NIPER Guwahati

National Institute of Pharmaceutical Education and Research (NIPER) - Guwahati

(Dept. of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Govt. of India)

BIENNIAL REPORT

(2016-2018)

NIPER Guwahati

CONTENTS

Sl.No	Description	Page Nos
1.	**From the Director's Desk**	1
2.	**Members of Steering Committee**	2
3.	**Institutional Advisory Board**	3
4.	**Functioning locations of NIPER-Guwahati**	4
5.	**About NIPER-Guwahati**	6
6.	**Vision and Mission**	7
7.	**Functional Committees** 7.1 Academic Monitoring Committee 7.2 Building Construction Monitoring Committee 7.3 Internal Purchase Committee 7.4 Internal Complaint Committee for Sexual Harassment of Woman at Workplace 7.5 Hostel Grievance Cell 7.6 Student Welfare Committee 7.7 Library Committee 7.8 Committee for Documentation 7.9 Placement Committee	8
8.	**Faculty** 8.1 Faculty Members 8.2 Women Scientist 8.3 Visiting Faculty Members	9-12
9.	**Administrative & Technical Staff**	13
10.	**Details of students** 10.1 Ph. D Scholars 10.2 Master Degree Students	14-18
11.	**Impact and highlights of 2016-2018**	19
12.	**Central Instrumentation Facility**	21
13.	**Research Activities** 13.1 Dept. of Pharmacology & Toxicology 13.2 Dept. of Pharmacy Practice 13.3 Dept. of Biotechnology	26-33
14.	**Publications**	34-38
15.	**Extramurally funded research projects**	39-40

Sl.No	Description	Page Nos
16.	**International Conferences and visits**	41-42
17.	**Workshops and Seminars**	43-48
18.	**Awards and Recognition**	49-52
19.	**Collaborations**	53-56
20.	**Visits of Dignitaries**	57-58
21.	**Events**	59-72
	21.1 2nd Convocation	
	21.2 9th Foundation Day Celebration	
	21.3 Vigilance Awareness Week	
	21.4 Swachhta Pakhwada Activities	
	21.5 Free Health Care Camp	
	21.6 All NIPER Directors meet at NIPER-Guwahati	
	21.7 Assam Advantage-the Assam Global Investors' Summit	
	21.8 INTER NIPER Scientific, Sports & Cultural Meet-2018	
22.	**Placements**	73-74
23.	**Voice of Students**	75-76
24.	**Progress of Campus Construction**	77-79
25.	**Accounts Statement for F.Y. 2018**	80
26.	**Obituary**	81

FROM THE DIRECTOR'S DESK

I welcome all with warm greetings to the National Institute of Pharmaceutical Education and Research (NIPER)-Guwahati. In the year 2017-2018, NIPER-Guwahati has seen steady growth and even started to positioning its presence on a global platform. NIPER-Guwahati is the first premier national pharmacy institute in the North Eastern region of our country for providing high quality pharmacy education and research. The highlight of the year was commencement of the 2017 academic session from NITS Mirza campus, which is the nature's bowl, where faculty and staff with their families, make the campus a home away from home for our young students. This Institute is involved in National Missions like Pradhan Mantri Bhartiya Jan Aushadhi Program (PMBJP) through which awareness is being created in the rural masses of Assam and other states of North East about the usage of affordable generic drugs for the dreaded diseases.

This is only the NIPER that won iBEC competition conducted by Dept. of Biotechnology (Govt. of India) and I am proud to share that four students have represented NIPER from India at this prestigious international competition of Synthetic Biology organized at Boston, USA, in Nov-2017.

During the year, many workshops have been conducted jointly with Industry and premier institutes like IIT-Guwahati. Our new campus is coming up at Changsari, in 56 acres of land at North Guwahati. In the coming academic session, two more new courses have already been commenced in MS programs namely Pharmaceutics and Pharmaceutical Analysis. In the year 2017, we entered MoUs with IIT Guwahati, IASST Guwahati, Assam Veterinary College-Guwahati, CSIR-NEIST, Assam DownTown University, ICT-Mumbai for potential research collaboration.

I envisage a wonderful future ahead for NIPER-Guwahati as it has all the components to be the torch bearer of pharmaceutical education and research in the region and the country. I look forward to work with every one of the faculty, students and staff of NIPER-Guwahati and our well-wishers and partners in the pursuit of even more imposing heights of academic excellence.

Dr. USN Murty
Director

MEMBERS OF STEERING COMMITTEE

1. **Shri Jai Priye Prakash**
   Secretary,
   Dept. of Pharmaceuticals,
   Ministry of Chemicals and Fertilizers,
   New Delhi

2. **Shri Rajneesh Tingal**
   Joint Secretary,
   Department of Pharmaceuticals,
   Ministry of Chemicals and Fertilizers,
   New Delhi

3. **Dr. USN. Murty**
   Director,
   NIPER-Guwahati

4. **Dr. Sashi Bala Singh**
   Director,
   NIPER-Hyderabad

5. **Dr. S.J.S. Flora**
   Director,
   NIPER-Raebareli

6. **Dr. Kiran Kalia**
   Director,
   NIPER-Ahmedabad

7. **Dr. Raghuram Rao**
   Director,
   NIPER-SAS Nagar

8. **Dr. V. Ravichandiran**
   Director,
   NIPER-Kolkatta

9. **Dr. P. Das**
   Project Director,
   NIPER Hajipur/ Director,
   RMR Institute of Medical Sciences,
   Patna (Mentor Institute)

10. **Dr. Rajneesh Dube**
    Principal Secretary Industries,
    Govt. of Uttar Pradesh

11. **Shri Solomon Arokia Raj**
    Secretary to Government &
    CIP Govt. of Andhra Pradesh

12. **Shri M.K. Das**
    Additional Chief Secretary,
    Industries,
    Govt. of Gujarat

13. **Shri S. Siddharth**
    Principal Secretary,
    Industries,
    Govt. of Bihar

14. **Shri S Kishore**
    Principal Secretary,
    Govt. of West Bengal

15. **Shri Ravi Capoor**
    Additional Chief Secretary,
    Govt. of Assam

16. **Shri Deva Pampapathi Reddy**
    Additional Chief Secretary,
    Industries and Commerce,
    Govt. of Punjab

3. INSTITUTIONAL ADVISORY BOARD

Prof. P. G. Rao
Advisor
Email: pgrao24@hotmail.com

Prof. Samir Bhattacharya
Advisor
Email: bhattacharyasa@gmail.com

Mr. Lanka Srinivas
Advisor
Email: slanka9@gmail.com

4. FUNCTIONING LOCATIONS OF NIPER-GUWAHATI

@ NITS-MIRZA [Administration & Dept. of Pharmacology]

@ GNRC Hospital [Dept. of Pharmacy Practice]

@ GUWAHATI BIOTECH PARK (IIT Guwahati Campus) [Dept. of Biotechnology]

5. ABOUT NIPER-GUWAHATI

The National Institute of Pharmaceutical Education and Research (NIPER) has been established under the aegis of Ministry of Chemicals and Fertilizers, Government of India, Dept. of Pharmaceuticals as a Centre of Excellence in imparting higher education, research and development in pharmaceutical sciences in many parts of our country. As per the notification of Government of India on 26th June 1998, the NIPER was declared as an Institute of National Importance through an Act of Parliament. The NIPER-Guwahati is the fifth institute among seven NIPERs started functioning from September, 2008 under the mentorship of Gauhati Medical College and Hospital, Assam. In the same year, the journey of NIPER-Guwahati started by admitting students with two postgraduate courses namely, M.S. (Pharm) Pharmacology & Toxicology and M. Pharm. Pharmacy Practice. In 2010, the NIPER-Guwahati started offering M.S. (Pharm) in Biotechnology course. This institute has started its journey of doctoral degree program by offering the Ph.D. in the Department of Pharmacology & Toxicology from 2011 onwards. Subsequently expanded its Ph.D. program in two other departments namely, Biotechnology and Pharmacy practice from the academic years of 2014 and 2015, respectively.

6. VISION & MISSION

VISION

To be an institution of excellence in promoting high standard pharmaceutical education & research through the dissemination of knowledge for the ultimate benefit of the society and pharmaceutical industries

MISSION

- Toning up the level of pharmaceutical education and research by training the future teachers, research scientists and managers for the pharmaceutical industry
- To carry out world class innovative research in Pharmaceutical Sciences
- To cater the needs of pharmaceutical industry and other research
- Study of sociological aspects of drug use and rural pharmacy
- To be one of the principal sources of professional manpower in the field of pharmaceutical and related sectors

7. FUNCTIONAL COMMITTEES

7.1 Academic Monitoring Committee
i. Registrar (Chairman)
ii. Dr. P.G. Rao (Adviser)
iii. Deputy Registrar (Academic) - Member
iv. Incharge - Department of Pharmacology - Member
v. Incharge - Department of Pharmacy Practice - Member
vi. Incharge - Department of Biotechnology - Member
vii. Controller of Examinations - Member

7.2 Building Construction Monitoring Committee
i. Dr. P.G. Rao (Adviser)
ii. Dr. Arun Ch. Borsaikia (IIT-Guwahati) - Member
iii. Dr. VGM Naidu - Member
iv. Dr. Utpal Mohan - Member
v. Registrar (Ex-officio) - Member
vi. FAO - Member
vii. Dy-Registrar - Member

7.3 Internal Purchase Committee
i. Registrar (Ex-officio)
ii. Dr. VGM Naidu - Member
iii. Dr. Utpal Mohan - Member
iv. Purchase Officer (Ex-officio)
v. FAO (Ex-officio)

7.4 Internal Complaint Committee for Sexual Harassment of Woman at Workplace
i. Mrs. Nijara Sarmah (Incharge)
ii. Dr. Urmila Aswar
iii. Mrs. Swapna Mannepuli
iv. Dr. Ranadeep Gogoi
v. Girl's Hostel Student Representative

7.5 Hostel Grievance Cell
i. Warden (Girl's Hostel)
ii. Warden (Boy's Hostel)
iii. Dr. VGM Naidu
iv. Dr. Urmila Aswar

7.6 Student Welfare Committee
i. Dr. Urmila Aswar
ii. Dr. Utpal Mohan

7.7 Library Committee
i. Dr. Utpal Mohan (In-charge)
ii. Mrs. Nijara Sarmah - Member
iii. Dr. Pavan Kumar Samudrala
iv. Dr. Ratan Lihite

7.8 Committee for Documentation
i. Dr. VGM Naidu
ii. Dr. Urmila Aswar
iii. Dr. Ranadeep Gogoi

7.9 Placement Committee
i. Dr. Urmila Aswar (In-charge)
ii. Dr. Ranadeep Gogoi - Member
iii. Dr. Ratan Lihite

8. FACULTY

8.1 Faculty Members

His area of research interests are Molecular pharmacology, cancer targeted drug delivery systems, Animal cell culture and its application for cell based drug assays; Screening Indian biodiversity and Indian Systems of Medicine in search of newer compounds in the area of inflammation, arthritis, diabetes, cancer and cancer induced bone disorders. He is mainly focussed on targeting PI3 Kinases, wnt signalling network and autophagy to identify lead compounds for the treatment of cancer.

Dr. VGM Naidu
Dean i/c & Associate Professor
Incharge-Dept. of Pharmacology & Toxicology
Email: vgmnaidu@niperguwahati.ac.in

His research interests are screening of anti-cancer and anti-diabetic potential of NCE'S and plant products on chemically induced cancer models and screening of NCEs on cardiovascular and neurodegenerative diseases.

Dr. Pavan Kumar Samudrala
Assistant Professor
Dept. of Pharmacology & Toxicology
Email : pavan@niperguwahati.ac.in

Her area of research interests includes pharmacodynamic and pharmacokinetic evaluation of novel drugs and formulations using various preclinical animal models. She has worked on projects such as neurodegenerative diseases like: Parkinson's disease, Levodopa induced dyskinesia, Depression, Alzheimer's disease and associated disorders such as anger, aggression and suicidal tendency. Additionally, studying the role of HPA axis function, mitochondrial dysfunction and oxidative stress in these disorders. She has completed various industrial projects related to anabolic and androgenic activity, cardiovascular complications, benign prostatic hyperplasia, diabetes induced glycation, glomerulonephritis, allergies, migraine and inflammation. She has made an attempt to explore the mechanism of action of one of the NCE on expression of TGF β, EGF, IGF 1, FXR, NF-kB, PCNA, PGC 1α, PTEN, RAS, smad 7 in experimental benign prostatic hyperplasia, thereby providing an alternative pathway of the NCE different from that of standard drug Finasteride.

Dr. Urmila Aswar
Associate Professor
Incharge - Dept. of Pharmay Practice
Email :urmilaaswar@niperguwahati.ac.in

His research interests are Pharmaceutical care practices which involves identifying, resolving and preventing actual or potential drug-related problems. His interest also lies in Pharmacovigilance for monitoring and evaluating ADRs as it is a key component of effective drug regulation systems, clinical practice and public health.

Dr. Ratan J. Lihite
Lecturer
Dept. of Pharmay Practice
Email : ratanlihite@niperguwahati.ac.in

His research interest is on Molecular Genomics and Proteomics to target the therapeutic efficacy of dreaded diseases. Investigation and evaluation of active principles from natural sources followed by the experimentation on in-vitro as well as in-vivo to observe the efficacy as well as therapeutic potential of target disorders.

Dr. Ranadeep Gogoi
Assistant Professor
Incharge - Dept. of Biotechnology
Email : gogoiranadeep@niperguwahati.ac.in

His lab focuses on Synthetic Biology and Bimolecular Engineering for the development of biopharmaceuticals. Key areas where his lab is focusing at present are Deoxyribozymes; Riboswitch mediated gene regulation of oncogenes; Generation of Template Independent Coding Sequences (GeneTICS); Immune rerouting, Aptamer based therapeutics and diagnostic tools. Apart from the creation of entirely novel gene and protein libraries for the development of biopharmaceuticals and novel industrial enzymes using the Gene TICS, his research group would further like to utilize this tool to develop synthetic ribozymes and deoxyribozymes for antiviral and anticancer activities. The group is also working on gene regulation of oncogenes and genes crucial for pathogenesis or survival of infectious microorganisms through Untranslated regions (UTRs) of mRNA. 5' UTR mediated gene regulation is a possible way to stop/decrease disease progress and pathogenesis. The group is further interested in generating G-quadruplex based synthetic riboswitches and their introduction in 5'UTR of oncogenes to downregulate the oncogenes. His lab is currently focussing on evolving mRNA cleaving DNAzymes and have devised a unique approach for evolving trans mRNA cleaving deoxyribozymes.

Dr. Utpal Mohan
Assistant Professor
Dept. of Biotechnology
Email : utpal.mohan@niperguwahati.ac.in

8.2 Women Scientist

Her interest lies in engineering of proteins for therapeutic applications. She is currently working on exploitation of cell surface differences between a Cancerous cell and a normal cell using Biomolecular engineering approaches. She has expertise on protein engineering/enzyme access tunnel engineering and intends to utilize this approach in generating Biopharmaceuticals and Enzymes which can catalyse pharmaceutically relevant biotransformations. She has special interest in Protein-Ligand interaction in diseased conditions.

Dr. Shubhangi Kaushik
DST Women Scientist
Email : shubhangikaushik@niperguwahati.ac.in

8.3 Visiting Faculty Members

1. **Dr. Ranjan Tamuli**
   Associate Professor,
   Department of Biosciences & Engineering
   IIT-Guwahati

2. **Dr. Ashish Anand**
   Assistant Professor,
   Department of Computer Science & Engineering
   IIT-Guwahati

3. **Dr. Anil Mukund Limai**
   Assistant Professor,
   Department of Biosciences and Bioengineering
   IIT-Guwahati

4. **Dr. Amit Awekar**
   Assistant Professor,
   Department of Computer Science & Engineering
   IIT-Guwahati

5. **Dr. D Krishna**
   Director-grade Scientist and Head,
   Computer Centre, IICT,(Retd.)
   Hyderabad

6. **Dr. Manoj Rastogi**
   Lecturer
   NIPER-Hazipur

7. **Dr. Krishna Murti**
   Lecturer
   NIPER-Hazipur

8. **Prof. M.K. Unnikrishnan**
   National College of Pharmacy,
   KMCT Group of Institutions
   Manassery, Mukkam, Kozhikode

9. **Dr. (Mrs) C.C Barua**
   Professor
   Department of Pharmacology
   College of Veterinary Sciences,
   Assam Agricultural University,
   Khanapara, Guwahati.

