00

Dr G Taru Sharma
Director
NIAB

निदेशक/निदेशिका
राष्ट्रीय प्रौद्योगिकी संस्थान (पशु और पक्षी)
National Institute of Animal Biotechnology (NIAB)
Baramsa-A-500 032/Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

सि. प्रबन्धक (कार्यालय और वित्त)
राष्ट्रीय प्रौद्योगिकी संस्थान (पशु और पक्षी)
National Institute of Animal Biotechnology (NIAB)
Baramsa-A-500 032/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/ I Jagadeesh
प्रबन्धक (कार्यालय और वित्त)
राष्ट्रीय प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
Baramsa-A-500 032/Hyderabad.

NIAB
Hyderabad
SP041(GKR)-Understanding the mechanism of host innate immune suppression by the Brucella effector protein, TspB to identify novel drug targets for brucellosis.

P.I: Dr. Girish K Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
79,611.00	Opening Balance	81,840.00			0.00
0.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
2,229.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	81,840.00
81,840.00		81,840.00	0.00		81,840.00
0.00	Excess of Expenditure over Income		81,840.00	Closing Balance	0.00
81,840.00		81,840.00	81,840.00		81,840.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

डा. गी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय माणु और जीवप्रौद्योगिकी संस्थान (वाराणसी) (NIAB)
 National Institute of Animal Biotechnology (NIAB)
 कलकत्ता-400 ०३३ / Hyderabad-500 032.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

हरजित सिंह / Harjit Singh
 सहायक निदेशक (प्रशासन और वित्त)
 राष्ट्रीय माणु और जीवप्रौद्योगिकी संस्थान (वाराणसी)
 National Institute of Animal Biotechnology (NIAB)
 कलकत्ता-400 ०३३ / Hyderabad-500 032.

I Jagadeesh
 Manager (Office & Finance)
 NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 राष्ट्रीय माणु और जीवप्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

SP042(MS)-Molecular platform for pidemiology, disease mapping and development of diagnostics for economically important diseases of ducks.

NIAB
Hyderabad

P-1: Dr. Madhuri Subbiah

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,73,760.00	Opening Balance	81,126.00			0.00
0.00	Grant In Aid	0.00	1,53,741.00	Salaries - Manpower	50,000.00
10,721.00	Other Receipts	1,934.00	3,32,722.00	Consumables	0.00
0.00		0.00	4,000.00	Contingencies	930.00
0.00		0.00	11,983.00	Travel	10,262.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	909.00	Transfer of Funds	10,721.00
5,84,481.00	Excess of Expenditure over Income	83,060.00	5,03,355.00		71,913.00
0.00		0.00	81,126.00	Closing Balance	11,147.00
5,84,481.00		83,060.00	5,84,481.00		83,060.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appara Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 034.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP043(AKG)-Development of injectable nanofibrous implant for oestrus synchronization in cattle.

P.I: Dr. Pankaj Suman

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
19,82,379.00	Opening Balance	5,30,837.00			0.00
2,90,407.00	Grant In Aid	0.00	11,94,658.00	Salaries - Manpower	15,500.00
35,514.00	Other Receipts	0.00	4,56,858.00	Consumables	0.00
0.00		0.00	63,779.00	Contingencies	13,865.00
0.00		0.00	19,626.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	42,542.00	Transfer of Funds	5,01,472.00
23,08,300.00		5,30,837.00	17,77,463.00		5,30,837.00
0.00	Excess of Expenditure over Income	0.00	5,30,837.00	Closing Balance	0.00
23,08,300.00		5,30,837.00	23,08,300.00		5,30,837.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M.S.Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad.


**NIAB
Hyderabad**

SP044(P5)-Understanding the Epigenetics of Host Pathogen interaction during Bovine Theileriosis"

P.I: Dr. Pares Sharma


Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
7,04,995.00	Opening Balance	11,22,088.00			0.00
12,00,000.00	Grant In Aid	0.00	1,74,501.00	Salaries - Manpower	0.00
27,291.00	Other Receipts	3,692.00	4,18,313.00	Consumables	5,75,233.00
0.00		0.00	20,322.00	Contingencies	45,554.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	90,000.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	1,07,062.00	Transfer of Funds	5,04,993.00
19,32,286.00		11,25,780.00	8,10,198.00		11,25,780.00
	Excess of Expenditure over Income	0.00	11,22,088.00	Closing Balance	0.00
19,32,286.00		11,25,780.00	19,32,286.00		11,25,780.00


Dr G Taru Sharma
 Director
 NIAB


Dr. G. Taru Sharma
 Director
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Plot No. 45 & 46, Hyderabad-500 032

For CHARY AND CO
 Chartered Accountants
 F R No. 014102S


M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023


Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad


I Jagadeesh
 Manager (Office & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad

**NIAB
Hyderabad**

SP045(ASD)-Characterization of spliceosome-associated Nine Teen complex (NTC) like proteins in Toxoplasma Gondii.

P.I: Dr. Abhijit S Deshmukh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,35,195.00	Opening Balance	1,49,192.00			0.00
4,00,000.00	Grant In Aid	0.00	83,342.00	Salaries - Manpower	0.00
10,017.00	Other Receipts	0.00	2,30,504.00	Consumables	0.00
0.00		0.00	32,174.00	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00	50,000.00	Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	1,49,192.00
5,45,212.00	Excess of Expenditure over Income	1,49,192.00	3,96,020.00		1,49,192.00
0.00		0.00	1,49,192.00	Closing Balance	0.00
5,45,212.00		1,49,192.00	5,45,212.00		1,49,192.00

For CHARY AND CO
Chartered Accountants
FR No. 014102S

M S Appala-Chary
Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Plot No. 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु वैद्यकीय प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

SP046(SF)-Immunocharacterization of Lipopolysaccharide (LPS) from Leptospira: Towards development LPS based Vaccine."


P.I: Dr. Syed Mohd Faisal

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,04,521.00	Opening Balance	3,11,634.00			0.00
6,00,000.00	Grant In Aid	3,00,000.00	2,93,548.00	Salaries - Manpower	1,40,000.00
2,946.00	Other Receipts	5,433.00	0.00	Consumables	3,73,322.00
0.00		0.00	22,285.00	Contingencies	16,290.00
0.00		0.00	0.00	Travel	4,037.00
0.00		0.00	80,000.00	Overheads	1,345.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
7,07,467.00		6,17,067.00	3,95,833.00		5,34,994.00
0.00	Excess of Expenditure over Income	0.00	3,11,634.00	Closing Balance	82,073.00
7,07,467.00		6,17,067.00	7,07,467.00		6,17,067.00

For CHARY AND CO
Chartered Accountants
F R No. 0144025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.


I Jagadeesh
Manager (Office & Finance)
NIAB
దైకదేశ/ I Jagadeesh
ప్రవేశక (కార్యాలయ మరియు
Manager (Office & Finance)
నియోగ వస్తు వేతన నిర్వహణ
National Institute of Animal Biotechnology (NIAB)
హైదరాబాద్/ Hyderabad.


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

**NIAB
Hyderabad**

SP048(SG)-Iron oxide nanoparticles peptide complexes for imaging of urokinase plasminogen activator receptor (uPAR) in cancer diagnostics.