10. **Dr. Pritam Mohan**
    Professor
    Department of Pharmacology
    College of Veterinary Sciences
    Assam Agricultural University
    Khanapara, Guwahati.

11. **Dr. Rajeev Arab**
    Former IMO
    CSIR-IICT
    Hyderabad.

9. ADMINISTRATIVE & TECHNICAL STAFF

Dr. USN Murty
Director

Mr. L. Sivaji
Registrar

Dr. Gautam Kr. Sarmah
Dy. Registrar
Acad. & Exams

Mrs. Nijara Sarmah
System Administrator

Mrs. M. Swapna Devi
Secretary to Director

Mr. Bitu Nath
Asst Grade III
Acad. & Exams

Mr. Girindra Das
Asst Grade III
Fin. & Accounts

Mr. Dulal Das
Asst Grade III
Stores & Purchase

Mr. Nilotpal Kaushik
Jr. Technical Assistant

Mr. Ankur Gogoi
Technical Assistant

Mr. Chanakya Adhikari
Technical Assistant

Ms. Bansmita Das
Project Assistant

10. DETAILS OF STUDENTS

10.1 Ph.D Scholars

Department: Pharmacology & Toxicology			
Batch	**Name of the Scholar**	**Name of the Supervisor/Co-Supervisor**	**Topic of Research**
2013	**ATHIRA K.V**	Dr Mangla Lahkar/Dr Pavan	Impact of hypothalamic-pituitary adrenal axis dysregulation and hippocampal alteration in depression, Novel insights in Vorinostat a HDAC inhibitor
	M. RAJARAM MOHANRAO	Dr Bezbarua/Dr Pavan	Elucidation of the role of NF-κβ iNOS and COX-2on lipopolysaccharide induced depressive like behavior in BALB/C mice
2014	**SAHABUDDIN AHMED**	Dr Bezbarua/Dr VGM Naidu	Elucidating the role of Mitochondrial dysfunction and Endoplasmic Reticulum stress in animal model of Parkinson Disease using pharmacological intervention.
	MOHIT KWATRA	Dr VGM Naidu	Exploiting the role of redox-signaling mediators and regulator of G-Protein signaling in invitro of in-vivo model of Parkinson's Disease: Implication of pharmacological Interventions
2015	**MALAYAMARUYSHAM KALYANKUMARRAJU**	Dr VGM Naidu	Pharmacological screening of medicinal plants of North East for the treatment of inflammatory disease.
2016	**BASVESHWAR GAWALI**	Dr VGM Naidu	Pharmacological Evaluation of Synthetic Novel Amide Lipids for Therapeutic Intervention of Cancer
	ARUN KUMAR JANNU	Dr VGM Naidu	Design and fabrication of EphA2 receptor targeting lipid polymer hybrid particles for sensitizing breast and prostate cancer stem cells to enhance the efficiency of chemotherapy
2017	**ASHISH DANGI**	Dr VGM Naidu	To be assigned
	PRITAM SAHA	Dr VGM Naidu	To be assigned

Department: Biotechnology			
Batch	**Name of the Scholar**	**Name of the Supervisor/Co-Supervisor**	**Topic of Research**
2014	**B. VEERA VIJAY**	Dr Utpal Mohan	Studies on *in vitro* evolution of Bcl-2 mRNA cleaving Deoxyribozymes and analysis of anti-cancer activity
2015	**KALYANI TENE**	Dr Gogoi/Dr VGM Naidu	Pharmacological Evaluation of Novel Extracts of Medicinal Plants of North-East India against breast cancer
2016	**UPPULAPU SHRAVAN KUMAR**	Dr Utpal Mohan	Studies on Re-Routing of Immune system with high affinity cancer-cell binding aptamers
	GANGIPANGI VIJAYAKUMAR	Dr Utpal Mohan	*In vitro* evolution of mRNA cleaving Deoxyribozymes: Analysis of Anticancer activity and modification of evolved DNAzyme/s for higher Efficacy *in vitro* and *in vivo*
2017	**THOOL MADHURI KAWADU**	Dr Gogoi	To be assigned

Department: Pharmacy Practice			
Batch	**Name of the Scholar**	**Name of the Supervisor**	**Topic of Research**
2015	**G. SURENDER**	Dr Ramu adela	Evaluation of the Impact of Diabetes and other Co-morbidities on therapeutic management of women with breast cancer
2016	**DINESH REDDY SOMAGARI**	Dr USN Murty	Anti-Malarial Therapeutic Efficacy, failure/Drug Resistance in Co-relation with Molecular logistics
2017	**EBIN JOHNY**	Dr Ramu adela	Finding the effect of Vitamin D supplementation on coronary artery diseases in type 2 diabetes : Focusing on glycemic control and cardiac function and immunomodulation.

10.2 Master Degree Students (Session 2016-18)

Program:
M. Pharm (Pharmacy Practice, No. of Students: 08)

Sl No	Name of the Student	Registration Number	Name of Guide	Affiliation
1	Rayaz Ahmad Bhat	PP/2016-IX/065/MP	Dr. Akankasha Bisht & Dr. Urmila M Aswar	NIB, Noida UP & NIPER Guwahati, Assam
2	Vishal Tiwari	PP/2016-IX/066/MP	Dr. Akankasha Bisht & Dr. Ratan J Lihite	NIB, Noida UP & NIPER Guwahati, Assam
3	Amir Ali	PP/2016-IX/067/MP	Dr. N. J. Barkataky & Dr Ratan J Lihite	Ayursundra Hospital, Guwahati, Assam & NIPER-Guwahati, Assam
4	Purnima Shenoy S.	PP/2016-IX/068/MP	Dr. Ratn J Lihite	NIPER-Guwahati, Assam
5	KM Asha Chauhan	PP/2016-IX/069/MP	Dr. Urmila Aswar & Dr. Bhaskar Baruah	NIPER Guwahati & Gahuati Medical College & Hospital, Assam
6	KM Ranjana	PP/2016-IX/070/MP	Dr. Swaroop Kr. Baruah & Dr. Ratan J Lihite	Gauhati Medical College & Hospital, Assam & NIPER Guwahati
7	Jerripothula Harish	PP/2016-IX/071/MP	Dr. Nahid Islam & Dr. Ratan J Lihite	GNRC Dispur Assam and NIPER Guwahati, Assam
8	Jenibemo Lotha	PP/2016-IX/072/MP	Dr. Mousumi Borthakur & Dr. Urmila M Aswar	GNRC Six Mile, Guwahati, Assam and NIPER-Guwahati, Assam

Program:
MS (Pharmacology & Toxicology, No. of Students: 20)

Sl No	Name of the Student	Registration Number	Name Guide	Affiliation
1	Sagar Saha	PC/2016-IX/140/MP	Dr. Sadhna Sathaye & Dr. Padma V. Devaranjan	ICT Mumbai
2	Konanki Swapna	PC/2016-IX/141/MP	Dr. V. G. M. Naidu & Dr Srujan Marepally	NIPER-Guwahati, Assam and CSCR, Vellore
3	Achyuta Prameela Rani	PC/2016-IX/142/MP	Dr. Pavan K S	NIPER-Guwahati, Assam
4	Shah Smit Miteshkumar	PC/2016-IX/143/MP	Dr. Sadhna Sathaye & Dr. Padma V. Devaranjan	ICT-Mumbai
5	Arjun Prasad P	PC/2016-IX/144/MP	Dr. VGM Naidu	NIPER-Guwahati, Assam
6	Kadam Prajakta Vitthal	PC/2016-IX/145/MP	Dr. Srigiridhar Kotamraju	CSIR-IICT, Hyderabad
7	Y. Mounica	PC/2016-IX/146/MP	Dr. Sumana Chakravarty	CSIR-IICT Hyderabad
8	Anupam Agnihotri	PC/2016-IX/147/MP	Dr. Chandan C Baruah	College of Veterinary Science, Khanapara, Guwahati, Assam
9	Bohari Taher Shabbir	PC/2016-IX/148/MP	Dr. Ramars Amancy	CSIR IICT, Hyderabad
10	Abdul Jaleel K V	PC/2016-IX/149/MP	Dr. Ramars Amancy	CSIR-IICT, Hyderabad
11	Antra Pant	PC/2016-IX/150/MP	Dr. V. G. M. Naidu & Dr. Srujan Marepally	NIPER Guwahati Assam and CSCR, Vellore
12	Dipak Kumar Sahu	PC/2016-IX/151/MP	Dr. Biman Mandal	IIT-Guwahati, Assam
13	Gosika Apoorva	PC/2016-IX/152/MP	Dr. Ramkrishna Sistla	CSIR-IICT, Hyderabad
14	Bhadade Chakradhar Nathuram	PC/2016-IX/153/MP	Dr. Urmila M Aswar	NIPER Guwahati Assam
15	Indrakanti Kalpana	PC/2016-IX/154/MP	Dr. Pavan K S	NIPER-Guwahati, Assam
16	Madugula Madhavi	PC/2016-IX/155/MP	Dr. Sumana Chakravarty	CSIR-IICT, Hyderabad
17	Sandeep Kumar	PC/2016-IX/156/MP	Dr. Chandan C Baruah	College of Veterinary Science, Khanapara, Guwahati, Assam
18	Shobha Kumari	PC/2016-IX/157/MP	Dr. Pavan K S	NIPER Guwahati, Assam
19	Tehewuzou Lohe	PC/2016-IX/158/MP	Dr. Biman Kr Mandal & Dr. Pavan K S	IIT Guwahati, Assam and NIPER Guwahati, Assam
20	Saviz-o Kezieo	PC/2016-IX/159/MP	Dr. V. G. M. Naidu & Dr. M. Krishna Reddy Mudiam	NIPER Guwahati, Assam and CSIR-IICT Hyderabad

Program:
MS (Biotechnology, Number of Students: 07)

Sl No	Name of the Student	Registration Number	Name of Guide	Affiliation
1	Prajakta Prakash Deshmukh	BT/2016-VII/051/MP	Dr. Utpal Mohan & Dr. Swapnil Sinha	NIPER-Guwahati, Assam
2	Abiya Johnson	BT/2016-VII/052/MP	Dr. Utpal Mohan & Dr. Swapnil Sinha	NIPER-Guwahati, Assam
3	Shashikant Umakant Patil	BT/2016-VII/053/MP	Dr. Abhay H. Pande & Dr. Ranadeep Gogoi	NIPER-SAS Nagar and NIPER-Guwahati,Assam
4	Vijay kumar G Agrawal	BT/2016-VII/054/MP	Dr Anthony Addlagatta & Dr. Ranadeep Gogoi	CSIR-IICT Hyderabad and NIPER Guwahati, Assam
5	Thimmapuram Manasa	BT/2016-VII/055/MP	Dr. Utpal Mohan	NIPER-Guwahati, Assam
6	Kolimigundla Sireesha	BT/2016-VII/056/MP	Dr. Ranadeep Gogoi	NIPER-Guwahati, Assam
7	Mahesh	BT/2016-VII/057/MP	Dr. Ranadeep Gogoi	NIPER-Guwahati, Assam

11. IMPACT AND HIGHLIGHTS OF 2016-2018

The establishment of NIPER-Guwahati has given a strong boost to the promotion of Pharmaceutical Education & Research in the North East India. Research efforts of NIPER have revived the pharmacological studies on medicinal value of local herbs of North East Region against various diseases. A significant increase has been observed (39/40) in the MS (Pharm) seats filled during this academic year (2017-2018), which reflects the growing reputation and the stature of NIPER among the students and the Industrial counterparts. The current academic session started from new temporary campus at NITS Mirza, with sufficient space to support the Research and Teaching activities. All three departments are taking progressive strides and moving towards accomplishment of Institute's short and long term targets. The Institute has entered into several MoUs with leading Research institutes, Hospitals and Pharmaceutical Industries to give students and faculty the best of the academic and research supports to eventually come up with technologies and products for the benefit of the society.

Highlights of 2016-2018

1) **Biotechnology Conference-** NIPER-Guwahati organized a DBT sponsored National Workshop on Biotechnology on 29th March-3rd April 2016. The theme of this workshop was **"Current Trends of Biotechnology in Biomedical Research"**. All the students of NIPER-Guwahati participated in this workshop and were immensely benefitted from informative talks by eminent Scientists and Teachers.

2) **Peer Review team's visit to NIPER-Guwahati** – A five member team of NIPER-Ahmedabad visited NIPER-Guwahati campus on 27th and 28th April, 2016 to evaluate the academic, administrative and financial activities. The team has lauded NIPER-Guwahati for the quantum of publications and suggested several measures to improve the administrative and academic environment of this institute.

3) **National skill development and hands- on- training on quality control of Biologicals-** A 3 week study tour program of the students of NIPER-Guwahati campus was conducted at National Institute of Biologicals (NIB) headed by Assistant Professor Dr. Pavan Kumar Samudrala. The students of NIPER-Guwahati from all 3 departments (PC, PP, and BT) participated in National skill development and hands-on training on quality control of biologicals in National Institute of Biologicals, (NIB)-Noida, from 8th August to 26th August 2016. National Institute of Biologicals, an autonomous Institution under the Ministry of Health & Family Welfare (MOHFW)-Government of India is a premier scientific organization and a Centre of Excellence to ensure quality of Biologicals and vaccines in the country. The main objectives of the training program are to develop and enhance analytical skills and technical knowledge of students through Hands-on training on Quality control of Biologicals in the areas of Bio therapeutics, Diagnostics, Bacterial & Viral Vaccines, Blood products, Blood group

serology, Animal facility, Laboratory Quality Management System, Haemovigilance Program of India and Planning and carrying out a National Drug survey for Spurious and Nonstandard Quality drugs in the country. Finally, Skilled and trained manpower is an important and key component for scientific development. The training program provided by NIB facilitated the skill development in this niche area for the students to meet the challenges of present and future their work.

4) **NIPER-Guwahati got its first Permanent Director, Dr. USN Murty:** On 3rd November 2016, Dr. USN Murty (Chief Scientist, CSIR-IICT, Hyderabad) joined at NIPER-Guwahati as its founder Director. Dr. Murty brought with himself 40 years of rich research experience to NIPER-Guwahati and is spearheading the phenomenal growth of the Institute.

5) **MoU with Guwahati Biotech Park and UND Life Science, USA:** On 5th December 2016, Dr USN Murty, Director, NIPER-Guwahati exchanged a MoU with Mr. Vinod Seshan, IAS, Deputy Commissioner, Kamrup District and CEO, Guwahati Biotech Park in the august presence of Mr. Sarbananda Sonowal, Chief Minister of Assam; (Chairman of GBP) Mr. Keshav Mahanta, Science and Technology Minister, Govt. of Assam. At the same venue, a MoU was signed with Prof. Undurti Das, CEO, UND Life Sciences, USA.

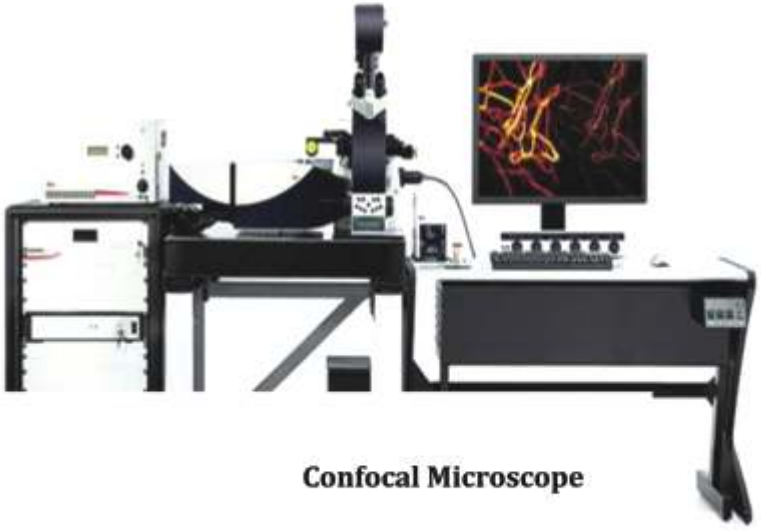
6) **2nd Convocation of NIPER-Guwahati-** NIPER-Guwahati organized its 2nd Convocation on 28th March 2017. Dr. Vishwa Mohan Katoch, NASI-ICMR Chair at RUHS, Jaipur, Former Secretary, Department of Health Research, MoHFW, GoI, Director-General, Indian Council of Medical Research was the Chief Guest of the function and delivered the Convocation Address. The event was also attended by Prof. Kiran Kalia, Director, NIPER-Ahmedabad; Prof. Nagarajan, Prof. C.L. Kaul, Founder Director, NIPER-SAS Nagar; Prof. P. V. Bharatam, Dean, NIPER- SAS Nagar and other dignitaries.