P.I: Dr. Sonu Gandhi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
4,15,607.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	0.00	1,15,742.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	2,58,535.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	1,020.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	40,310.00	Transfer of Funds	0.00
4,15,607.00		0.00	4,15,607.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
4,15,607.00		0.00	4,15,607.00		0.00

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**

**M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BVGWQK9638
Date: 01/05/2023**

**Dr G Taru Sharma
Director
NIAB**

**Dr. G. Taru Sharma
Director/Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 037**

**Harijit Singh
Sr. Manager (Admin & Finance)
NIAB**

**Harijit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad**

**I Jagadeesh
Manager (Office & Finance)
NIAB**

**I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad**


**NIAB
Hyderabad**

SP049(ASD)-Development of lateral flow based chromatographic immunoassay using recombinant chimera antigens for point of care testing of Toxoplasma gondii infection.


P.L:Dr.Ahjit S Deshmukh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
9,49,733.00	Opening Balance	0.00			0.00
1,50,141.00	Grant In Aid	0.00	2,58,333.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	6,77,618.00	Consumables	0.00
0.00		0.00	6,934.00	Contingencies	0.00
0.00		0.00	4,834.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	1,52,155.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
10,99,874.00		0.00	10,99,874.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
10,99,874.00		0.00	10,99,874.00		0.00



Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 014102S


M S Appala-Chary
Chartered Accountant

M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032


I Jagadeesh
Manager (Office & Finance)
NIAB


I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

NIAB
Hyderabad
SP050(AS)-Establishment of genome manipulation technology in Theileria parasite for identification of gene involved in transformation of host cell.
P.I: Dr. Anand Srivastava
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
1,75,672.00	Opening Balance	6,159.00			0.00
0.00	Grant In Aid	0.00	1,45,967.00	Salaries - Manpower	0.00
1,794.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	13,897.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	11,443.00	Transfer of Funds	6,159.00
1,77,466.00		6,159.00	1,71,307.00		6,159.00
0.00	Excess of Expenditure over Income	0.00	6,159.00	Closing Balance	0.00
1,77,466.00		6,159.00	1,77,466.00		6,159.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

Harjit Singh
 Sr. Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

I Jagadeesh
 Manager (Office & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad/Hyderabad.

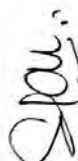
**NIAB
Hyderabad**

SP051(RKG)-Genomics assisted pathology to identify novel targets for diagnosis and therapeutic intervention(s) of Japanese encephalitis and Leptospirosis.

P.I: Dr.Ravi Kumar Gandham

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
52,04,242.16	Opening Balance	46,85,483.16			0.00
43,96,935.00	Grant In Aid	0.00	10,85,252.00	Salaries - Manpower	11,34,007.00
63,416.00	Other Receipts	94,695.00	31,80,827.00	Consumables	29,96,296.00
0.00		0.00	72,339.00	Contingencies	1,53,226.00
0.00		0.00	77,176.00	Travel	2,07,895.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	1,47,213.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	4,16,303.00	Transfer of Funds	63,416.00
96,64,593.16		47,80,178.16	49,79,110.00		45,54,840.00
0.00	Excess of Expenditure over Income	0.00	46,85,483.16	Closing Balance	2,25,338.16
96,64,593.16		47,80,178.16	96,64,593.16		47,80,178.16



Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023




Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad



I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

**NIAB
Hyderabad**

SP052(HBD)-Development of large animal models and Polyherbal medicines to treat ovarian cysts in livestock.

P.I: Dr.HBD Prasada Rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
6,00,649.00	Opening Balance	2,83,897.00			0.00
7,00,000.00	Grant In Aid	0.00	3,42,184.00	Salaries - Manpower	31,452.00
23,257.00	Other Receipts	1,958.00	5,99,015.00	Consumables	0.00
0.00		0.00	41,754.00	Contingencies	13,884.00
0.00		0.00	7,056.00	Travel	0.00
0.00		0.00	50,000.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	2,40,519.00
13,23,906.00		2,85,855.00	10,40,009.00		2,85,855.00
0.00	Excess of Expenditure over Income	0.00	2,83,897.00	Closing Balance	0.00
13,23,906.00		2,85,855.00	13,23,906.00		2,85,855.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 052

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology
Hyderabad

**NIAB
Hyderabad**

SP054(VB)-Deciphering the role of efflux pumps in imparting antimicrobial resistance in staphylococcus aureus and their inhibitors in potentiating the existing therapy.

P.I: Dr. Vasundhara Bhandari

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,11,998.50	Opening Balance	0.50			0.00
0.00	Grant In Aid	0.00		Salaries - Manpower	0.00
0.00	Other Receipts	0.00	3,79,470.00	Consumables	0.00
0.00		0.00	1,000.00	Contingencies	0.00
0.00		0.00		Travel	0.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	0.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00	1,31,528.00	Transfer of Funds	0.00
5,11,998.50		0.50	5,11,998.00		0.00
0.00	Excess of Expenditure over Income	0.00		Closing Balance	0.50
5,11,998.50		0.50	5,11,998.50		0.50

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BVGWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP055(BD)-Limiting antimicrobial resistance by inhibiting diadenylate cyclase (DAC)- a bacterial second messenger biosynthetic enzyme involved in biofilm formation and cell wall integrity.

P.I: Dr. Bappaditya Dey

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
9,53,270.50	Opening Balance	5,62,768.50			0.00
9,28,211.00	Grant In Aid	0.00	6,07,600.00	Salaries - Manpower	1,65,480.00
15,493.00	Other Receipts	0.00	4,80,405.00	Consumables	3,09,175.00
0.00		0.00	52,637.00	Contingencies	1,899.00
0.00		0.00	15,637.00	Travel	30,385.00
0.00		0.00	30,252.00	Overheads	0.00
0.00		0.00	1,47,675.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	55,829.50
18,96,974.50		5,62,768.50	13,34,206.00		5,62,768.50
0.00	Excess of Expenditure over Income	0.00	5,62,768.50	Closing Balance	0.00
18,96,974.50		5,62,768.50	18,96,974.50		5,62,768.50

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**

**M S Appala-Chary
Chartered Accountant
M. No. 221442**

**UDIN: 23221442BGVWQK9638
Date: 01/05/2023**

**Dr G Taru Sharma
Director
NIAB**

**Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Plot No. 400 & 401/Hyderabad-500 032.**

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**

**I Jagadeesh
Manager (Office & Finance)
NIAB**

**I Jagadeesh
Manager (Office & Finance)
NIAB**

NIAB
Hyderabad
SP056(SM)-Understanding the mechanism of buparvaquone resistance in apiomplexan parasite theileriaannulata.
P.I:Ms.Shweta Murthy
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,28,258.00	Opening Balance	5,47,794.00			0.00
9,00,000.00	Grant In Aid	0.00	5,95,200.00	Salaries - Manpower	2,97,600.00
8,266.00	Other Receipts	5,099.00	1,77,932.00	Consumables	2,16,767.00
0.00		0.00	18,700.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	88,000.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	8,898.00	Transfer of Funds	0.00
14,36,524.00		5,52,893.00	8,88,730.00		5,14,367.00
0.00	Excess of Expenditure over Income	0.00	5,47,794.00	Closing Balance	38,526.00
14,36,524.00		5,52,893.00	14,36,524.00		5,52,893.00


Dr G Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

For CHARY AND CO
Chartered Accountants
FR No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.


Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP057(HBD)-An attempt to enhance the shelf life of an oocyte to increase the fertilization time window.

P.I: Dr.HBD Prasada Rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
2,65,072.00	Opening Balance	1,06,298.00			0.00
11,48,502.00	Grant In Aid	11,35,088.00	6,99,360.00	Salaries - Manpower	5,24,520.00
2,026.00	Other Receipts	2,870.00	4,52,838.00	Consumables	4,96,892.00
0.00		0.00	32,890.00	Contingencies	0.00
0.00		0.00	0.00	Travel	27,471.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	1,24,214.00	Transfer of Funds	2,026.00
14,15,600.00		12,44,256.00	13,09,302.00		10,50,909.00
0.00	Excess of Expenditure over Income	0.00	1,06,298.00	Closing Balance	1,93,347.00
14,15,600.00		12,44,256.00	14,15,600.00		12,44,256.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Surana-5th Floor, Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Surana/Hyderabad.

SP058(SA)-Identification of key molecular factors involved in resistance/susceptibility to paratuberculosis infection in indigenous breeds of cows

NIAB
Hyderabad

P.I.Sri.Sarwar Azam

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
16,01,844.00	Opening Balance	3,49,004.00			0.00
2,18,914.00	Grant In Aid	15,11,779.00	2,08,871.00	Salaries - Manpower	3,00,000.00
39,983.00	Other Receipts	6,022.00	11,87,200.00	Consumables	12,15,636.00
0.00		0.00	31,320.00	Contingencies	24,999.00
0.00		0.00	24,868.00	Travel	20,472.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	59,478.00	Transfer of Funds	39,983.00
18,60,741.00		18,66,805.00	15,11,737.00		16,01,090.00
0.00	Excess of Expenditure over Income	0.00	3,49,004.00	Closing Balance	2,65,715.00
18,60,741.00		18,66,805.00	18,60,741.00		18,66,805.00


Dr G Taru Sharma
Director
NIAB


Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M.S. Appara Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB


I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad

SP059(MS)-Molecular biological studies on porcine reproductive & respiratory syndrome (PRRS) virus in pig population of North East Region of India for development of sustainable diagnostics and vaccine.

P.I: Dr. Madhuri Subbiah

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
10,33,469.00	Opening Balance	3,48,615.00			0.00
13,29,926.00	Grant In Aid	18,70,791.00	7,74,000.00	Salaries - Manpower	6,78,844.00
25,730.00	Other Receipts	17,307.00	8,16,927.00	Consumables	11,25,553.00
0.00		0.00	16,705.00	Contingencies	11,180.00
0.00		0.00	0.00	Travel	25,000.00
0.00		0.00	77,378.00	Overheads	99,650.00
0.00		0.00	3,55,500.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	2,96,486.00
23,89,125.00		22,36,713.00	20,40,510.00		22,36,713.00
	Excess of Expenditure over Income			Closing Balance	0.00
23,89,125.00		22,36,713.00	23,89,125.00		22,36,713.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad


I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

SP060(BD)-A transcriptional approach to identify biomarkers of susceptibility and/or resistance to tuberculosis in native and crossbred cattle.

NIAB
Hyderabad

P.I: Dr. Bappaditya Dey

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
3,32,019.00	Opening Balance	30,70,161.00			0.00
33,26,055.00	Grant In Aid	9,64,063.00	3,64,259.00	Salaries - Manpower	3,72,000.00
21,245.00	Other Receipts	55,545.00	1,63,437.00	Consumables	19,22,365.00
0.00		0.00	51,600.00	Contingencies	10,12,128.00
0.00		0.00	0.00	Travel	61,803.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	29,862.00	Transfer of Funds	21,245.00
36,79,319.00		40,89,769.00	6,09,158.00		33,89,541.00
0.00	Excess of Expenditure over Income	0.00	30,70,161.00	Closing Balance	7,00,228.00
36,79,319.00		40,89,769.00	36,79,319.00		40,89,769.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

G. Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

**NIAB
Hyderabad**

SP061(NRH)-Complete solution for molecular diagnosis of COVID 19 multiplex assay along with screening for other related respiratory diseases.

P.I: Dr. Nagendra R Hegde

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
10,88,716.00	Opening Balance	0.00			0.00
7,07,348.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	2,97,520.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	14,98,544.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
17,96,064.00		0.00	17,96,064.00		0.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	0.00
17,96,064.00		0.00	17,96,064.00		0.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
Hyderabad
National Institute of Animal Biotechnology (NIAB)

NIAB
Hyderabad
SP062(SG)-COVID-SCAN(Novel diagnostic platforms for point-of-care SARS-CoV-2 detection).

P.I: Dr. Sonu Gandhi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
11,79,057.00	Opening Balance	6,18,057.00			0.00
10,00,000.00	Grant In Aid	10,00,000.00	3,77,452.00	Salaries - Manpower	2,61,833.00
25,562.00	Other Receipts	17,380.00	9,36,806.00	Consumables	10,56,687.00
0.00		0.00	92,304.00	Contingencies	35,967.00
0.00		0.00	0.00	Travel	9,907.00
0.00		0.00	1,80,000.00	Overheads	40,000.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
22,04,619.00	Excess of Expenditure over Income	16,35,437.00	15,86,562.00	Closing Balance	14,04,394.00
22,04,619.00		16,35,437.00	22,04,619.00		2,31,043.00
					16,35,437.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad

**NIAB
Hyderabad**

SP064(PS)-Socio-economic upliftment of landless and marginal farmers of Yadgir district (an aspirational district) of Karnataka through goat rearing.

P.J:Dr. Pankaj Sumati

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
62,32,007.00	Opening Balance	79,00,617.00			0.00
62,04,218.00	Grant In Aid	0.00	23,14,660.00	Salaries - Manpower	12,33,514.00
1,46,942.00	Other Receipts	1,92,281.00	12,98,373.00	Consumables	16,01,329.00
0.00		0.00	1,07,209.00	Contingencies	7,57,681.00
0.00		0.00	11,300.00	Travel	0.00
0.00		0.00	25,000.00	Overheads	0.00
0.00		0.00	8,72,698.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	53,310.00	Transfer of Funds	1,46,942.00
1,25,83,167.00		80,92,898.00	46,82,550.00		37,39,466.00
0.00	Excess of Expenditure over Income	0.00	79,00,617.00	Closing Balance	43,53,432.00
1,25,83,167.00		80,92,898.00	1,25,83,167.00		80,92,898.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

NIAB
Hyderabad

SP065(NG)-Gene editing for generating tissue specific complete knock down/out of Myostatin gene for increased lean meat production in Indian goat (Capra hircus, Osmanabadi breed), Phase-I

P.I: Dr. Nirmalya Ganguly

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
14,99,682.00	Opening Balance	4,78,599.00			0.00
0.00	Grant In Aid	4,00,000.00	5,17,903.00	Salaries - Manpower	4,72,613.00
29,762.00	Other Receipts	0.00	5,19,486.00	Consumables	4,95,916.00
0.00		0.00	13,456.00	Contingencies	3,60,660.00
0.00		0.00	0.00	Travel	22,294.00
0.00		0.00	0.00	Overheads	1,25,000.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
15,29,444.00		8,78,599.00	10,50,845.00		14,76,483.00
0.00	Excess of Expenditure over Income	5,97,884.00	4,78,599.00	Closing Balance	0.00
15,29,444.00		14,76,483.00	15,29,444.00		14,76,483.00

For CHARY AND CO

Chartered Accountants

F R No. 0141025

M S Appala Chary

Chartered Accountant

M. No. 221442

UDIN: 23221442BGVVWQK9638

Date: 01/05/2023

Dr G Taru Sharma

Director

NIAB

Dr. G. Taru Sharma

Director

National Institute of Animal Biotechnology (NIAB)

Plot No. 400-5/3, Hyderabad-500 032

Harjit Singh

Sr. Manager (Admin & Finance)

NIAB

I Jagadeesh

Manager (Office & Finance)

NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

**NIAB
Hyderabad**

SP066(SG)-Development of Multiplex/Disposable Paper Microfluidic Device for Detection of β -lactam antibiotic residues in livestock and poultry products.