7) **iGEM-2017:** NIPER-Guwahati is pleased to announce that we were one of the 5 winners of iBEC 2017 Competition and represented the country for the first time among all NIPERs at iGEM, MIT, Boston. Dr. Utpal Mohan, Asst. Professor, NIPER-G along with NIPER students, participated in iGEM2017 at MIT, Boston, in November 2017.

   The student's team from NIPER-Guwahati which visited Boston comprised of following students- Prajakta Deshmukh, Shashikant Patil and Arjun Prasad. Ms. T. Manasa's US Trip was supported by Sri PVSLN Murty, Chief General Manager, SBI, North East Circle under CSR.

12. CENTRAL INSTRUMENTATION FACILITY

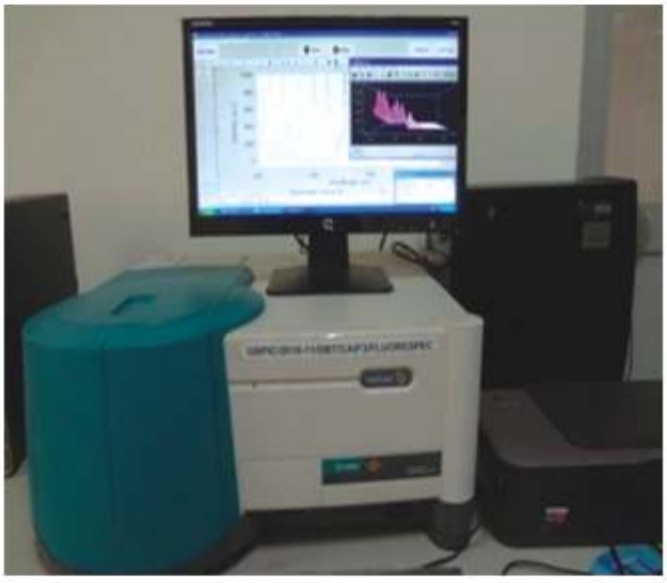
Small Animal Imaging System



Confocal Microscope

Flow Cytometer

Automated analytical and semi-preparative HPLC



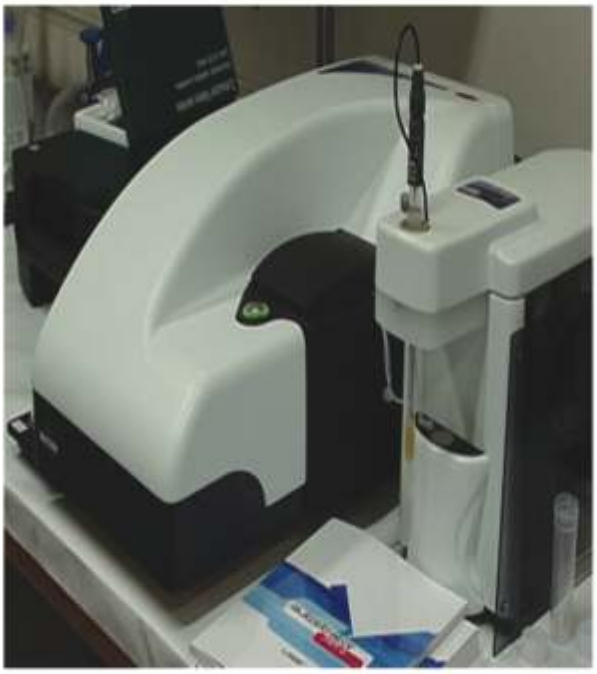
Fluorescence Spectrophotometer

FT-NIR Spectroscopy

High Performance Thin Layer Chromatography (HPTLC) @ GBP

Gas-chromatography Mass Spectrometer (GCMS) @ GBP

LC-MS/MS



Zetasizer

Nanospray Dryer

Ultracentrifuge

CHN Elemental Analyzer @ GBP

Automated Dissolution
Test Apparatus with Autosampler

Differential Scanning Calorimetry (DSC)

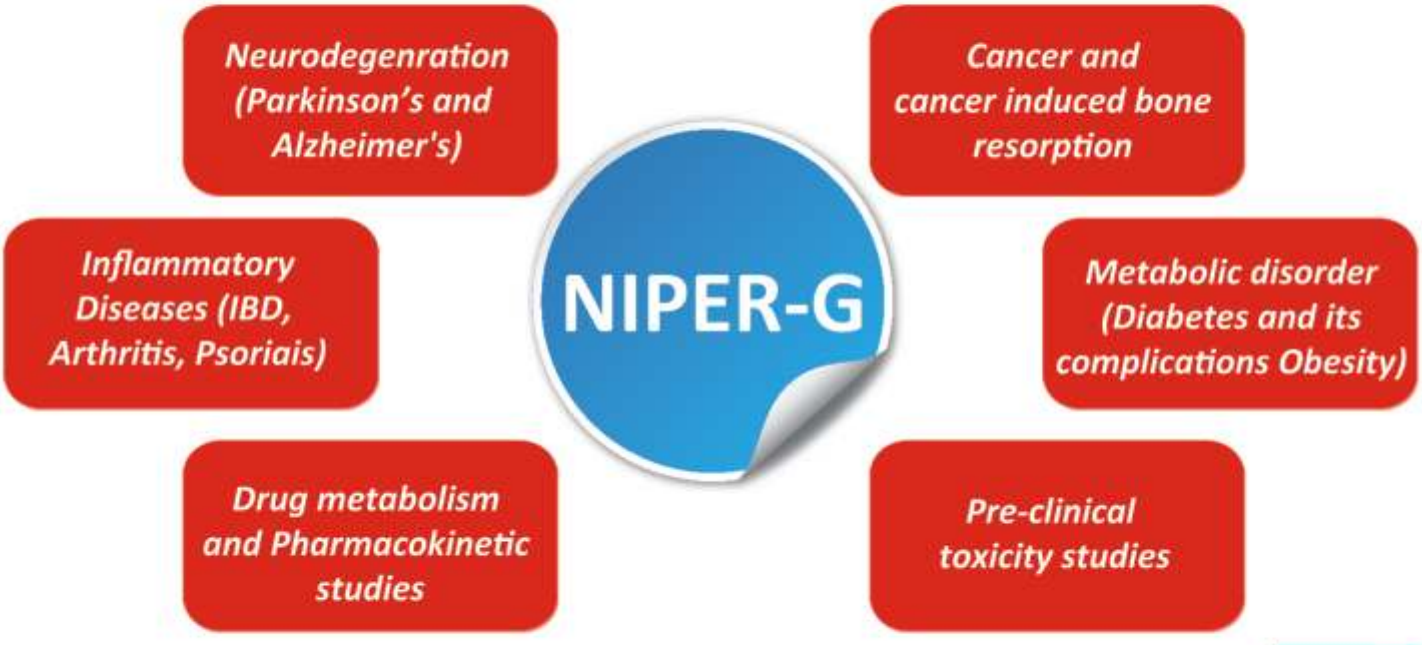
13. RESEARCH ACTIVITIES

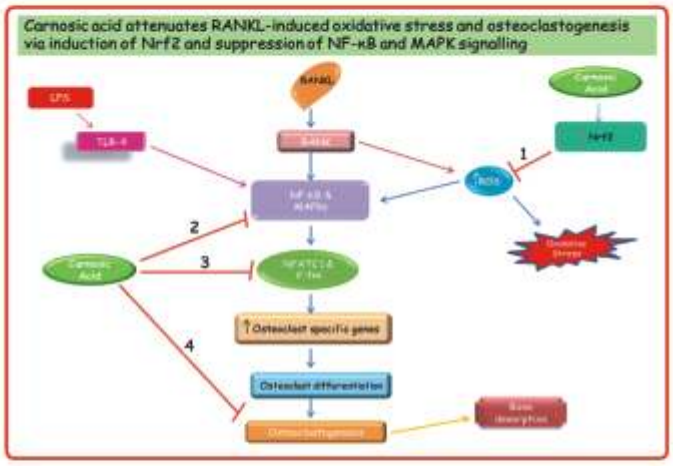
13.1 Department of Pharmacology and Toxicology

The Department of Pharmacology and Toxicology at the National Institute of Pharmaceutical Education and Research (NIPER) Guwahati was established on 16th September 2008 to contribute the fascinating and emerging area of Pharmacological and Toxicological sciences. This department runs the masters M.S (Pharm) and doctorate (Ph.D.) academic programmes. The Department is at the forefront of research into the effects of drugs (synthetics as well as natural phytochemicals) on biological systems with a view to understand the mechanisms on the human body. Pre-clinical research in the department aims to examine cellular and molecular pathways in living systems as the first step towards drug development.

Major thrust Areas of the Department:

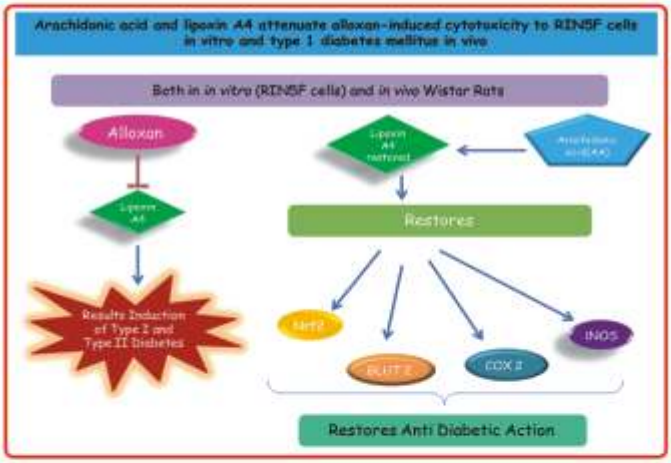
***In vitro and In vivo* pharmacological screening of indigenous medicinal plants of NE and NCEs synthesized against various target in the following therapeutic areas**

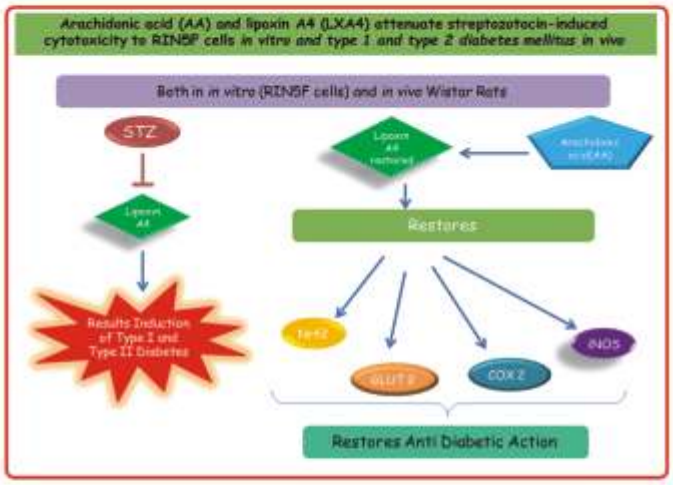




Nuclear factor-erythroid 2-related factor 2 (Nrf2) is a redox sensitive transcription factor, which plays a role in the cellular defense against oxidative stress. In the current study, we sought to investigate the osteoprotective effect of carnosic acid (CA), a phenolic (catecholic) diterpene. Osteoclast differentiation was induced by incubation of RAW 264.7 (mouse macrophage) cells and mouse bone marrow macrophages (BMMs) in the presence of receptor activator of NF-κB ligand (RANKL) (100 ng/ml). After treatment, osteoclastogenesis was assessed using tartrate-resistant acid phosphatase (TRAP) assay. We observed that pretreatment with CA (1.25, 2.5, 5 μM) decreased RANKL-induced osteoclast formation and abolished RANKL-induced ROS generation by activating Nrf2 and its transcriptional targets. Further, CA also inhibited RANKL induced activation of NF-κB and MAPK signalling. In vivo osteolysis was performed in C57BL/6 male mice using lipopolysaccharide (LPS) by using μ-CT analysis of femurs shows that bone mineral density (BMD), bone mineral content (BMC), and bone architecture parameters such as trabecular thickness (Tb.Th) and trabecular space (Tb.Sp) were positively modulated by CA. From the above analysis, the result shows that CA inhibits RANKL-induced osteoclastogenesis by maintaining redox homeostasis through modulation of Nrf2 and NF-κB pathways (Journal of Molecular Medicine, 2017;95(10):1065-1076)

We studied whether polyunsaturated fatty acids (PUFAs) can protect rat insulinoma (RIN5F) cells against alloxan-induced apoptosis in vitro and type 1 diabetes mellitus (type 1 DM) in vivo and if so, mechanism of this beneficial action. The effect of PUFAs, cyclo-oxygenase and lipoxygenase inhibitors, various eicosanoids and PUFAs metabolites: lipoxin A4 (LXA4), resolvin D2 and protectin against alloxan-induced cytotoxicity to RIN5F cells and type 1 DM in wistar rats was performed. Expression of PDX1, P65 NF-kB and IKB in RIN5F cells and Nrf2, GLUT2, COX2, iNOS protein levels in the pancreatic tissue and plasma glucose, insulin and tumor necrosis factor-a and antioxidants, lipid peroxides and nitric oxide were measured. Results shows arachidonic acid (AA) was found to be the most effective against alloxan-induced cytotoxicity to RIN5F cells and preventing type 1 DM in rats. Alloxan inhibited LXA4 production by RIN5F cells and in alloxan-induced type 1 DM Wistar rats. AA treatment restored LXA4 levels to normal both in vitro and in vivo. LXA4 protected RIN5F cells against alloxan-induced cytotoxicity and prevented type 1 DM and restored expression of Nrf2, Glut2, COX2, and iNOS genes and abnormal antioxidants to near normal. AA seems to bring about its beneficial actions against alloxan-induced cytotoxicity and type 1 DM by enhancing the production of LXA4 (Biofactors. 2017 Mar;43(2):251-271 in collaboration with UND Life Sciences, USA).





The aim of the study was to observe whether polyunsaturated fatty acids (PUFAs) can protect rat insulinoma (RIN5F) cells against streptozotocin (STZ)-induced apoptosis in vitro and type 1 diabetes mellitus (type 1 DM) and type 2 DM in vivo and if so, what could be the mechanism of this action. The effect of PUFAs: gamma-linolenic acid (GLA), arachidonic acid (AA) of n-6 series and eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) of n-3 series; cyclo-oxygenase and lipoxygenase inhibitors and anti-inflammatory metabolite of AA and DHA, lipoxin A4 (LXA4), and resolvin D2 and protectin respectively against STZ-induced cytotoxicity to RIN5F cells in vitro and LXA4 against type 1 DM and type 2 was performed in wistar rats. Changes in the antioxidant content, lipid peroxides, nitric oxide and expression of PDX1, P65 Nf-Kb and IKB genes in STZ-treated RIN5F cells in vitro and Nrf2, GLUT2, COX2, iNOS protein levels in the pancreatic tissue of type 1 and type 2 DM and LPCLN2 (Lipocalin 2), NfKb, IKB I in adipose tissue of type 2 DM following LXA4 treatment were studied. Plasma glucose, insulin and tumor necrosis factor-α levels were also measured in STZ-induced type 1 and type 2 DM Wistar rats.PUFAs tested, AA and EPA are the most effective against to STZ induced cytotoxicity to RIN5F cells in vitro. LXA4 production by RIN5F cells in vitro and plasma LXA4 levels in STZ-induced type 1 and type 2 DM animals were decreased by STZ that reverted to normal following AA treatment. AA prevented both type 1 and type 2 DM induced by STZ. Anti-inflammatory metabolite of AA, LXA4, prevented both type 1 and type 2 DM induced by STZ. The expression of Pdx1, Nf-Kb, IKB genes in the pancreas and plasma, TNF-α levels in type 1 and type 2 DM; Nrf2, Glut2, COX2 and iNOS proteins in pancreatic tissue of type 1 DM and LPCLN2 (Lipocalin 2), Nf-Kb, IKB I in adipose tissue of type 2 DM reverted to normal in LXA4 treated animals. Both AA and LXA4 prevented STZ-induced cytotoxicity to RIN5F cells in vitro and type 1 and type 2 DM in vivo, suggesting that these two bioactive lipids (AA and LXA4) may function as anti-diabetic molecules. AA seems to bring about its beneficial actions against STZ induced cytotoxicity and type 1 and type 2 DM by enhancing the production of LXA4 (Nutrition. 2017;35:61-80, in collaboration with UND Life Sciences, USA).