P.I: Dr. Sonu Gandhi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
9,44,139.00	Opening Balance	10,06,046.00			0.00
11,14,000.00	Grant In Aid	7,50,326.00	2,48,925.00	Salaries - Manpower	2,20,000.00
35,985.00	Other Receipts	10,029.00	6,87,366.00	Consumables	5,59,971.00
0.00		0.00	21,001.00	Contingencies	8,550.00
0.00		0.00	0.00	Travel	22,352.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	1,24,688.00	Equipment	8,72,000.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	6,098.00	Transfer of Funds	39,297.00
20,94,124.00		17,66,401.00	10,88,078.00		17,22,170.00
0.00	Excess of Expenditure over Income	0.00	10,06,046.00	Closing Balance	44,231.00
20,94,124.00		17,66,401.00	20,94,124.00		17,66,401.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M.S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad

SP067(VTF)-Upgradation of Department of Biotechnology's two existing laboratories as Central Drugs Laboratory for testing of COVID-19 vaccine.

P.I: Dr. G Taru Sharma

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
9,21,01,223.00	Opening Balance	1,62,37,043.00			0.00
0.00	Grant In Aid	0.00	61,15,163.00	Salaries - Manpower	52,60,968.00
18,60,162.00	Other Receipts	1,04,587.00	25,03,700.00	Consumables	6,17,947.00
0.00		0.00	13,31,665.00	Contingencies	1,29,431.00
0.00		0.00	2,23,994.00	Travel	23,304.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	6,75,49,820.00	Equipment	4,45,595.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
9,39,61,385.00		1,63,41,630.00	7,77,24,342.00		64,77,245.00
0.00	Excess of Expenditure over Income	0.00	1,62,37,043.00	Closing Balance	98,64,385.00
9,39,61,385.00		1,63,41,630.00	9,39,61,385.00		1,63,41,630.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP068(SG)-Development of a new generation of biosensors integrated with nanostructured sensitive elements for detection of Salmonellosis.

P.I: Dr. Sonu Gandhi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
5,01,028.00	Opening Balance	11,559.00			0.00
0.00	Grant In Aid	6,00,000.00	0.00	Salaries - Manpower	0.00
10,454.00	Other Receipts	5,443.00	4,04,648.00	Consumables	4,75,578.00
0.00		0.00	5,277.00	Contingencies	22,620.00
0.00		0.00	0.00	Travel	6,036.00
0.00		0.00	0.00	Overheads	1,00,000.00
0.00		0.00	89,998.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
5,11,482.00		6,17,002.00	4,99,923.00		6,04,234.00
0.00	Excess of Expenditure over Income	0.00	11,559.00	Closing Balance	12,768.00
5,11,482.00		6,17,002.00	5,11,482.00		6,17,002.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M-S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad, Hyderabad.

NIAB
Hyderabad

SP069(BD)-Development of an endogenous STING agonist adjuvanted Mycobacterium bovis BCG vaccine to enhance efficacy against tuberculosis.

P.I.: Dr. Bappaditya Dey

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	3,91,719.00			0.00
15,61,280.00	Grant In Aid	8,14,720.00	2,10,800.00	Salaries - Manpower	3,86,260.00
6,367.00	Other Receipts	5,944.00	1,86,362.00	Consumables	4,59,056.00
0.00		0.00	17,558.00	Contingencies	12,596.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	7,61,208.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	6,367.00
15,67,647.00		12,12,383.00	11,75,928.00		8,64,279.00
0.00	Excess of Expenditure over Income	0.00	3,91,719.00	Closing Balance	3,48,104.00
15,67,647.00		12,12,383.00	15,67,647.00		12,12,383.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

SP070(GKR)-Validation and translation of the vaccines as well as diagnostic technologies developed in Phase-I of ADMaC.

NIAB

Hyderabad

P.I: Dr. Girish K. Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	3,64,057.00			0.00
19,11,280.00	Grant In Aid	17,77,578.00	1,74,000.00	Salaries - Manpower	3,67,000.00
30,355.00	Other Receipts	4,464.00	13,01,475.00	Consumables	5,73,031.00
0.00		0.00	29,360.00	Contingencies	2,000.00
0.00		0.00	22,743.00	Travel	38,548.00
0.00		0.00	50,000.00	Overheads	50,000.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	30,355.00
19,41,635.00		21,46,099.00	15,77,578.00		10,60,934.00
0.00	Excess of Expenditure over Income	0.00	3,64,057.00	Closing Balance	10,85,165.00
19,41,635.00		21,46,099.00	19,41,635.00		21,46,099.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
 निदेशक / Director
 राष्ट्रीय प्रयोगशाला के प्रमुख (पशु और पक्षी)
 National Institute of Animal Biotechnology (NIAB)
 कृष्णा-100 032/Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB
 డైరెక్టర్ / I Jagadeesh
 కార్యకర్త (కార్యాలయ మరియు ఆర్థిక నిర్వహణ)
 Manager (Office & Finance)
 NIAB
 జాతీయ ప్రాణి జీవ విజ్ఞాన సంస్థ (NIAB)
 హైదరాబాద్ / Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

NIAB
Hyderabad
SP071(SG)-PESTISCAN (Development of novel biosensor for endosulfan pesticide residue detection.)
P.I: Dr. Sonu Gandhi

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	5,73,710.00			0.00
11,17,000.00	Grant In Aid	6,00,000.00	2,12,350.00	Salaries - Manpower	3,72,000.00
18,402.00	Other Receipts	11,706.00	1,90,020.00	Consumables	2,91,933.00
0.00		0.00	73,834.00	Contingencies	47,782.00
0.00		0.00	15,863.00	Travel	31,322.00
0.00		0.00	69,625.00	Overheads	50,000.00
0.00		0.00		Equipment	2,47,800.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
11,35,402.00		11,85,416.00	5,61,692.00		10,40,837.00
0.00	Excess of Expenditure over Income	0.00	5,73,710.00	Closing Balance	1,44,579.00
11,35,402.00		11,85,416.00	11,35,402.00		11,85,416.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
निदेशक / Director
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान (पशु और पक्षी)
National Institute of Animal Biotechnology (NIAB)
कस्तूरबा-400 033 / Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ए. जगदीश / I Jagadeesh
मैनेजर (ऑफिस और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
कस्तूरबा/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सिニア मैनेजर (एडमिन और वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु और प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
कस्तूरबा/Hyderabad.