Uridine Ameliorates Dextran Sulfate Sodium (DSS)-Induced Colitis in Mice

Uridine, one of the four components that comprise RNA, has attracted attention as a novel therapeutic modulator of inflammation. However, very little is known about its effect on intestinal inflammation. The aim of the present study was to investigate the potential protective effect of intracolonic administered uridine against DSS induced colitis in male C57BL/6 mice. Intracolonic instillation of 3 doses of uridine 1mg/Kg (lower dose), 5mg/Kg (medium dose), and 10mg/Kg (higher dose) in saline was performed daily. Uridine at medium and high dose significantly reduced the severity of colitis (DAI score) and alleviated the macroscopic and microscopic signs of the disease. The levels of proinflammatory cytokines IL-6, IL-1β and TNF in serum as well as mRNA expression in colon were significantly reduced in the uridine treated groups. Moreover, colon tissue myloperoxidase activities, protein expression of IL-6, TNF- α, COX-2, P-NFkB and P-Ikk-βα in the colon tissues were significantly reduced in medium and high dose groups. These findings demonstrated that local administration of uridine alleviated experimental colitis in male C57BL/6 mice accompanied by the inhibition of neutrophil infiltration and NF-κB signaling. Thus, Uridine may be a promising candidate for future use in the treatment of inflammatory bowel disease (Scientific reports, 2017; 7 doi:10.1038/s41598-017-04041-9)

13.2 Department of Pharmacy Practice

Pharmacovigilance with Pharmacogenomics:
In India, there is large inter-individual variability in the response to drug therapy – in terms of both efficacy and safety, mostly due to gene-environmental interactions. Some of the variation is related to inherited or non-inherited characteristics of the genome, i.e. variations or activation/ suppression of genome functions.

Pharmaceutical Care and Patient Counselling with respect to Pharmacovigilance and Rational Drug use at OPD at Bamundi Village

These genomic variations may relate to drug disposition (pharmacokinetics) or drug action (pharmacodynamics) or to individual's susceptibility. Consequently, there may be subsets of patients with a different benefit/risk profile. Genomic factors may play a role in the pathogenesis of both predictable and idiosyncratic adverse drug reactions (ADRs). New strategies should also be followed when identifying new signals from pharmacovigilance as the traditional way of dealing with spontaneous reports of adverse drug reactions has inherent limitations. The analysis of genomic biomarkers that influence the exposure levels of drug or metabolite(s), and thereby relate to dose/concentration-dependent effects has the potential to increase the safety and efficacy of drugs during therapy. The role of drug metabolizing enzymes and transporter proteins relevant for each drug from uptake to final elimination are expected to have been elucidated prior to approval of a new medicinal product. Similarly, the same is expected for polymorphic ADME enzymes and the genomic variations that influence drug-drug interactions, ADRs etc. Thus, pharmacogenomic methodologies in the pharmacovigilance evaluation of medicinal products need to be under considerations in risk management plan for targeted therapies and provides requirements for post-authorization genomic data monitoring and collection.

Drug utilization pattern
Pharmacy Practice students of NIPER-Guwahati have conducted various drug utilization studies at different departments of Gauhati Medical College and Hospital. In order to monitor prescription pattern and to overcome the drug related issues like polypharmacy, adverse drug reactions, inappropriate drug use etc., utilization studies are being conducted at tertiary care hospitals to enhance the patients' compliance. In general, literature generated by these drug utilization studies are beneficial and helpful to practitioners to ensure the rational use of drugs in patient community.

In this regard, following drug utilization studies have been carried out by the Dept. of Pharmacy Practice, NIPER-Guwahati:

1. Drug Utilization Pattern of Antiepileptic Drugs & Mood Stabilizers in Psychiatry Department of GMCH, Guwahati.
2. Drug Utilization Pattern in Neonatal Intensive Care Unit of Pediatric department.
3. Evaluation of drug prescribing pattern in patient with Myocardial Infarction with respect to Age, Sex, Diet, Smokers and Alcoholics at Cardiology department, GMCH, Guwahati

Pharmacovigilance
Students of pharmacy practice are working on Pharmacovigilance to monitor adverse drug reactions (ADR) in tertiary care hospitals of Guwahati. This city is a largest and highly populated city in North East India comprised of multi-linguistic tribe and ethnicity. Thus, to ensure the drug safety in these populations of vast variability, Pharmacovigilance studies are being conducted to safeguard the patients from drug related problems.

Following studies have been undertaken under Pharmacovigilance program :

1. An update on Pharmacovigilance Program of India.
2. Drug induced Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN) and SJS-TEN at dermatology department of Gauhati Medical College and Hospital.
3. Adverse drug reactions to first-line antiretroviral therapy in HIV infected patients.
4. Case studies:
   a) Lamotrigine Induced Dystonia in a patient with Bipolar Affective Disorder.
   b) An Early Sign of Wilson's Disease: Dysarthria
5. Pattern of suspected adverse drug reactions in department of dermatology at GMCH.

Haemovigilance

In an effort to monitor blood or blood product induced reactions, Haemovigilance study was conducted in blood bank of a tertiary care hospital, Guwahati. This initiative was taken to generate preliminary data on transfusion induced reactions to develop early precautionary measures needed in transfusion reactions. It was observed that most of the cases were female (62 patients) and were reported from the age range of 16 to 45 years (48 patients). During study period, 45,200 units of whole blood/component were transfused. Of these, 101 patients were reported with transfusion reactions. Majority of the patients had received whole blood (48.98%) and packed red blood cells (43.38%) transfusion. Thirty eight (37.62%) patients were reported with allergic reactions. Allergic reaction and FNHTR were mostly observed within 100ml of transfusion products. This year Pharmacy Practice Master students have been posted at National Coordinating Centre for Haemovigilance Programme of India for their dissertation work for in-depth knowledge and preparatory skill in Haemovigilance.

Pradhan Mantri
Bhartiya Jan Aushadhi Pariyojana (PMBJP)

This year short term projects have been assigned to our students with the aim to sensitize and create awareness in public about the quality medicines available at affordable prices for all, particularly the poor and disadvantaged sections.

Following are the projects assigned under this scheme:

A. Project in identifying and developing appropriate tender guidelines for impurities by comparing IP/BP/EP/USP for the molecules in PMBJP list.
B. Project in identifying various polymorphs that are likely to have high efficacy as compared to the other polymorphs for the molecules listed in PMBJP list.
C. Project in identifying right packaging materials that will enhance efficacy by comparing PMBJP packaging with key leaders in each product.
D. Project in developing packaging designs for each therapy area, for each molecule, for each product and strength as per marketing packaging strategy.

Outreach Program

Participation of NIPER-Guwahati in the free health check-up camp at Bamundi village, Assam organized by GNRC hospital, North Guwahati.

A day long free health check-up camp was organized by Guwahati Neurological Research Centre (GNRC), North Guwahati in association with MEDIREACH held on 3rd Sept. 2017 at Bamundi high school, for the dwellers of Bamundi village. This village is located in Kamrup rural district, in the state of Assam, India, situated near the North bank

Students and Faculty at free Health Check-up Camp organized by NIPER-Guwahati

Students dispensing medicines at free Health Check-up Camp

of river, Brahmaputra. This day long camp was started in the morning around 9.00 am with the overwhelming support of high school staff and locals of the village. In this camp, screening of patients with positive Symptomatology, free diagnosis, free prescription, advice and education to people about healthy living practices, and benefits of early intervention and preventive health care were provided. Free physical examination along with blood pressure measurement and ECG test were also performed. Dept. of Pharmacy Practice students; Chinju George, Om Prakash Kumar Thakur, Ranju Mishra, Shedage Kedar Tanaji, Samlet Shruti Sriniwas, Amal Prasad, Vibhute Prajakta Jadish, Hari R, and Erica Eva Nongbri have been actively participated in this free health check-up camp under the supervision of Dr. Urmila M Aswar and Dr. Ratan J Lihite. More than 200 patients have been visited to this health check-up camp. Out of which ECG testing was advised to 43 patients.

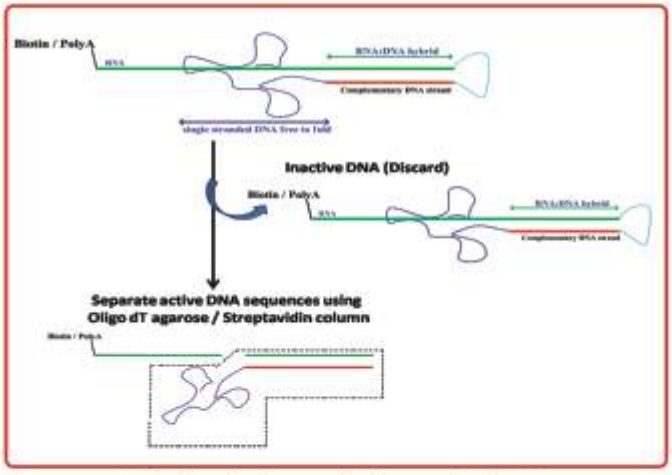
In this camp, free prescription of medicines were dispensed with free health check-up. Around 20 different medicines were available in the stock including tablets, suspensions, and injections. The students have played a vital role in setting up dispensing area as well as in dispensing prescribed medicines to the patients. Patients were also counselled by the NIPER-Guwahati students on rational use of medicines while dispensing the drugs. In this camp, the most commonly prescribed drugs were Diclofenac and Pantaprazole followed by Amlodipine, Amoxicillin and Potassium Clavulanate, Vitamin B-Complex, Antacids, and ORS. It was observed that more than 50% of the patients were suffering from high blood pressure and body ache. Doctors have advised them various medicines and consultation in this free health check-up camp. The NIPER-Guwahati greatly to acknowledged Dr. Partha Pratim Kalita, GNRC hospital and his team for organizing free health check-up camp.

13.3 Department of Biotechnology

I. Development of Biopharmaceuticals using Synthetic Biology approaches:

a) Development of mRNA cleaving Deoxyribozymes:

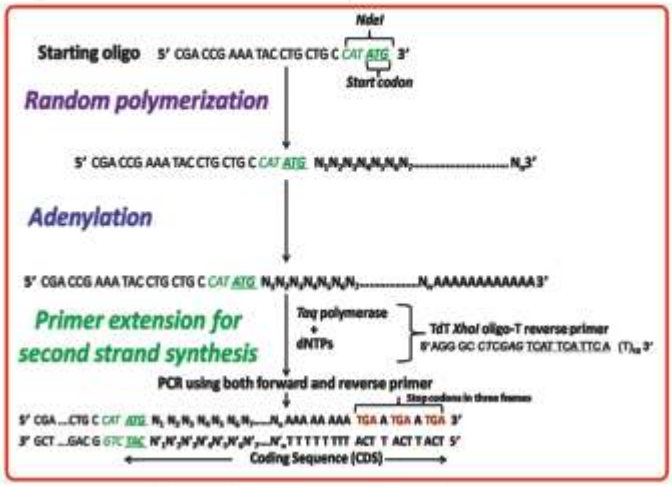
Deoxyribozymes are DNA molecules with catalytic activity. Unlike ribozymes, deoxyribozymes are not known to exist naturally. Artificial ribozymes and deoxyribozymes can readily be identified through in vitro selection where, large random-sequence 'pools' of nucleic acids are iteratively examined until a small number of catalytically active sequences are obtained. The current research proposal aims to develop deoxyribozymes (DNAzymes) that can cleave Bcl-2 and Mcl-1 mRNA through in vitro evolution (SELEX).



Exploring the huge single stranded DNA library for possible RNA cleaving deoxyribozymes

The random DNA libraries have bases complementary to specific regions of target mRNA (Bcl-2 and Mcl-1 and the individual ssDNA molecules which have RNA cleaving activity have been selected through an unique in vitro evolution strategy. Apart from evolving novel deoxyribozymes (DNAzymes) with the ability to cleave oncogenes Bcl-2-mRNA through in vitro evolution (SELEX), we also designed DNAzymes which are based on 10-23 and 8-17-DNAzymes catalytic domain and evaluated their Bcl-2 mRNA cleavage activity. We will modify the selected DNAzymes with modifications for increased stability. We have used Hep-G2 cancer cell lines for the in vitro validation of evolved Deoxyribozymes. Further, the selected and engineered DNAzymes will be assessed for their efficacy in an animal model of non-solid tumors using Ehrlich Ascitis Carcinoma Cells (EAC). The evolved DNAzymes that could cleave BCL-2 and MCL-1 mRNA specifically could be pursued for their development as Biopharmaceuticals. This study could help us to develop a general strategy for evolving RNA- cleaving DNAzymes through in vitro selection/ evolution.

b) GeneTICS: Though, directed evolution/in vitro evolution has greatly enhanced the applicability of natural biomolecules, there is still a big void in synthetic biology, which could be filled only when we are able to make novel/synthetic functional biomolecules. Terminal deoxyribonucleotidyl transferase (TdT) is the only known DNA polymerase, which can add deoxyribonucleotides without the requirement of a DNA template.



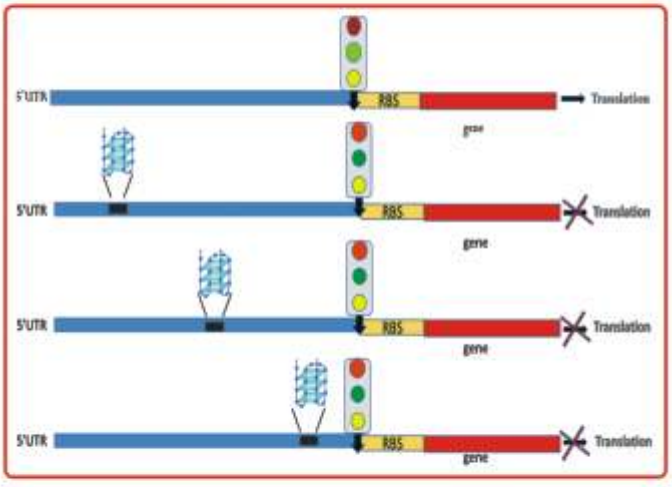
Schematic representation of GeneTICS

Here, we are introducing the concept of Template-Independent Synthesis of Nucleic Acids (TISNA), where we have exploited the property of terminal deoxyribonucleotidyl transferase to add deoxyribonucleotides to the 3' end of an oligonucleotide for the generation of de novo libraries of ssDNA,

dsDNA coding sequences and RNA. We are able to generate libraries that have diversity not only in sequence but also in length in a single library itself.

The length of double stranded random gene libraries generated using this approach ranges from 200 base pairs to 10 kilobase pairs. The ability to make random nucleic acid libraries from scratch (independent of any template information) in the laboratory could open up new avenues and holds promise for the pharmaceutical and biotechnological sectors. We are interested in Generation of Template Independent Coding Sequences (GeneTICS) for the creation of entirely novel gene and protein libraries for the development of biopharmaceuticals and novel industrial enzymes. We would further like to utilize this tool to develop synthetic ribozymes and deoxyribozymes for antiviral activity and anticancer activity.

c) Riboswitch mediated gene regulation: We are interested in gene regulation of oncogenes and genes crucial for pathogenesis or survival of infectious microorganisms through Untranslated regions (UTRs) of mRNA. 5' UTR mediated gene regulation is a possible way to stop/decrease disease progress and pathogenesis. We have developed a fluorescence EGFP-based platform to screen 'OFF' and 'ON' riboswitches in bacterial expression system.



Design of G-quadruplex based synthetic riboswitches for gene regulation

This construct backbone can be used to clone any 5'UTR of prokaryotic origin including other M.tb genes and can be used for screening ligand molecules for possible riboswitches. We have optimized the entire procedure of cell-SELEX on a prokaryotic cell system for the evolution of DNA Aptamers that can specifically identify and internalize in the target cells. Existence of G-quadruplex based riboswitch in Mycobacterium can be a very useful tool to develop drug intervening strategies for tuberculosis.

d) TLR Expression studies in cardiovascular disease patients and multiple myeloma patients: Cardiovascular disease is a complex disorder involving multiple path physiological processes, several of which involve activation of toll-like receptors (TLRs) of the innate immune system. As sentinels of innate immunity TLRs are none clonally germ line-encoded molecular pattern recognition receptors that recognize exogenous as well as tissue-derived molecular dangers signals promoting inflammation.

Our team investigated the real time expression of associated TLRs in cardiovascular disease and multiple myeloma patients.

- We are also investigating anticancer activity of certain plant species available in North Eastern region of India using Breast cancer cell line which is followed by isolation and purification of the active principles.

- Our team is also investigating on Peptide as a therapeutic tool in the treatment of oral cancer in *In-Vitro*. We have targeted on synthetic peptides following molecular docking and molecular dynamic simulation.

14. PUBLICATIONS

1. Athira KV, Rajaram Mohanrao, Madhanaa Indu, Chandran JS, MangalaLahkara, SwapnilSinha, VGM Naidu, Antidepressant activity of vorinostat is associated with amelioration of oxidative stress and inflammation in a corticosterone-induced chronic stress model in mice. Behavioural Brain Research. 2018;344:73-84.

2. Potnuri AG, Allakonda L, Lahkar M. Crocin attenuates cyclophosphamide induced testicular toxicity by preserving glutathione redox system. Biomedicine & Pharmacotherapy. 2018; 101:174-180.

3. Komirishetty P; Areti A; Gogoi R; Sistla R; Kumar A., Combination strategy of PARP inhibitor with antioxidant prevent bioenergetic deficits and inflammatory changes in CCI-induced neuropathy. Neuropharmacology. 2017; 113 (Pt A):137-147.

4. Vadlapudi V; Borah N; Yellusani KR; Gade S; Reddy P; Rajamanikyam M; Vempati LNS; Gubbala SP; Chopra P; Upadhyayula SM; Amanchy R., Aspergillus Secondary Metabolite Database, a resource to understand the Secondary metabolome of Aspergillus genus. Scientific Reports. 2017;7(1):7325.

5. Kumar P; Barua CC; Sulakhiya K; Sharma RK., Curcumin Ameliorates Cisplatin-Induced Nephrotoxicity and Potentiates Its Anticancer Activity in SD Rats: Potential Role of Curcumin in Breast Cancer Chemotherapy. Frontiers in Pharmacology 2017; 8:132.

6. Kumar M; Dahiya V; Kasala ER; Bodduluru LN; Lahkar M., The renoprotective activity of hesperetin in cisplatin induced nephrotoxicity in rats: Molecular and biochemical evidence. Biomed. Pharmacotherapy 2017; 89:1207-1215.

7. Lihite RJ; Lahkar M; Das S; Hazarika D; Kotni M; Maqbool M; Phukanb S; Study on adverse drug reactions in a tertiary care hospital of Northeast India. Alexandria Journal of Medicine, 2017; 53 (2):151-156.

8. Borgohain P; Lahkar M; Ahmed S; Chowdhury L; Kumar S; Pant R.; Choubey A., Small Molecule Inhibiting Nuclear Factor-kB Ameliorates Oxidative Stress and Suppresses Renal Inflammation in Early Stage of Alloxan-Induced Diabetic Nephropathy in Rat. Basic and Clinical Pharmacology Toxicology 2017;120(5) :442-449.

9. Pant R; Jangra A; Kwatra M; Singh T; Kushwah P; Bezbaruah BK; Gurjar SS; Phukan S., Cognitive deficits induced by combined exposure of stress and alcohol mediated through oxidative stress-PARP pathway in the hippocampus. Neuroscience Letters 2017; 653:208-214.

10. Karnam KC; Ellutla M; Bodduluru LN; Kasala ER; Uppulapu SK; Kalyankumarraju M; Lahkar M., Preventive effect of berberine against DMBA-induced breast cancer in female Sprague Dawley rats. Biomedicine and Pharmacotherapy 2017; 92:207-214.

11. Kumar P; Sulakhiya K; Barua CC; Mundhe N., TNF-α, IL-6 and IL-10 expressions, responsible for disparity in action of curcumin against cisplatin-induced nephrotoxicity in rats. Molecular and Cellular Biochemistry 2017; 431(1-2):113-122.

12. Rajamanikyam M; Vadlapudi V; Amanchy R; Murty USN., Endophytic Fungi as Novel Resources of natural Therapeutics. Brazilian Archives of Biology and Technology 2017; 60: e17160542.

13. Rajput P; Jangra A; Kwatra M; Mishra A; Lahkar M., Alcohol aggravates stress-induced cognitive deficits and hippocampal neurotoxicity: Protective effect of melatonin. Biomedicine and Pharmacotherapy 2017; 91: 457-466.

14. Borgohain M.P; Chowdhury L.; Ahmed S.; Bolshette N; Devasani K; Das T.J.; Mohapatra A;.Lahkar M., Renoprotective and antioxidative effects of methanolic Paederia foetida leaf extract on experimental diabetic nephropathy in rats. Journal of Ethnopharmacology 2017; 198, 451-459.

15. Gade S; Rajamanikyam M; Vadlapudi V; Nukala K.M.; Aluvala R; Giddigari C; Karanam NJ; Barua N.C.; Pandey R; Saradhi V; Upadhyayula V; Sripadi P; Amanchy R; Murty USN., Acetylcholinesterase inhibitory activity of stigmasterol & hexacosanol is responsible for larvicidal and repellent properties of Chromolaena odorata. Biochimica et Biophysica Acta. 2017;1861(3):541-550.

16. Jangra A; Sriram CS; Dwivedi S; Gurjar SS; Hussain MI; Borah P; Lahkar M., Sodium Phenylbutyrate and Edaravone Abrogate Chronic Restraint Stress-Induced Behavioral Deficits:Implication of Oxido-Nitrosative, Endoplasmic Reticulum Stress Cascade, and Neuroinflammation. Cellular and Molecular Neurobiology 2017;37(1):65-81.

17. Bhilare K.D.; Banerjee U.C.; Mohan U., Template independent synthesis of nucleic acid libraries. Journal of DNA and RNA Research. 2017; 1(2), 1-9.

18. Pardeshi R; Bolshette N; Gadhave K; Ahire A; Ahmed S; Cassano T; Gupta VB; Lahkar M., Insulin signaling: An opportunistic target to minify the risk of Alzheimer's disease. Psychoneuroendocrinology. 2017; 83:159-171.

19. Rajamanikyam M; Vadlapudi V; Parvathaneni SP; Koude D; Sripadi P; Misra S; Amanchy R; Upadhyayula SM., Isolation and characterization of phthalates from Brevibacterium mcbrellneri that cause cytotoxicity and cell cycle arrest. EXCLI Journal (Experimental and Clinical Sciences Journal) 2017;16:375-387.

20. Potnuri AG, Kondru SK, Samudrala PK, Allakonda L. Prevention of Adriamycin induced cardiotoxicity in rats- A comparative study with subacute angiotensin-converting enzyme inhibitor and nonselective beta blocker therapy. IJC Metabolic & Endocrine. 2017;14:59-64.

21. Jeengar MK, Thummuri D, Magnusson M, Naidu VG, Uppugunduri S. Uridine Ameliorates Dextran Sulfate Sodium (DSS)-Induced Colitis in Mice. Scientific Reports. 2017;7:3924.

22. Thummuri D, Naidu VG, Chaudhari P. Carnosic acid attenuates RANKL-induced oxidative stress and osteoclastogenesis via induction of Nrf2 and suppression of NF-κB and MAPK signalling. Journal of Molecular Medicine. 2017;95(10):1065-76.

23. Rajamanikyam M, Gade S, Vadlapudi V, Parvathaneni SP, Koude D, Dommati AK, Tiwari AK, Misra S, Sripadi P, Amanchy R, Upadhyayula SM. Biophysical and biochemical characterization of active secondary metabolites from Aspergillus allahabadii. Process Biochemistry. 2017;56:45-56.

24. Athira K.V., Rajaram Mohanrao Madhana, Mangala Lahkar; Flavonoids, the emerging dietary supplement against cisplatin-induced nephrotoxicity. Chemico-Biological Interactions, 2016, 248, 18–20.

25. Kunjbihari Sulakhiya, Gohil Pratik Keshavlal, Babul B. Bezbaruah, Shubham Dwivedi, Satendra Singh Gurjar, Nitin Munde, Ashok Jangra, Mangala Lahkar, Ranadeep Gogoi. Lipopolysaccharide induced anxiety- and depressive-like behaviour in mice are prevented by chronic pre-treatment of esculetin. Neuroscience Letters, 2016, 611, 106-111.

26. Ratan J. Lihite, Mangala Lahkar, Ajoy Borah, Debeeka Hazarika, Sukhjinder Singh. A study on drug induced Stevens-Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN) and SJS-TEN overlap in a tertiary care hospital of Northeast India; Journal of Young Pharmacists, 2016; 8(2): 146-150.

27. Ashok Jangra, Shubham Dwivedi, Chandra Shaker Sriram, Satendra Singh Gurjar, Mohit Kwatra, Kunjbihari Sulakhiya, Chandana C. Baruah, Mangala Lahkar; Honokiol abrogates chronic restraint stress-induced cognitive impairment and depressive-like behaviour by blocking endoplasmic reticulum stress in the hippocampus of mice. European Journal of Pharmacology, 770, 2016, Pages 25–32.

28. Mukesh Kumar, Vicky Dahiya, Shruti Mishra, Dinesh Sharma, Neha Mishra, Mangla Lahkar; Cardiovascular disease prevalence and drug utilization patterns at a tertiary care hospital in North East India. International Journal of Pharmacy and Pharmaceutical Sciences, 2016, Vol 8, Issue 6, 2016.

29. Mukesh Kumar, Eshvendar Reddy Kasala, Lakshmi Narendra Bodduluru, Vicky Dahiya, Mangala Lahkar; Baicalein protects isoproterenol induced myocardial ischemic injury in male Wistar rats by mitigating oxidative stress and inflammation. Inflammation Research, 2016, 65, 8, 613–622.

30. Eshvendar Reddy Kasala, Lakshmi Narendra Bodduluru, Chandana C. Barua, Ranadeep Gogoi; Antioxidant and antitumor efficacy of Luteolin, a dietary flavone on benzo(a)pyrene-induced experimental lung carcinogenesis. Biomedicine & Pharmacotherapy, 2016, 82, 568–577.

31. Lakshmi Narendra Bodduluru, Eshvendar Reddy Kasala, Rajaram Mohanrao Madhana, Chandana C. Barua, Md Iftikar Hussain, Prakash Haloi, Probodh Borah; Naringenin ameliorates inflammation and cell proliferation in benzo(a)pyrene induced pulmonary carcinogenesis by modulating CYP1A1, NFκB and PCNA expression. International Immunopharmacology, 2016, 30, 102–110.

32. Sahabuddin Ahmed, Nitin Mundhe, Manash Borgohain, Liakat Chowdhury, Mohit Kwatra, Nityanand Bolshette, Anwaruddin Ahmed, Mangala Lahkar; Diosmin Modulates the NF-kB Signal Transduction Pathways and Downregulation of Various Oxidative Stress Markers in Alloxan-Induced Diabetic Nephropathy. Inflammation, 2016, 39(5):1783-1797.

33. Eshvendar Reddy Kasala, Lakshmi Narendra Bodduluru, Chandan C Barua, Rajaram Mohanrao Madhana, Vicky Dahiya, Mukesh Kumar Budhani, Ramana Reddy Mallugari, Suseela Reddy Maramreddy, Ranadeep Gogoi; Chemopreventive effect of chrysin, a dietary flavone against benzo(a)pyrene induced lung carcinogenesis in Swiss albino mice, Pharmacological Reports 2016, 68(2), 310–318.

34. Vinayak Sudhir Jamdade, Nitin A. Mundhe, Parveen Kumar, Venkatesh Tadla, Mangala Lahkar; Raloxifene Inhibits NF-kB Pathway and Potentiates Anti-Tumour Activity of Cisplatin with Simultaneous Reduction in its Nephrotoxicity. 2016, Pathology & Oncology Research, 22(1), 145–153.

35. Chandra Shaker Sriram, Ashok Jangra, Satendra Singh Gurjar, Pritam Mohan, Babul Kumar Bezbaruah; Edaravone abrogates LPS-induced behavioral anomalies, neuroinflammation and PARP-1. 2016, Physiology & Behavior, 154, 135–144.

36. Ashok Jangra, Chandra Shaker Sriram, Mangala Lahkar; Lipopolysaccharide-Induced Behavioral Alterations Are Alleviated by Sodium Phenylbutyrate via Attenuation of Oxidative Stress and Neuroinflammatory Cascade. 2016, Inflammation, 39(4), 1441–1452.

37. Sukhjinder Singh, Ratan J. Lihite, Chitralekha Baruah, Mangala Lahkar, Prashant Kumar Singh; A pilot study of comorbidities in patients with Rheumatoid Arthritis at a tertiary care hospital in Northeast India, 2016, Biomedical Research and Therapy 2016; 3(1): 454-459.

38. Kundlik Gadhave, Nityanand Bolshette, Ashutosh Ahire, Rohit Pardeshi, Krishan Thakur, Cristiana Trandafir, Alexandru Istrate, Sahabuddin Ahmed, Mangala Lahkar, Dafin F. Muresanu, Maria Balea; Journal of Cellular and Molecular Medicine, 2016, 20(7), 1392-407.

39. Ratan J. Lihite, Mangala Lahkar, Sukirti Das, Debeeka Hazarika, Murali Kotnie, Mudasir Maqbool, Swapna Phukan; A study on adverse drug reactions in a tertiary care hospital of Northeast India. Alexandria Journal of Medicine 2017, 2 : 151-156.

40. Mukesh Kumar, Eshvendar Reddy Kasala, Lakshmi Narendra Bodduluru, Vicky Dahiya, Dinesh Sharma, Vikas Kumar, Mangala Lahkara; Animal models of myocardial infarction: Mainstay in clinical translation. Regulatory Toxicology and Pharmacology, 2016, 76, 221-230.

41. Ashok Jangra, Mohit Kwatra, Tavleen singh, Rajat Pant, Pawan Kushwah, Sahabuddin Ahmed, Durgesh Dwivedi, Babita Saroha, Mangala Lahkar; Edaravone alleviates cisplatin-induced neurobehavioral deficits via modulation of oxidative stress and inflammatory mediators in the rat hippocampus. European Journal of Pharmacology, 2016, 15;791:51-61.

42. Ashok Jangra, Mohit Kwatra, Tavleen Singh, Rajat Pant, Pawan Kushwah, Yogita Sharma, Babita Saroha, Ashok Kumar Datusalia, Babul Kumar Bezbaruah; Piperine Augments the Protective Effect of Curcumin Against Lipopolysaccharide-Induced Neurobehavioral and Neurochemical Deficits in Mice. Inflammation, 2016, 39(3), 1025–1038.

15. EXTRAMURALLY FUNDED-RESEARCH PROJECTS

DBT Twinning Collaborative Project between NIPER-Guwahati & NIPER- Hyderabad (2014-2017) Completed; Principal Investigator: Dr. Ranadeep Gogoi, NIPER-Guwahati, (Sanctioned amount for NIPER-Guwahati was 51 Lakhs)

Title: "Targeting neuro-inflammation, oxidative-nitrosative stress and PARP over activation in experimental model of neuropathic pain".