**NIAB
Hyderabad**

SP072(AD)-Development of affordable Immunochromatographic Test(ICT) based on recombinant proteins for point-of-care detection of Toxoplasma gondii infection

P.L.Dr.Abhijit Subhashrao Deshmukh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	9,76,600.00			0.00
14,86,600.00	Grant In Aid	0.00	1,45,947.00	Salaries - Manpower	1,41,290.00
0.00	Other Receipts	6,516.00	3,55,343.00	Consumables	1,85,737.00
0.00		0.00	8,710.00	Contingencies	2,868.00
0.00		0.00		Travel	23,364.00
0.00		0.00		Overheads	0.00
0.00		0.00		Equipment	6,08,000.00
0.00		0.00		Books	0.00
0.00		0.00		AMC	0.00
0.00		0.00		Others	0.00
0.00		0.00		Transfer of Funds	0.00
14,86,600.00		9,83,116.00	5,10,000.00		9,61,259.00
0.00	Excess of Expenditure over Income	0.00	9,76,600.00	Closing Balance	21,857.00
14,86,600.00		9,83,116.00	14,86,600.00		9,83,116.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M-S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB
Hyderabad

Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad

SP073A(PCMU)-Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.

P.I.: Director, NIAB

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	20,77,052.00			0.00
26,17,840.00	Grant In Aid	0.00	4,85,824.00	Salaries - Manpower	14,85,247.00
0.00	Other Receipts	35,620.00	0.00	Consumables	14,020.00
0.00		0.00	15,070.00	Contingencies	2,25,453.00
0.00		0.00	39,894.00	Travel	1,02,166.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
26,17,840.00		21,12,672.00	5,40,788.00		18,26,886.00
0.00	Excess of Expenditure over Income	0.00	20,77,052.00	Closing Balance	2,85,786.00
26,17,840.00		21,12,672.00	26,17,840.00		21,12,672.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP073B(NRH)-Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.

P.I: Dr. Nagendra R Hegde

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	1,22,66,158.00			0.00
1,25,90,400.00	Grant In Aid	0.00	2,21,133.00	Salaries - Manpower	21,29,088.00
0.00	Other Receipts	2,08,319.00	94,088.00	Consumables	56,49,862.00
0.00		0.00	0.00	Contingencies	2,16,128.00
0.00		0.00	9,021.00	Travel	6,02,268.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	22,54,672.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
1,25,90,400.00		1,24,74,477.00	3,24,242.00		1,08,52,018.00
0.00	Excess of Expenditure over Income	0.00	1,22,66,158.00	Closing Balance	16,22,459.00
1,25,90,400.00		1,24,74,477.00	1,25,90,400.00		1,24,74,477.00


Dr G Taru Sharma
Director
NIAB


Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M.S. Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.


Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

NIAB
Hyderabad
SP073C(Comp)-Establishment of a Consortium for One Health to address Zoonotic and Transboundary Diseases in India, including the Northeast Region.
P.L.:Director,NIAB
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	26,61,040.00			0.00
15,58,59,560.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	0.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	15,31,98,520.00	Transfer of Funds	26,61,040.00
15,58,59,560.00		26,61,040.00	15,31,98,520.00		26,61,040.00
0.00	Excess of Expenditure over Income	0.00	26,61,040.00	Closing Balance	0.00
15,58,59,560.00		26,61,040.00	15,58,59,560.00		26,61,040.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442

UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad-500 032

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

I Jagadeesh
 Manager (Office & Finance)
 NIAB
 I Jagadeesh
 Manager (Office & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad.

**NIAB
Hyderabad**
SP074(GKR)-Studies on the immunodominant proteins of the zoonotic pathogen, Brucella to develop improved diagnostic assays and vaccines for brucellosis.

P.I: Dr. Girish K Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	12,51,325.00			0.00
33,91,920.00	Grant In Aid	22,93,600.00	1,57,240.00	Salaries - Manpower	3,83,160.00
0.00	Other Receipts	20,529.00	15,05,541.00	Consumables	11,44,721.00
0.00			62,530.00	Contingencies	1,81,477.00
0.00				Travel	24,072.00
0.00				Overheads	0.00
0.00				Equipment	5,91,701.00
0.00			4,15,284.00	Books	0.00
0.00				AMC	0.00
0.00				Others	0.00
0.00				Transfer of Funds	13,015.00
33,91,920.00		35,65,454.00	21,40,595.00		23,38,146.00
0.00	Excess of Expenditure over Income		12,51,325.00	Closing Balance	12,27,308.00
33,91,920.00		35,65,454.00	33,91,920.00		35,65,454.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad

**NIAB
Hyderabad**

SP075(SS)-Identification of key molecular players specially incRNAs involved in response to NDV challenge in indigenous and exotic chicken breeds using RNA-seq analysis.

P.I: Dr. Shailesh Sharma

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	13,96,173.00			0.00
15,59,200.00	Grant In Aid	0.00	1,62,027.00	Salaries - Manpower	3,47,200.00
0.00	Other Receipts	34,877.00	0.00	Consumables	0.00
0.00		0.00	1,000.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
15,59,200.00		14,31,050.00	1,63,027.00		3,47,200.00
0.00	Excess of Expenditure over Income	0.00	13,96,173.00	Closing Balance	10,83,850.00
15,59,200.00		14,31,050.00	15,59,200.00		14,31,050.00

**For CHARY AND CO
Chartered Accountants
F R No. 0141025**

**M S Appala Chary
Chartered Accountant
M. No. 221442**

**UDIN: 23221442BGVWQK9638
Date: 01/05/2023**

**Dr G Taru Sharma
Director
NIAB**

**Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 037**

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB**

**Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 037**

**I Jagadeesh
Manager (Office & Finance)
NIAB**

**I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 037**

**NIAB
Hyderabad**

SP076(AS)-Phenotypic characterization of ruminant B cells from precursors to effector cells: Phase I.

P.I: Dr. Anand Srivastava

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	18,41,249.00			0.00
40,53,120.00	Grant In Aid	10,54,970.00	2,40,180.00	Salaries - Manpower	6,78,813.00
0.00	Other Receipts	38,606.00	4,27,181.00	Consumables	8,36,602.00
0.00		0.00	13,510.00	Contingencies	13,599.00
0.00		0.00	0.00	Travel	37,931.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	15,31,000.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	1,69,000.00
40,53,120.00		29,34,825.00	22,11,871.00		17,35,945.00
0.00	Excess of Expenditure over Income	0.00	18,41,249.00	Closing Balance	11,98,880.00
40,53,120.00		29,34,825.00	40,53,120.00		29,34,825.00

For CHARY AND CO
Chartered Accountants
F R No. 014102S

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
D-20/20-400 033/Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP077(NG)-Therapeutic protein production in milk of farm animals to increase their affordability.