Neuropathic pain has been induced using chronic nerve constriction injury in SD rats followed by treated with various pharmacological interventions targeted at neuroinflammation, oxidative-nitrosative stress and PARP over activation. The assessment of functional, sensorimotor and biochemical parameters has been done in order to evaluate the development of neuropathic pain by CCI. Once the effectiveness of treatment is established in in vitro system using various cell lines (neuro 2A, PC12) the mechanistic study is performed to elucidate the involvement of these pathways namely neuroinflammatory cascade, oxidative-nitrosative stress and PARP overactivation in neuropathic pain. Protein expression studies would help us to understand various molecular mechanisms involved in the pathophysiology of diabetic neuropathy.

DST-WOS-A Project (2014-2017) Completed, Principal Investigator: Dr. Swapnil Sinha; Mentor: Dr. Utpal Mohan, (Sanctioned amount for NIPER-Guwahati was Rs. 30 Lakhs); This project started in September 2014 and the project focussed on finding small molecules/biomolecules, which can suppress the gene expression of crucial genes of M.Tb. pathogen through 5' untranslated regions (UTR) of disease gene mRNAs. The findings of this project have thrown light on the significance of 5'UTRs as an important drug target. This project was completed in October 2017.

DBT-Institutional Biotech Hub, Coordinator: Dr. USN Murty; This project is sponsored by the Department of Biotechnology, Govt. of India, for the establishment of an Institutional Biotechnology Hub, which can promote scientific growth aided by the facilities like advanced instrumentation and other resources. Creating awareness on recent bio techniques among North East students is also an integral part of training.

DST-SERB : Dr. VGM Naidu (Sanctioned amount for NIPER-Guwahati is Rs. 12.65 Lakhs); Gold capsule combination nanomedicine for target specific therapy of chemo resistant Breast tumors in collaboration with Institute of NanoScience & Technology, Mohali.

DST-SERB : Dr. VGM Naidu (Sanctioned amount for NIPER-Guwahati is Rs. 27.10 Lakhs); Design and fabrication of Epha2 receptor targeting lipid-polymer hybrid particles for sensitizing breast cancer stem cells to enhance the efficiency of chemotherapy.

DBT Twinning Collaborative Project between NIPER-Guwahati & IITR-Lucknow (2017-2020); Principal Investigator: Dr. Utpal Mohan, NIPER-Guwahati, (Sanctioned amount for NIPER-Guwahati is Rs. 48.10 Lakhs)

Title: "*In Vitro Evolution* of mRNA cleaving deoxyribozymes; analysis of anticancer activity and modification of evolved DNAzyme/s for higher efficacy in *Vitro and In Vivo*"

This project aims to develop deoxyribozymes (DNAzymes) that can cleave Bcl-2 and Mcl-1 mRNA through in vitro evolution (SELEX). The random DNA libraries will be ligated to specific regions of target mRNA (Bcl-2 and Mcl-1) and the individual ssDNA molecules which have RNA cleaving activity will be selected through systematic evolution of ligands by

exponential enrichment (SELEX). We will modify the selected DNAzymes with modifications for increased stability. We will be using various human non-solid cancer cell lines for the in vitro validation of evolved Deoxyribozymes. Further, the selected and engineered DNAzymes will be assessed for their efficacy in an animal model of non-solid tumors using Ehrlich Ascitis Carcinoma Cells (EAC). The evolved DNAzymes that could cleave Bcl-2 and Mcl-1 mRNA specifically could be pursued for their development as Biopharmaceuticals. This study could help us develop a general strategy for evolving RNA-cleaving DNAzymes for various disease causing genes through In Vitro selection/ evolution.

DBT-BioCARE (PI: Dr. Shubhangi Kaushik, Mentor: Dr. Utpal Mohan), (Sanctioned amount for NIPER-Guwahati is Rs. 43 Lakhs)

Title: "Studies on the development of DNA Aptamers from Cell-SELEX for their application as anti-cancer agents"

The DNA aptamers which specifically bind breast cancer and hepatocarcinoma cell types will enable us to target these cancers in a very specific manner. These Aptamers will provide us a general strategy to diagnose or kill specific cancer cells against which they are developed. The overall strategy of cell-SELEX could be coupled with Nanotechnology to develop targeted and efficient anti-cancer therapy.

16. INTERNATIONAL CONFERENCES AND VISITS

- Sahabuddin Ahmed; Travel award recipient of 1400 USD ($) from International Society of Neurochemistry to attend and present poster in 26th ISN-ESN 2017, Paris, France (20-24th Aug 2017).

- Sahabuddin Ahmed; Travel award recipient of 2000 USD ($) from International Brain Research Organization (IBRO) – SfN for attending and presenting poster in 47th Society for Neuroscience (SfN) 2017, Washington DC, USA (11-15th Nov 2017).

- Mohit Kwatra; Travel award recipient of 1400 USD ($) from International Society of Neurochemistry to attend and present poster in 26th ISN-ESN 2017, Paris, France (20-24th Aug 2017).

- Mohit Kwatra; Travel award recipient of Rs 94, 942/- from Indian Council of Medical Research (ICMR) international travel award for attending and presenting poster in 47th Society for Neuroscience (SfN) 2017, Washington DC, USA (11-15th Nov 2017).

- Sahabuddin Ahmed: Obtained travel grant award to join the School, "Theme: Basic Techniques in in vitro Neural Differentiation from Stem Cells" which will be held at Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia from 22 to 26 August 2016.

- Sahabuddin Ahmed; Obtained travel grant to present his poster titled, "PPAR-γ agonist Pioglitazone exerts its Neuroprotective activity in Reserpine induced Parkinson-depression triads by evaluating the endoplasmic reticulum stress markers and inflammatory cytokine levels in rat brain" has been accepted for presentation in 14th Meeting of Asian-Pacific Society for Neurochemistry (APSN)-2016, Kuala Lumpur, Malaysia, from on 27th to 30th August 2016. The abstract will be published in the supplementary issue of Frontiers of Cellular Neuroscience (IF=4.609).

- Athira K.V. International Conference of Immunology (ICI-2016), 21-26th August 2016, Melbourne, Australia.

- Eshvendar Reddy Kasala: Participated and presented a paper on "Chemopreventive efficacy of luteolin, a dietary flavone against benzo(a)pyrene induced lung carcinogenesis" in "EMSO Asia Singapore-2015", held during 18th-21st Dec, 2015 in Suntec city, Singapore.

- Eshvendar Reddy Kasala: Participated in International Brain Research Organization (IBRO)/Asian Pacific Regional Centre (APRC) School of Neuroscience workshop, held during 5th-20th September 2015 in DBT-BHU Interdisciplinary School of Life Sciences, Banaras Hindu University, Varanasi, India.

- Chandra Shaker Sriram: Attended and presented a paper in IBRO/APRC Chandigarh School, held during October 26-30, 2015, at Panjab University, Chandigarh.

17. WORKSHOPS AND SEMINARS

17.1. Biostatistics workshop

NIPER-Guwahati in association with IIT-Guwahati organized a Workshop on Biostatistics from 28th-30th June 2017 with the theme of "Recent Advances in Biostatistics". All the students of NIPER-Guwahati participated in the 3-day workshop and gained indepth knowledge of Biostatistics from the speakers of the workshop viz. Dr. Anil Limaye from IIT-Guwahati and Dr. Pooja Arora from NIPER-Mohali. The workshop was sponsored by Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers, Govt. of India. Shri Vinod Seshan, IAS, DC, Kamrup (Rural), CEO, Guwahati Biotech Park was the Chief Guest of the Workshop and Addressed the gathering and enlightened the students of NIPER-Guwahati with his valuable words on the achievement of success through hard work and perseverance during the valedictory function on 30th June 2017.

Shri Vinod Seshan, IAS, DC, Kamrup (Rural), CEO, Guwahati Biotech Park giving awards to the students of NIPER-Guwahati at the conclusion of the Biostatistics workshop

17.2 FLOW CYTOMETRY WORKSHOP (6th & 7th NOVEMBER 2017)

NIPER-Guwahati in association with Thermo Fischer Scientific organized a Workshop on Flow Cytometry and its Applications from 6th & 7th November 2017. All the faculty, students and research scholors of NIPER-Guwahati were participated in the 2-day workshop and gained indepth knowledge of Flow Cytometry from the speakers of the workshop viz. Dr. Tribhuban Bind, Dr. Akhilesh Kumar and Debashish Mohanty. The workshop was sponsored by Thermo Fischer Scientific.

Dr. Pavan Samudrala with PhD student Rajaram during the Flow Cytometry Workshop

Flow Cytometry is one of the most popular and powerful quantitative single cell analysis techniques used in the life sciences and medicine. It was developed in the 1970's and rapidly be-came an essential instrument for the biologic sciences. Flow cytometry is a technology that concurrently measures and then analyses multiple physical features of single particles, usually cells, as they flow in a fluid stream through a beam of light simply detect the expression of fluorescent reporters. Improvements in assay technology are now enabling scientist to detect mRNAs in cells using flow cytometry.

Session of Flow Cytometry Workshop

Lamp lighting ceremony during the Flow Cytometry Workshop

17.3 Biopharmaceutical and Pharmacokinetics Workshop

Workshop on Biopharmaceutical and Pharm- acokinetics considerations of early and late stage clinical development of Drugs from 22nd-24th December 2017. All the faculty, students and research scholors of NIPER-Guwahati participated in the 3-day workshop. The objective of the workshop was to enhance the knowledge with respect to various biopharmaceutical aspects of drugs including drug absorption, drug distribution, NCA analysis, compartmental analysis, dissolution testing etc.

17.4 Workshop on Soft Skills

A Workshop on Soft Skills from 21st to 23rd Jan 2018. A soft skill is a need of every human being in order to become more successful in personal, professional and social life. Soft skill will groom the candidate, so that one can stand in competitive environment. The focus of the programme was to develop a wide variety of soft skills starting from communication, working in different environments, developing emotional sensitivity, learning creative and critical decision making, developing environments, developing emotional sensitivity, learning creative and critical decision making.

Director, NIPER-Guwahati with Invited Speaker and Faculty members during the Soft Skills Workshop

Faculty and Students attending during the Workshop

Suresh Garimella is the resource person with profound interest in the field of education with a focus in Management and Marketing. H is a Post Graduate in Management and a PhD in Marketing from the Osmania University, Hyderabad. He has a Bachelors degree in Zoology, worked as sales & Marketing teacher for over twenty years and held both Academic and Administrative positions in Business Schools of National Repute in India. IBS (Indian Business School) Hyderabad, Badruka College Hyderabad, Vignana Jyothi Institute of Management Hyderabad, IMT Hyderabad, SP Jain Mumbai are some of the B Schools with which he was associated since 1989. In addition, he was holding senior level positions as Academic Head, MDP head and Program Chair during this period. Dr Suresh is also a visiting Faculty member at the IIM (Indore), NMIMS (Hyderabad). He has taught both Post Graduate and Executive audiences at institutes including, MANAGE, NATFM, IDBI, ASCI amongst others. He has published over 15 cases and articles in both National and International Academic publications.

18. AWARDS AND RECOGNITION

18.1 Dr. G. M. Taori Young Scientist Award

Dr. Ranadeep Gogoi, Assistant Professor, Department of Biotechnology, NIPER-Guwahati participated and presented an oral presentation on the title "FeTMPyP a peroxynitrite decomposition catalyst improved functional and behavioural deficits in chronic constriction injury induced neuropathic pain in rats" in the National Conference on Recent trends in Neurological and Psychiatric Research, on the occasion of 30th Annual Meeting of Society for Neurochemistry (India) (SNCI, 2016) held at CSIR-CCMB, Hyderabad during 9th-11th December 2016. Dr. Ranadeep Gogoi was awarded Dr. G. M. Taori Young Scientist Award in the Annual Meeting of SNCI 2016.

18.2 DBT Overseas Fellowship

Dr. Utpal Mohan, Assistant Professor, Department of Biotechnology, has been awarded the DBT North East Overseas Fellowship for the year 2017-2018. Dr. Utpal Mohan has been awarded this overseas fellowship for 3 Months as Visiting Scientist at University of Toronto, Ontario, Canada.

18. 3 iGEM 2017

A students team along with Dr. Utpal Mohan, Assistant Professor, Department of Biotechnology, represented NIPER-Guwahati at iGEM, MIT, Boston, from 9th to 13th November 2017.

NIPER-Guwahati iGEM Team members working for iGEM-2017

NIPER-Guwahati is one of the 5 winners of iBEC 2017 Competition and represented the country for the first time among all NIPERs at iGEM, MIT, Boston. Dr. Utpal Mohan, Asst. Professor, NIPER-G along with NIPER students, participated in iGEM2017 at MIT, Boston, in November 2017. The purpose of iBEC is to encourage and support students from India to participate in the world-wide synthetic biology competition, iGEM [international Genetically Engineered Machine]. DBT selected 5 Indian teams this year and have provided each of them Rs. 10 Lakhs grant to participate in this reputed International Competition. In total, 9 teams from India (NIPER-Guwahati, IISc-Bangalore Bangalore, IISER-Mohali-INDIA, IISER-Pune, India, IIT-Madras, ICT-Mumbai, REC-CHENNAI, SVCE-CHENNAI and DEI-AGRA) were represented the Country at iGEM 2017.

A team comprising, Dr. Biplab Bose, Associate Professor (Chairman); Dr. Biman Mandal, Associate Professor (Member); Director, NIPER-G (Member) and Dr. Utpal Mohan, PI, (Member), selected four out of ten students through a rigorous screening process for representing NIPER-G at MIT, Boston, USA. The International Event iGEM-2017 commenced on 9th Nov 2017.

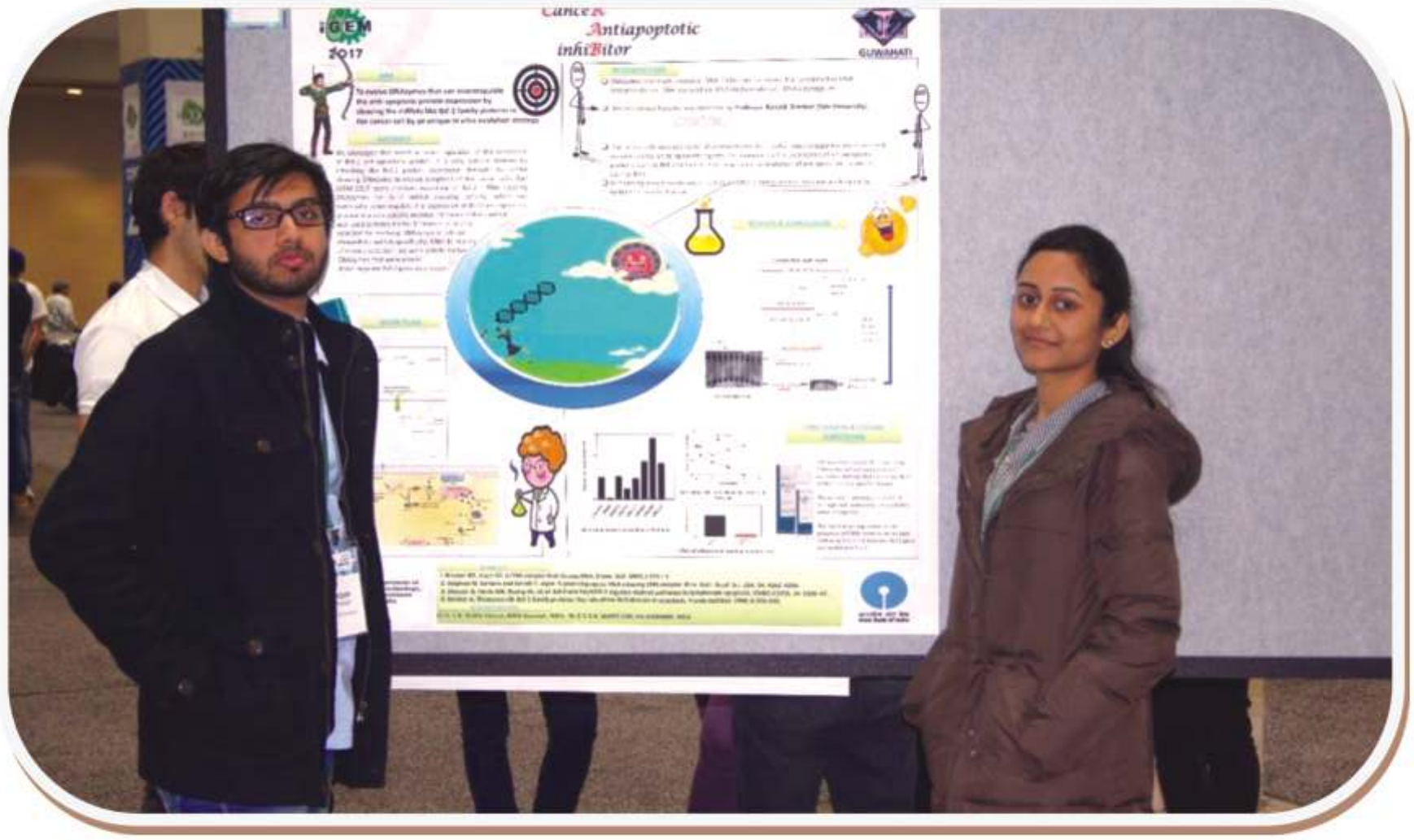
The student's team from NIPER-Guwahati visited Boston comprised of following students- Prajakta Deshmukh, T. Manasa, Shashikant Patil and Arjun Prasad.