P.I: Dr. Nirmalya Ganguli

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	1,41,46,503.00			0.00
1,46,50,028.00	Grant In Aid	0.00	3,73,968.00	Salaries - Manpower	21,39,776.00
0.00	Other Receipts	3,41,498.00	1,16,057.00	Consumables	16,76,090.00
0.00		0.00	13,500.00	Contingencies	1,12,885.00
0.00		0.00	0.00	Travel	33,232.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	77,92,726.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
1,46,50,028.00	Excess of Expenditure over Income	1,44,88,001.00	5,03,525.00		1,17,54,709.00
0.00		0.00	1,41,46,503.00	Closing Balance	27,33,292.00
1,46,50,028.00		1,44,88,001.00	1,46,50,028.00		1,44,88,001.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M S Appala Chary
 Chartered Accountant
 M. No. 221442

UDIN: 23221442BGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

डॉ. जी. गुरु शर्मा/Dr. G. Taru Sharma
 निदेशक/Director
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान (एन आर आर आई)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-500 032

I Jagadeesh
 Manager (Office & Finance)
 NIAB

ऐ. जगदीश/I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

हरजित सिंह/Harjit Singh
 सी. मैनेजर (एडमिन & फाइनेंस)
 Sr. Manager (Admin & Finance)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

NIAB
Hyderabad
SP078(SS)-Development of catalytically Active Nanoprobes or Enhanced imaging and cancer phenotyping.
P.I: Dr. Sanjay Singh
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	2,92,383.00			0.00
2,88,728.00	Grant In Aid	4,87,247.00	0.00	Salaries - Manpower	2,17,000.00
3,655.00	Other Receipts	14,119.00	0.00	Consumables	3,43,849.00
0.00		0.00	0.00	Contingencies	29,890.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	17,092.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
2,92,383.00		7,93,749.00	0.00		6,07,831.00
0.00	Excess of Expenditure over Income		2,92,383.00	Closing Balance	1,85,918.00
2,92,383.00		7,93,749.00	2,92,383.00		7,93,749.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023


Dr G Taru Sharma
Director
NIAB


Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Jagadeesh
Manager (Office & Finance)
NIAB

NIAB
Hyderabad

SP080(SKK)-Validation of DBT-NIAB SNP chip for Breed Identification and Preliminary Genome Wide Association Studies on Milk Yield

P.I: Dr. Sandeep Kushwaha

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	43,64,612.00			0.00
43,75,760.00	Grant In Aid	0.00	44,387.00	Salaries - Manpower	8,07,010.00
36,239.00	Other Receipts	97,642.00	0.00	Consumables	14,67,663.00
0.00		0.00	3,000.00	Contingencies	23,760.00
0.00		0.00	0.00	Travel	21,072.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	4,04,722.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	36,239.00
44,11,999.00		44,62,254.00	47,387.00		27,60,466.00
	Excess of Expenditure over Income	0.00	43,64,612.00	Closing Balance	17,01,788.00
44,11,999.00		44,62,254.00	44,11,999.00		44,62,254.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Genetics-400 032/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

NIAB
Hyderabad

SP081(HBD)-Identification and phenotypic analysis of novel targets of guarding of germ cells (taps) to combat the ovarian insufficiency (poi).

P.I: Dr. HBD Prasad Rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	10,66,605.00			0.00
15,01,160.00	Grant In Aid	0.00	35,429.00	Salaries - Manpower	3,41,000.00
8,309.00	Other Receipts	8,695.00	3,42,087.00	Consumables	2,50,885.00
0.00		0.00	7,028.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	58,320.00	Overheads	- 29,160.00
0.00		0.00	0.00	Equipment	4,99,500.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
15,09,469.00		10,75,300.00	4,42,864.00		10,62,225.00
0.00	Excess of Expenditure over Income	0.00	10,66,605.00	Closing Balance	13,075.00
15,09,469.00		10,75,300.00	15,09,469.00		10,75,300.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Post Bag-500 032/Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

SP082(AS)-Identification and characterization of CDK-cyclin pair in Theileria annulata and identification of small molecule inhibitor perturbing CDK-cyclin interactions

**NIAB
Hyderabad**


P.I: Dr. Anand Srivastava

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	17,28,725.00			0.00
19,70,000.00	Grant In Aid	0.00		Salaries - Manpower	5,00,565.00
8,824.00	Other Receipts	29,886.00	1,05,099.00	Consumables	9,19,524.00
0.00		0.00	2,000.00	Contingencies	23,648.00
0.00		0.00	0.00	Travel	18,364.00
0.00		0.00	1,43,000.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
19,78,824.00		17,58,611.00	2,50,099.00		14,62,101.00
0.00	Excess of Expenditure over Income	0.00	17,28,725.00	Closing Balance	2,96,510.00
19,78,824.00		17,58,611.00	19,78,824.00		17,58,611.00


Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221428GVWQK9638
Date: 01/05/2023


Dr. G. Taru Sharma
Director
NIAB


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB


Jagadeesh
Manager (Office & Finance)
NIAB

NIAB
Hyderabad

SP083(SGL)-Adipose tissue-derived mesenchymal stem cells for therapy in livestock species

P.I: Dr. Sandeep Goel

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	25,49,954.00			0.00
25,69,920.00	Grant In Aid	0.00	0.00	Salaries - Manpower	2,55,645.00
6,109.00	Other Receipts	55,695.00	24,575.00	Consumables	8,48,930.00
0.00		0.00	1,500.00	Contingencies	39,682.00
0.00		0.00	0.00	Travel	29,123.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	8,87,320.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	6,109.00
25,76,029.00	Excess of Expenditure over Income	26,05,649.00	26,075.00	Closing Balance	20,66,809.00
0.00		0.00	25,49,954.00		5,38,840.00
25,76,029.00		26,05,649.00	25,76,029.00		26,05,649.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

(Dr. G. Taru Sharma)
Director
National Institute of Animal Biotechnology
(for and on behalf of)
National Institute of Animal Biotechnology (NIAB)
Gandhinagar, Hyderabad-500 072.

I Jagadeesh
Manager (Office & Finance)
NIAB

(I Jagadeesh)
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Gandhinagar/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

(Harjit Singh)
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Gandhinagar/Hyderabad.

NIAB
Hyderabad

SP084(GKR)-Understanding the role of an Ubiquitin Specific Peptidase in the invasion and intracellular replication of the zoonotic bacterial pathogen, Brucella

P.I: Dr. Girish K Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	22,99,455.00			0.00
27,12,440.00	Grant In Aid	0.00		Salaries - Manpower	5,78,088.00
6,228.00	Other Receipts	31,871.00	3,19,213.00	Consumables	10,71,028.00
0.00		0.00	1,00,000.00	Contingencies	2,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	2,94,249.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	6,228.00
27,18,668.00		23,31,326.00	4,19,213.00		19,51,593.00
0.00	Excess of Expenditure over Income	0.00	22,99,455.00	Closing Balance	3,79,733.00
27,18,668.00		23,31,326.00	27,18,668.00		23,31,326.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director/Principal
National Institute of Animal Biotechnology (NIAB)
Bansara-400 034/Hyderabad-500 042

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Bansara-400 034/Hyderabad-500 042

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Bansara/Hyderabad.

**NIAB
Hyderabad**

SP085(HBD)-High-End workshop (karvashala) on Ultrastructural imaging and its applications in livestock research

P.I: Dr.HBD Prasada rao

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	5,00,805.00			0.00
5,00,000.00	Grant In Aid	0.00	0.00	Salaries - Manpower	0.00
805.00	Other Receipts	0.00	0.00	Consumables	2,26,740.00
0.00		0.00	0.00	Contingencies	2,18,025.00
0.00		0.00	0.00	Travel	54,327.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	1,713.00
5,00,805.00		5,00,805.00	0.00		5,00,805.00
0.00	Excess of Expenditure over Income	0.00	5,00,805.00	Closing Balance	0.00
5,00,805.00		5,00,805.00	5,00,805.00		5,00,805.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
 Director
 National Institute of Animal Biotechnology (NIAB)
 Ground-New 533/Hyderabad-500 103.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
 Manager (Office & Finance)
 National Institute of Animal Biotechnology (NIAB)
 Hyderabad/Hyderabad.

SP086(AD)-Development of field based diagnostic assays (serological and molecular) and genotyping of *Toxoplasma gondii* from clinical samples

NIAB
Hyderabad

P.I: Dr. Abhijit Subhashrao Deshmukh

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	21,60,205.00			0.00
21,59,280.00	Grant In Aid	4,61,280.00	0.00	Salaries - Manpower	3,12,000.00
925.00	Other Receipts	67,061.00	0.00	Consumables	8,00,890.00
0.00		0.00	0.00	Contingencies	1,53,303.00
0.00		0.00	0.00	Travel	21,478.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	6,97,847.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	925.00
21,60,205.00		26,88,546.00	0.00		19,86,443.00
0.00	Excess of Expenditure over Income	0.00	21,60,205.00	Closing Balance	7,02,103.00
21,60,205.00		26,88,546.00	21,60,205.00		26,88,546.00


Dr G Taru Sharma
Director
NIAB

डॉ. जी. तारु शर्मा / Dr. G. Taru Sharma
निदेशक / Director
राष्ट्रीय पशु और जैवप्रौद्योगिकी संस्थान (एन आर आर सी)
National Institute of Animal Biotechnology (NIAB)
(सुप्रीम-4, ०० ०३२ / Hyderabad-500 032)

For CHARY AND CO
Chartered Accountants
F R No. 0141025


M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023


Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
सी.ए. & फाइ. (मानव संसाधन व वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु और जैवप्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology
(सुप्रीम-4, ०० ०३२ / Hyderabad)


I Jagadeesh
Manager (Office & Finance)
NIAB

ई. जगदीश / Jagadeesh
प्रबंधक (कार्यालय व वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु और जैवप्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
(सुप्रीम-4, ०० ०३२ / Hyderabad)

NIAB

Hyderabad

SP087(PS)-Nanostructured paper-kit comprising magnetic nanoparticle for naked eye and rapid detection of subclinical and clinical mastitis: optimization for large scale production and clinical validation in field condition

P.I: Dr. Pankaj suman

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	3,62,222.00			0.00
3,62,000.00	Grant In Aid	32,94,360.00	0.00	Salaries - Manpower	3,03,542.00
222.00	Other Receipts	9,242.00	0.00	Consumables	4,73,711.00
0.00		0.00	0.00	Contingencies	32,262.00
0.00		0.00	0.00	Travel	81,913.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	3,62,000.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	222.00
3,62,222.00		36,65,824.00	0.00		12,53,650.00
0.00	Excess of Expenditure over Income		3,62,222.00	Closing Balance	24,12,174.00
3,62,222.00		36,65,824.00	3,62,222.00		36,65,824.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

डा. जी. तारु शर्मा
निर्देशक/डायरेक्टर
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान (एन आर आर आई)
National Institute of Animal Biotechnology (NIAB)
फ़ैसलपुर-५०० ०३२/Hyderabad-500 032.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश/ I Jagadeesh
प्रबंधक (कार्यालय और वित्त)
Manager (Office & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
फ़ैसलपुर/Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह/Harjit Singh
सी. मैनेजर (कार्यालय व वित्त)
Sr. Manager (Admin & Finance)
राष्ट्रीय पशु वैद्यक प्रौद्योगिकी संस्थान
National Institute of Animal Biotechnology (NIAB)
फ़ैसलपुर/Hyderabad.

**NIAB
Hyderabad**

SP088(PRS)-Targeting Virulence associated SVSP Gene Family of Theileria annulata for Developing potential Therapeutic Candidates

P.I: Dr. Paresh sharma

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	10,00,614.00			0.00
10,00,000.00	Grant In Aid	21,21,600.00	0.00	Salaries - Manpower	3,57,280.00
614.00	Other Receipts	28,097.00	0.00	Consumables	10,38,772.00
0.00		0.00	0.00	Contingencies	6,785.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	9,95,944.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	614.00
10,00,614.00		31,50,311.00	0.00		23,99,395.00
0.00	Excess of Expenditure over Income	0.00	10,00,614.00	Closing Balance	7,50,916.00
10,00,614.00		31,50,311.00	10,00,614.00		31,50,311.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M: No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

NIAB
Hyderabad

SP089(NG)-Enrichment of egg and meat by producing bovine lactoferrin through development of transgenic chicken.

P.I: Dr. Nirmalya Ganguli

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	3,10,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	8,455.00	0.00	Consumables	2,99,311.00
0.00			0.00	Contingencies	0.00
0.00			0.00	Travel	0.00
0.00			0.00	Overheads	0.00
0.00			0.00	Equipment	0.00
0.00			0.00	Books	0.00
0.00			0.00	AMC	0.00
0.00			0.00	Others	0.00
0.00			0.00	Transfer of Funds	0.00
0.00	Excess of Expenditure over Income	3,18,455.00	0.00	Closing Balance	2,99,311.00
0.00		3,18,455.00	0.00		19,144.00
					3,18,455.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 052

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

NIAB
Hyderabad
SP090(KK)-DBT-REF
P.J:Dr.Kaushik Kumar Dey
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	24,72,000.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	25,411.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	24,97,411.00
0.00	Excess of Expenditure over Income	24,97,411.00	0.00	Closing Balance	0.00
0.00		24,97,411.00	0.00		24,97,411.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025
M S Appala-Chary,
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB
डा. ग. तारु शर्मा/Dr. G. Taru Sharma
निदेशक/Director
राष्ट्रीय पशु और शैवाल प्रौद्योगिकी संस्थान (एन आर आर आई)
National Institute of Animal Biotechnology (NIAB)
हस्तानु-५०० ०२३/Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
ਹਰਜਿਤ ਸਿੰਘ/Harjit Singh
ਸੀਨੀਅਰ ਮੈਨੇਜਰ (ਅਡਮਿਨ & ਫਾਈਨੈਂਸ)
ਰਾਸ਼ਟਰੀ ਪਸ਼ੂ ਅਤੇ ਸ਼ੈਵਲ ਪ੍ਰਾਧਿਕਾਨਿਕਤਾ ਸੰਸਥਾ
National Institute of Animal Biotechnology
ਹਯਦਰਾਦ/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB
ఐ. జాగాదేశ్/I Jagadeesh
మేనేజర్ (ఆఫీస్ & ఫైనెన్స్)
రాష్ట్ర పశు అం శైవలికతా సంస్థా
National Institute of Animal Biotechnology (NIAB)
హైదరాబాద్/Hyderabad.

NIAB
Hyderabad

SP091(NG)-"Development of transgenic chicken as bioreactor for easy and cost effective production of human therapeutic proteins-tissue plasminogen activator(htPA) and erythropoietin(hERP)"

P.I:Dr.Nirmalya Ganguli

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	1,91,614.00	0.00	Salaries - Manpower	1,16,767.00
0.00	Other Receipts	1,653.00	0.00	Consumables	59,114.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	12,874.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		1,93,267.00	0.00		1,88,755.00
	Excess of Expenditure over Income	0.00	0.00	Closing Balance	4,512.00
0.00		1,93,267.00	0.00		1,93,267.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 232214428GVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad/Hyderabad.