The Student's team was led and accompanied Principal Investigator Dr. Utpal Mohan, Assistant Professor, NIPER-Guwahati. They explained their work through Poster and got a good response from various participating teams and Judges. The students had a wonderful chance to know about numerous areas in the field of Synthetic Biology where Scientists are focusing to develop diagnostics, therapeutics, environmental bio-indicators etc. The oral presentation of NIPER-Guwahati team was scheduled on 12th Nov 2017 and four students (Prajakta, Manasa, Arjun & Shashikant) presented the team's work in a very spirited manner and received applause from the audience. The work was appreciated by various top-notch scientists gave their views about the work and the tips for improving the work further.

Overall, it was a very successful event for the students as they got wide International exposure and have learnt a lot form, this trip that they can use in their future research. We are grateful to DBT, Govt. of India, and sincerely thank them for providing this wonderful opportunity to the students as this will have a very long lasting effect on the overall academic growth of these students. We are also thankful to Sri PVSLN Murty, Chief General Manager (CGM), SBI, North East Circle for sponsoring one student Ms. Manasa to participate in iGEM-2018 at Boston, USA, under CSR.

Selected students from NIPER-Guwahati to attend iGEM 2017 in boston, USA

Dr. Utpal Mohan with students representing NIPER-Guwahati at iGEM-2017 in Boston, USA



Prajakta and Arjun presenting their work at iGEM-2018 in Boston, USA

19. COLLABORATIONS

CSIR-IICT-Hyderabad

On 20th December Dr. USN Murty Director, NIPER Guwahati entered MoU with Director, CSIR-IICT, Dr. S. Chandrasekhar at his secretariat. The event witnessed by Dr. PG Rao, Advisor NIPER-Guwahati, Vice Chancellor of USTM Guwahati (Former Director of CSIR-NEIST, Jorhat, Assam) and Dr. D Shailaja, Head, BMA Divn, CSIR-IICT. This MoU is for mutual cooperation/ collaborative research in the areas of common interest. The scope of the MoU are as follows.

- Teaching, Research and Training in selected and advanced thrust areas in S&T.
- The organization of joint academic and scientific activities, such as, conferences, seminars, symposia or lectures.
- The exchange of research and teaching personnel.
- The exchange of students: Students (2nd year) to take up 8 months PG dissertation in the dept. of Biology, Chemical biology etc., in CSIR-IICT campus.
- The exchange of publications and other materials (related to publications and reports) of common interest.
- Any activity carried out within the broad framework of this MoU shall be subjected to the mutual consent of both parties, taking into account any constraints of time, funding and other relevant resources.

Exchange of MoU between NIPER-Guwahati and CSIR-IICT-Hyderabad

Guwahati Biotech Park

On 5th December 2016 Dr USN Murty, Director, NIPER-Guwahati exchanged MoU with Mr. Vinod Seshan, IAS, Deputy Commissioner, Kamrup District and CEO, Guwahati Biotech Park in the august presence of Mr. Sarbananda Sonowal, Chief Minister of Assam(Chairman, GBP); Mr. Keshav Mahanta, Science and Technology Minister, Govt. of Assam. The event was also witnessed by Dr. U.N. Das, Founder and President of UND Life Sciences, Ohio, USA; Dr. Gautam Biswas, Director, IIT- Guwahati; Dr. PG Rao, Advisor NIPER-Guwahati, Vice Chancellor of USTM Guwahati (Former Director of CSIR-NEIST, Jorhat, Assam) and other dignitaries. According to the MoU, NIPER Guwahati can utilize 2016 sqft lab space of Guwahati Biotech Park for the experimental work for students & faculty.

Exchange of MoU between NIPER-Guwahati and Guwahati Biotech Park (GBP) in the gracious presence of Chief Minister of Assam, Shri Sarbananda Sonowal

ICT –Mumbai

Exchange of MoU between NIPER-Guwahati and ICT-Mumbai

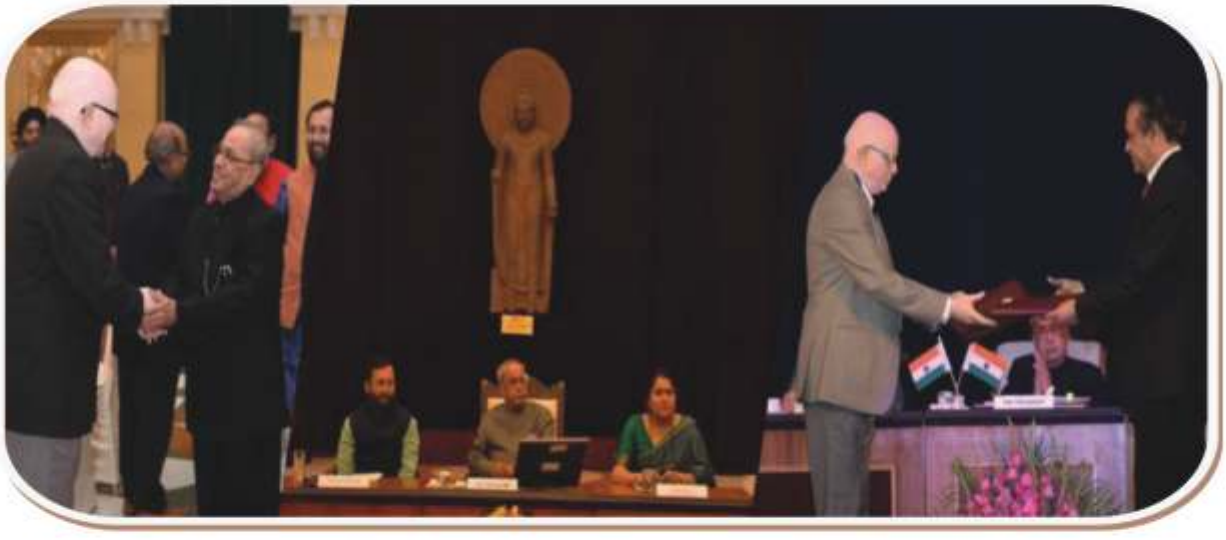
UND Life Sciences, USA

Exchange of MoU between NIPER-Guwahati and UND Life Sciences, USA

GNRC-Guwahati

Exchange of MoU between NIPER-Guwahati and GNRC-Guwahati

NATCO Pharma



Exchange of MoU between NIPER-Guwahati and NATCO Pharma in the auspicious presence of then President Shri Pranab Mukherjee

20. VISITS OF DIGNITARIES

Visit of Secretary, DoP

Sri. Jai Priye Prakash, IAS, Secretary, DoP visited NIPER-Guwahati Campus at NITS-Mirza campus on 8th December 2017.

He visited the facilities available at NIPER-Guwahati campus including classrooms, laboratories, computer lab etc. He also visited the facilities available at GBP, IIT-Guwahati Campus that are availed by the students of NIPER-Guwahati. He also visited NIPER-Guwahati new campus construction site and reviewed the progress of construction activities of the campus and suggested few modifications that are well taken by EPIL (Engineering Projects India limited)

Shri. Jai Priye Prakash, Secretary, DoP and Dr USN Murty, Director, NIPER-Guwahati, along with the students and faculty at NIPER-Guwahati campus

Visit of Joint Secretary, DoP

Sri. Rajneesh Tingal, Joint Secretary, DoP visited NIPER-Guwahati Campus at NITS-Mirza campus on 23rd September 2017.

He visited all the facilities of the NIPER-Guwahati campus including classrooms, laboratories, computer lab, hostels, hostel mess etc in the campus. He also visited the facilities available at GBP, IIT-Guwahati Campus as well as the GNRC, North Guwahati Campus whose facilities are availed by the students of NIPER-Guwahati. His interaction with students and faculty was fruitful.

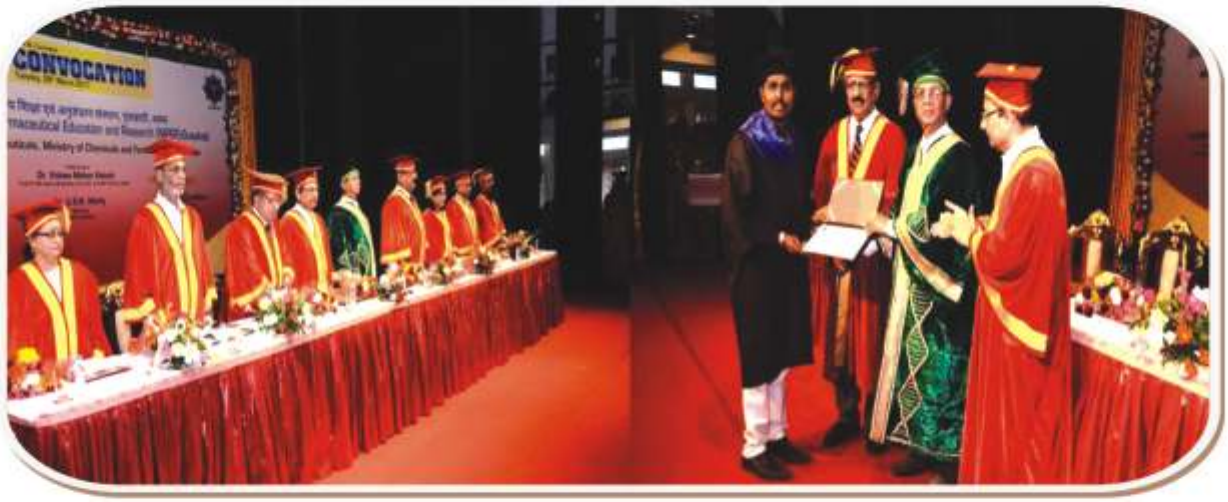
Shri. Rajneesh Tingal, Joint Secretary, DoP and Dr USN Murty, Director, NIPER-Guwahati along with the students while visiting the NIPER-Guwahati campus

21. EVENTS

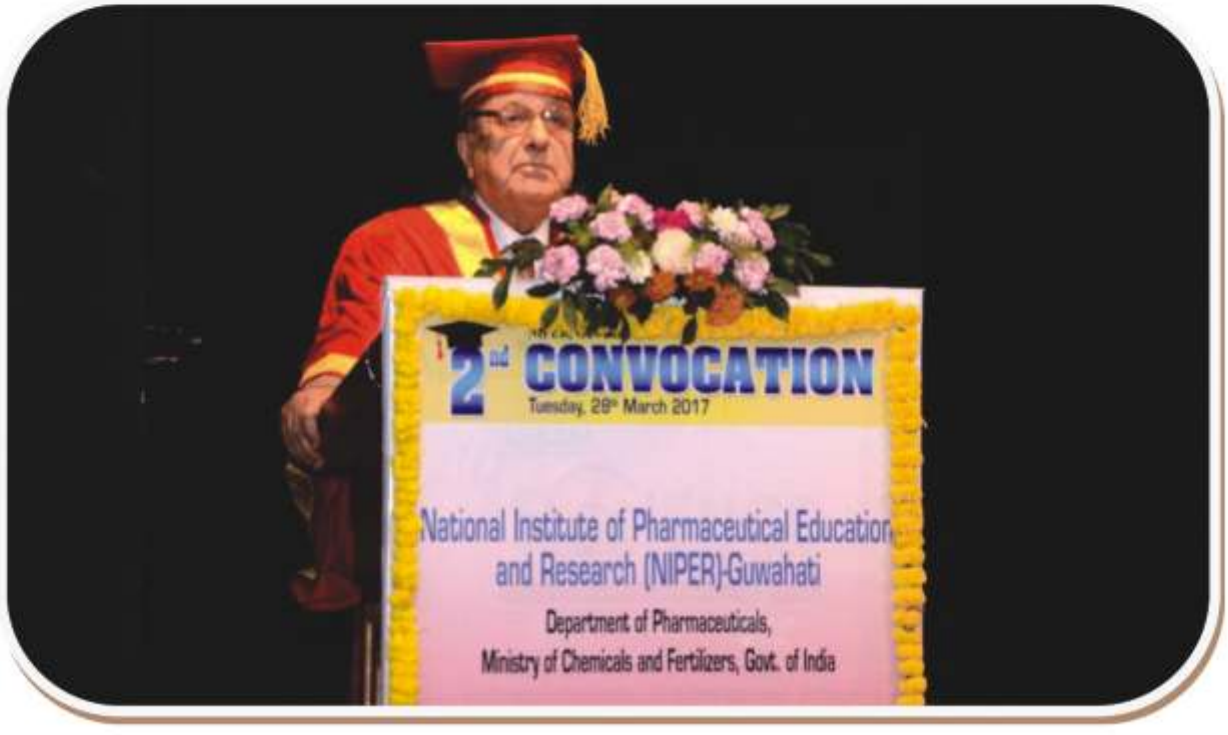
21. 1. 2nd Convocation

NIPER-Guwahati organized its 2nd Convocation on 28th March 2017. Dr. Vishwa Mohan Katoch, NASI-ICMR Chair at RUHS, Jaipur, Former Secretary, Department of Health Research, MoHFW, GoI, Director-General, Indian Council of Medical Research was the Chief Guest on the occasion and delivered the Convocation Address and enlightened the students with his inspiring talk. The event was also attended by Prof. Kiran Kalia, Director, NIPER-Ahmedabad; Prof. Nagarajan, Prof. C.L. Kaul, Founder Director, NIPER-SAS Nagar; Prof. P. V. Bharatam, Dean, NIPER- SAS Nagar among others.

Distinguished dignitaries on the dias on the occasion of 2nd Convocation of NIPER-Guwahati



Dignitaries on the dais during Convocation 2017



Prof. CL Kaul addressing the students, faculty and all invited dignitaries on 2nd Convocation of NIPER-Guwahati

21.2 9th Foundation Day Celebration

NIPER-Guwahati celebrated its 9th Foundation Day on 16th September 2017, with a day long program at the Madhavdeva Auditorium, Shrimanta Shankardeva Kalakshetra, Guwahati, Assam.

Prof. Chandrakant Kokate, Former President, Pharmacy Council of India, Former V.C, Kakatiya and KLE Universities graced the occasion as chief guest.

Prof. Abhay Pandey, HoD, Dept. of Biotechnology, NIPER-Mohali was also among the guest on the auspicious occasion. The CAG audit team from Kolkata was also present in the event. Prof. M.C. Kalita, Professor, Dept. of Biotechnology, Gauhati University, Dr. Suvakanta Dash, Principal, Girijanada Institute of Pharmaceutical Sciences, Dr. M. Rehman, Former Registrar, NIPER-Guwahati were also graced the function.

Dr USN Murty, Director, NIPER-Guwahati, delivering his speech at 9th Foundation Day function of NIPER-Guwahati

Prof. Chandrakant Kokate delivering the foundation day lecture

Professor Chandrakant Kokate delivered the foundation day lecture and emphasized the role of pharmacist profession in our country. He said that the profession of pharmacy in our country has undergone rapid metamorphosis in last one decade. With the advancements in healthcare systems, the role of pharmacists has become more significant in meeting the demand of quality medicines. The pharmacist of today is a drug maker, an analyzer of drug, a drug dispenser, a drug custodian, a drug regulator, a drug counsellor and an educator of drugs.