**NIAB
Hyderabad**
SP092(MS)-"Evaluation of anticancer potency of accessory viral protein,W. of Newcastle disease virus." .
P.I:Dr.Madhuri Subbath
Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	11,70,300.00	0.00	Salaries - Manpower	75,000.00
0.00	Other Receipts	12,865.00	0.00	Consumables	3,69,650.00
0.00		0.00	0.00	Contingencies	49,725.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	85,700.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00	Excess of Expenditure over Income	11,83,165.00	0.00		5,80,075.00
0.00		0.00	0.00	Closing Balance	6,03,090.00
0.00		11,83,165.00	0.00		11,83,165.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442
UDIN: 23221442BGVVWQK9638
Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh / Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

SP093(JR)-3D Bioprinting of electrically conducting hydrogel with stem cells and Neovascularization Guidance for Functional Cardiac tissue Regeneration.

NIAB
Hyderabad

P.I.: Dr. Janani Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	9,69,350.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	5,416.00	0.00	Consumables	5,51,885.00
0.00		0.00	0.00	Contingencies	3,000.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	98,130.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		9,74,766.00	0.00		6,53,015.00
	Excess of Expenditure over Income	0.00	0.00	Closing Balance	3,21,751.00
0.00		9,74,766.00	0.00		9,74,766.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant

M. No. 221442

UDIN: 23221442BGVWQK9638

Date: 01/05/2023

Dr G Taru Sharma
Director
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

Harjit Singh
Sr. Manager (Admin & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
National Institute of Animal Biotechnology (NIAB)
Hyderabad.

**NIAB
Hyderabad**

SP094(SF)-Development of Novel Adjuvanted Vaccine for Foot-and-Mouth Disease

P.I: Dr. Syed Mohd Faisal

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	1,12,02,782.00	0.00	Salaries - Manpower	1,36,344.00
0.00	Other Receipts	0.00	0.00	Consumables	5,38,440.00
0.00		0.00	0.00	Contingencies	73,311.00
0.00		0.00	0.00	Travel	10,918.00
0.00		0.00	0.00	Overheads	0.00
0.00		0.00	0.00	Equipment	98,82,625.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00		1,12,02,782.00	0.00		1,06,41,638.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	5,61,144.00
0.00		1,12,02,782.00	0.00		1,12,02,782.00

Dr G Taru Sharma
Director
NIAB

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala Chary
Chartered Accountant
M. No. 221442

UDIN: 23221442BGVWQK9638
Date: 01/05/2023

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

I Jagadeesh
Manager (Office & Finance)
NIAB

Dr. G. Taru Sharma
Director
National Institute of Animal Biotechnology (NIAB)
Hyderabad-500 032

I Jagadeesh
Manager (Office & Finance)
NIAB
National Institute of Animal Biotechnology (NIAB)
Hyderabad

NIAB
Hyderabad
SP095(JR)-"3D Bioprinting Biomimetic Dermo-Epidermal Construct using Engineered Silk Spidroin with Vasculature Guidance for Skin Tissue Regeneration and Organotypic Tissue Model"

P.I: Dr. Janani Radhakrishnan

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	12,22,668.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	1,355.00	0.00	Consumables	0.00
0.00			0.00	Contingencies	0.00
0.00			0.00	Travel	0.00
0.00			0.00	Overheads	88,216.00
0.00			0.00	Equipment	0.00
0.00			0.00	Books	0.00
0.00			0.00	AMC	0.00
0.00			0.00	Others	0.00
0.00			0.00	Transfer of Funds	0.00
0.00		12,24,023.00	0.00		88,216.00
0.00	Excess of Expenditure over Income	0.00	0.00	Closing Balance	11,35,807.00
0.00		12,24,023.00	0.00		12,24,023.00

For CHARY AND CO
 Chartered Accountants
 F R No. 0141025

M-S Appala Chary
 Chartered Accountant
 M. No. 221442
 UDIN: 23221442BGGVWQK9638
 Date: 01/05/2023

Dr G Taru Sharma
 Director
 NIAB

श्री। जी। तारु शर्मा/Dr. G. Taru Sharma
 निदेशक/Director
 राष्ट्रीय अणु जीव प्रौद्योगिकी संस्थान (पशु और पक्षी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२/Hyderabad-500 032.

Harjit Singh
 Sr. Manager (Admin & Finance)
 NIAB

प्रधान निमित्त/Pranjit Singh
 प्रशासनिक और वित्त (पशु और पक्षी)
 राष्ट्रीय अणु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

I Jagadeesh
 Manager (Office & Finance)
 NIAB

प्रशासक/ I Jagadeesh
 प्रशासनिक और वित्त (पशु और पक्षी)
 राष्ट्रीय अणु जीव प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद/Hyderabad.

**NIAB
Hyderabad**

SP096(MS)-"invitro immunogenicity study of Newcastle disease virus in poultry"

P.I:Dr.Madhuri Subbaili

Receipts and Payments Account from 01/04/2022 to 31/03/2023

Previous Year Amount Rs.	Receipts	Current Year Amount Rs.	Previous Year Amount Rs.	Payments	Current Year Amount Rs.
0.00	Opening Balance	0.00			0.00
0.00	Grant In Aid	6,00,842.00	0.00	Salaries - Manpower	0.00
0.00	Other Receipts	346.00	0.00	Consumables	0.00
0.00		0.00	0.00	Contingencies	0.00
0.00		0.00	0.00	Travel	0.00
0.00		0.00	0.00	Overheads	54,622.00
0.00		0.00	0.00	Equipment	0.00
0.00		0.00	0.00	Books	0.00
0.00		0.00	0.00	AMC	0.00
0.00		0.00	0.00	Others	0.00
0.00		0.00	0.00	Transfer of Funds	0.00
0.00	Excess of Expenditure over Income	6,01,188.00	0.00		54,622.00
0.00		0.00	0.00	Closing Balance	5,46,566.00
		6,01,188.00	0.00		6,01,188.00

For CHARY AND CO
Chartered Accountants
F R No. 0141025

M S Appala-Chary
Chartered Accountant
M. No. 221442
UDIN: 232214428GVWQK9638
Date: 01/05/2023

Dr G Taru-Sharma
Director
NIAB

डॉ. गी. तारु शर्मा / Dr. G. Taru Sharma
 (निदेशक) / Director
 राष्ट्रीय पशु बीज प्रौद्योगिकी संस्थान (एन आई ए बी)
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद-५०० ०३२ / Hyderabad-500 032.

Harjit Singh
Sr. Manager (Admin & Finance)
NIAB

हरजित सिंह / Harjit Singh
 सीनियर मैनेजर (एडमिन & फाइनेंस)
 Senior Manager (Admin & Finance)
 राष्ट्रीय पशु बीज प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology
 हैदराबाद / Hyderabad.

I Jagadeesh
Manager (Office & Finance)
NIAB

ऐ. जगदीश / I Jagadeesh
 प्रबंधक (कार्यालय और वित्त)
 Manager (Office & Finance)
 राष्ट्रीय पशु बीज प्रौद्योगिकी संस्थान
 National Institute of Animal Biotechnology (NIAB)
 हैदराबाद / Hyderabad.

मानव कल्याण के लिए पशु स्वास्थ्य
Animal Health for Human Welfare



राष्ट्रीय पशु जैव प्रौद्योगिकी संस्थान

National Institute of Animal Biotechnology

(An autonomous Institute of the Department of Biotechnology, Ministry of Science & Technology, Govt. of India)

Opp. Journalist Colony, Near Gowlidoddi, Extended Q City Road, Gachibowli
Hyderabad, Telangana, India PIN: 500 032

Email: admin@niab.org.in // Web: www.niab.org.in