21.3. VIGILANCE AWARENESS WEEK -2017 (30th OCTOBER - 4th NOVEMBER 2017)

The observance of the Vigilance Awareness Week commenced at NIPER-Guwahati with the administration of pledge on 30th October, 2017. All the faculty members, staff and students along with the Director of the institute participated in the bi-lingual pledge ceremony.

On 31st October 2017 a quiz competition was organized among the students of NIPER-Guwahati. All the Masters as well as the Ph.D. students of the institute took active part in the event. The outreach activity of the Vigilance Awareness Week helps in the widespread dissemination of the benefits of honesty and the ill effects of corruption in the society. As part of our outreach activities, on 1st November 2017, we conducted a quiz competition among the B.Pharm and B.Sc (Nursing) students of NETES Institute of Pharmaceutical Science, Mirza. On 3rd November 2017, group discussion was held among the master's and Ph.D. students. On 13th November 2017, the valedictory function was organized where Sri N Rajasekhara, IPS, Superintendent of Police, Head of Branch, CBI Guwahati was the chief guest. On the occasion, he delivered a thought provoking speech for imbibing moral values among the students and staff of NIPER-Guwahati.

Administration of pledge & Chief guest Sri N Rajasekhara, IPS, Superintendent of Police CBI Guwahati delivering speech on Vigilance Awareness Week

21.4 Swachhta Pakhwada Activities (16th – 31st August 2017)

The students, staff and the faculty members of NIPER-Guwahati took active part in the Swachchta Pakhwada program from 16th to 31st August 2017.

During the entire fortnight we covered the areas like NIPER-office, classroom, faculty room, laboratories as well as public areas like corridors, surroundings and the parking areas.

Following activities were conducted during the entire fortnight:

1. 16.08.2017 - Mass Pledge was administered followed by cleanliness drive by the faculty, staff and students of NIPER-Guwahati
2. 17.08.2017 to 31.08.2017 – Special Cleanliness drive in the offices/ classrooms/ premises of NIPER-Guwahati were conducted which includes.

a) Scanning of old documents and weeding out of old file/records of the department.
b) Old fixtures/furnitures were discarded/ removed.
c) Old newspapers, magazines as well as scrap materials were discarded.
d) The laboratories were given special focus during this cleanliness drive. The existing chemical inventory of various labs was updated during the fortnight.

Swachhta Pakhwada Activities at NIPER-Guwahati

21.5 Free Health Care Camp organized by NIPER-Guwahati at Bamundi village

Dept. of Pharmacy Practice students; Chinju George, Om Prakash Kumar Thakur, Ranju Mishra, Shedage Kedar Tanaji, Samlet Shruti Sriniwas, Amal Prasad, Vibhute Prajakta Jadish, Hari R, and Erica Eva Nongbri have been actively participated in this free health check-up camp under the supervision of Dr. Urmila M Aswar and Dr. Ratan J Lihite. Overall more than 200 patients were visited to this health check-up camp, Out of which ECG testing was advised to 43 patients. In this camp, free prescription medicines were dispensed with free health check-up. Around 20 different medicines were available in the stock including tablets, suspensions, and injections. The NIPER-Guwahati students have played a vital role in setting up dispensing area as well as in dispensing prescribed medicines to the patients. Patients were also counselled by the NIPER-Guwahati students on rational use of medicines while dispensing drugs.

Students of NIPER-Guwahati dispensing Medicines @ Free Health Care Camp at Bamundi village

21.6 All NIPER Directors meet at NIPER-Guwahati [22nd January, 2018]

Brain Storming Session by Directors and Representatives of all NIPERs for induction of B.Pharm courses at NIPERs

21.7 ASSAM ADVANTAGE - the Assam Global Investors' Summit held during 03-04 February 2018

NIPER-Guwahati participated in the 'Advantage Assam'- the Assam Global Investors' Summit held during 03-04 February 2018 at Guwahati, which was the largest ever investment promotion and facilitation initiative by the Government of Assam. The Summit aims at highlighting the state's geostrategic advantages offered to investors by Assam. The event showcased the manufacturing process and the opportunities offered by the state in terms of export-oriented manufacturing and services to growing economies viz. ASEAN and BBN countries.

Faculty Members with Scientific Advisor of NIPER-Guwahati, Mr. Lanka Srinivas during Advantage Assam 2018

Faculty Members and Students with Dignitaries during Advantage Assam 2018

Students and Faculty Members with Dignitaries during Advantage Assam 2018

21.8 Inter-NIPER, Scientific, Sports Meet [21st to 25th February, 2018]

PRIZE DISTRIBUTION

Dr USN Murty, Director, NIPER-Guwahati felicitating Mr. Mani Surya Kumar for Winning Gold Medal in Badminton Singles

Ms. Azole Lohe won Gold Medal in Disc Throw

Mr. Sameer won Gold Medal and Mr. Vijay won Silver Medals in 200 mts running

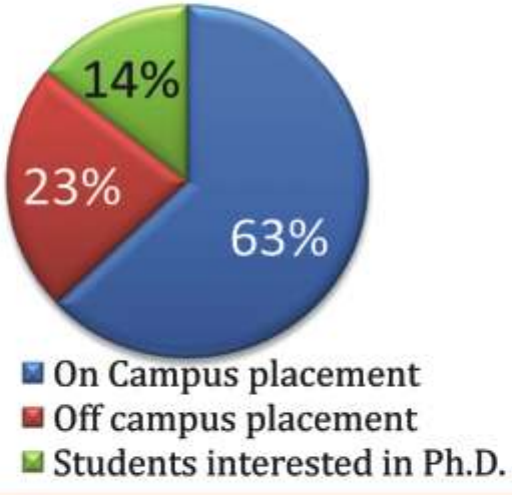
NIPER-Guwahati celebrating Valedictory function during INTER NIPER Sports Meet which was held at NIPER, SAS Nagar

22. PLACEMENTS 2015-2017

1. **Arpit Malik**
   PC
   Novartis, Hyderabad
2. **Nitendra Kumar**
   PC
   Novo Nordisk, Hyderabad
3. **V. Kedarnath**
   PC
   Novartis, Hyderabad
4. **Gundu Ananth Reddy**
   PC
   Novartis, Hyderabad
5. **Pankaj Chopra**
   PC
   Novartis, Hyderabad
6. **Amit Kumar Mishra**
   PC
   Novartis, Hyderabad
7. **K. Vimalraj**
   PC
   Syngene, Bangalore
8. **Sushant Jagdhish Poul**
   PC
   Novartis, Hyderabad
9. **Anurag Sahu**
   PC
   Teaching-TIT institute of Pharmacy, Bhopal
10. **Indu Chandran J S**
    PC
    Novartis, Hyderabad
11. **Tupakula Penchala Narasimha**
    PC
    Novartis, Hyderabad
12. **Rajagopal Doori**
    PC
    Novartis, Hyderabad
13. **Mitali Tripathi**
    PC
    Novartis, Hyderabad
14. **Ebin Johny**
    PP
    PhD student at NIPER GHY
15. **Deeksha K. Pai**
    PP
    Accenture, Bangalore
16. **Sapara Mohin Arvindbhai**
    BT
    Got PhD studentship at University of Sheffield, United Kingdom
17. **Madduri Madhuri**
    BT
    PhD student at NISER Bhubaneshwar
18. **Patel Saket Awadhesbhai**
    BT
    PhD student at NISER Bhubaneshwar
19. **G. Naresh Kumar**
    BT
    PhD student at NISER Bhubaneshwar
20. **Kumari Bhavya**
    BT
    JRF, BITS, Pilani

Students of 2016-2018 batch got selected in recent placement rounds at NIPER-Guwahati campus are:

Sl. No.	Students Placed	Company
1	Apoorva Gosika	**Sciformix, Pune**
2	Prameela Rani Achyuta	
3	Madhavi Madugula	
4	Purnima Shenoy	
5	Shashikant Patil	**Novartis, Hyderabad**
6	Antra Pant	
7	Sagar Saha	
8	Y. Mounica	
9	Tzhewuzho Lohe	
10	Chakradhar Bhadade	**Sphera, Bangalore**
11	Amir Ali	
12	Savizo Kezieo	
13	Abiya Johnson	**Biotech Industrial Training**
14	Mahesh Kalshetty	**Programme For North Eastern**
15	Manasa Thimmapuram	**States Students (BITP-NES)**
16	Prajakta Prakash Deshmukh	
17	Sireesha Kolimigundla	



23. VOICE OF STUDENTS

Mr. Vallapu Krishna
MS - Pharmacy Practice [2011-13 batch]

Currently working as **Assistant Grade - III (General) in Food Corporation of India.**

Apart from the fact that NIPER Guwahati has high educational standards, management, staff and the elite students from different parts of the country, it really has freedom of thought which have added positively to the success of College and Students.

Mr. Chandra Shekhar Sriram
MS & PhD Pharmacology & Toxicology [2010-15 batch]

Currently working as **Senior Researcher-Regulatory Affairs Boditech Med Inc., South Korea.**

NIPER was not a college to me but it was like a Family and I believe that choosing NIPER-Guwahati was one of the best decisions, I have ever made. I got a chance to meet and interact with different people and imbibe various cultures. I am and will always be thankful to NIPER Guwahati for making me the person, I am today. Under the leadership of our director, Dr USN Murthy, I am sure that the NIPER-Guwahati would accomplish greater heights soon.

Mr. Vinodh Jaganti
MS & PhD Pharmacology & Toxicology [2010-15 batch]

Currently working as **Drugs Inspector, Drugs Control Administration, Govt. of Andhra Pradesh.**

Taking admission into NIPER Guwahati is like paying for an exclusive India tour. The institute is comprised of different people from different states which paved way for diverse learning. The relationship between faculty and student is very cordial, which gave me an opportunity to excel in my area of interest. The two years spent here were splendid and has helped me to grow better professionally & personally. I would like to thank all the faculty and staff for making me a "Better Person"

Mr. Harish Rijhwani
MS Pharmacology & Toxicology [2010-12 batch]
Current designation: **Senior Regulatory**
& Hazard Communication Specialist
(Team Lead) & Project Manager–India SDS Authoring team

I am so grateful to many that I came to NIPER-Guwahati and completed my education. The things I learnt there are commendable. Overall I could say that NIPER Guwahati is an Institute that cares to give wings to fly to many dreams that someone expects from their alma mater. I am proud to be an NIPER-Guwahati NIPERITE

Mr. Bhaveshkumar Chavada,
Pharmacy Practice Batch-2011-13

It is indeed pleasure to share with you that I was Part of NIPER-Guwahati Family. I took admission in Pharmacy Practice in the 2011. At that time NIPER-Guwahati was in Pharmacology Department of Guahati Medical College. A warm regards to all beloved teachers, seniors, juniors and colleagues who have helped me during my NIPER –Guwahati Days.

24. PROGRESS OF CAMPUS CONSTRUCTION

Name of the Project : Construction of National Institute of Pharmaceutical Education and Research (NIPER) Campus at Guwahati, Assam.

Project Value : 159.69 Crore. (Phase I)

Project Management Consultants : M/s Engineering Project India Limited, New Delhi. (A Govt. of India Enterprise)

Architects : M/s Prasad Associates, Hyderabad.

Contractor : M/s NCC Limited, Hyderabad.

Project Duration : 24 Months from the Date of Issue of LOI (Extended upto 26-09-2018).

Actual Date of Start of Work : 20-07-2015 (After clearing the Encroachments by District Administration).

Progress :

Overall Physical progress in percentage : 43.00 % (Upto February-2018).

Overall Financial Progress till Feb-2018 (Rs.) : 68.00 Crore.

Sl.Nos	Name Of Building	Physical Progress (%)	Total Area to be constructed (SQM)
1	Academic Block H : PROV : G + 3 Storied	90.00%	9684.00
2	Academic Block B : PROV : G + 3 Storied	53.50%	3120.00
3	Academic Block C : PROV : G + 3 Storied	52.00%	3120.00
4	Girls Hostel: PROV : G + 3 Storied	49.00%	2370.28
5	Dining Block (GIRLS' HOSTEL) : PROV : G Storied	90.00%	484.74
6	Boys Hostel : PROV : G + 3 Storied	16.30%	2370.28
7	Dining Block (BOYS' HOSTEL) : PROV : G Storied	90.00%	484.74
8	Type III Qtr : PROV : G + 4 Storied	70.00%	1165.64
9	Type IV Qtr : PROV : G + 3 Storied	37.00%	1196.25
10	RECREATION FACILITIES (G+1)	29.00%	1316.48
11	Director Banglow : PROV : G + 1 Storied	1.00%	214.00
12	Type II Qtr : PROV : G + 3 Storied	5.00%	1882.00
13	Administrative Building : PROV : G + 1 Storied	5.00%	2065.84
14	Type V Qtr : PROV : G + 1 Storied	3.00%	472.42
15	Animal House : PROV : G + 1 Storied	8.00%	2647.42
16	Allied Development works (Road, Drain, Water Supply etc.)	35.00%	

Academic Block-H Front Elevation

Girl's Hostel Building

Structurally completed Type-III Quarter

Academic Block-C

25. ACCOUNTS STATEMENT FOR F.Y 2016-18

Total Allocation by the Government during the last 2 years

Year	Allocation BE (Rs. in crores)	Allocation RE (Rs. in crores)	Total Release (Rs. in crores)
2013-14	18.8	3	2.88
2014-15	21	4	3.91
2015-16	21	21	21
2016-17	19.50	26.27	26.27
2017-18	31.50	52.00	52.00

PARTICULARS	FY 2016-17	FY 2017-18
Grants Received		
- Revenue	4,00,00,000.00	6,00,00,000.00
- Capital	22,27,00,000.00	46,00,00,000.00
	26,27,00,000.00	**52,00,00,000.00**
Other Income/Receipts	64,69,003.00	33,00,000.00
Total (A)	**2,61,69,003.00**	**52,33,00,000.00**
Expenditure		
- Revenue Expenditure	43,761,445.00	5,96,30,661.00
- Capital Expenditure	15,346,874.00	15,70,00,000.00
- Capital Advances (Campus Construction)	207,700,000.00	26,14,00,000.00
Total (B)	**266,808,319.00**	**47,80,30,661.00**

26. OBITUARY

Prof. C. L. Kaul (1936-2018)

Prof. Chaman Lal Kaul, Son of Dinanath and Dhanwati Kaul, was born on October 10, 1936 in Srinagar, India. He did his Postdoctoral research at University of Glasgow, Scotland. He was a Research scientist at Chemical Industries Basel-GEIGY, Bombay, 1965-1977, group leader, 1977-1979, Research manager Boots Pharmaceuticals, 1979-1984, director research, 1984-1987, director research and development, 1987-1994.

He was the founding Director of first NIPER of the nation and his tenure as Director of NIPER, SAS Nagar, was from 1994 to 2004. He also served as Campus Director of Western International University, India, since 2005. He also served as Member governing board of Punjab Health Corporation, Chandigarh, India, since 1995. Prof. Kaul, the founder Director of NIPER, SAS Nagar has left for heavenly abode on 16th February, 2018.

Dr. CL Kauls' pivotal contribution in the establishment of NIPER is a big service to the nation as the country needed an organization like NIPER to carry on the baton of Pharmaceutical Research and Education for the eventual goal of serving the society. Today NIPERs have earned international repute and are the Centre of excellence in Pharmaceutical Education and Research. Dr. CL Kaul was instrumental in designing the strategy of establishing National institute for Pharmaceutical Sciences and executing it to the perfection.

The NIPER family is immensely sad on the loss of such a learned Educationist and Researcher. We will always be indebted to Dr. CL Kaul for his immense contribution in bringing up such an Institute of National Importance. We pay our sincere tributes to this great Pharmacist who has changed the Indian scenario of Pharmaceutical Sciences.


NIPER-G New Campus

NIPER Guwahati

NIPER Guwahati

National Institute of Pharmaceutical Education and Research (NIPER) - Guwahati

(Dept. of Pharmaceuticals, Ministry of Chemicals & Fertilizers, Govt. of India)

C/o NITS-Mirza, Santipur, Parlli Part, NH-37, Mirza, Kamrup, Assam - 781 125.
E-mail: director@niperguwahati.ac.in, niper-guwahati@nic.in
Website: www.niperguwahati.ac.in