



## **Conference Report**

### **National symposium on Translational Drug discovery: Current trends and future interventions held at Assam down town University on 10th & 11th November, 2018.**

A two day long national conference was organized by the Faculty of Science of Assam down town University in collaboration with Society of Biological chemists (India), North east chapter (SBC) and Tea Improvement consortium, Tocklai (TIC). This multi themed conference proves to be an excellent platform for the exchange of scientific ideas in the cutting edged areas of research pertaining to biological sciences. The conference witnessed participants from leading academic and research institutes of North East India, apart from brain storming lectures delivered by some of the eminent scientist across the country.

The inaugural session was began with the welcome address from Dr BG Unni and Chairman who emphasized on multidisciplinary drug intervention strategies for developing therapeutics and the need for extensive collaboration among different institutes. The session was followed by the speech from the Vice-Chancellor Prof. Amarjyoti Choudhury and the Chancellor Dr.N.N. Dutta. Professor Choudhury urged the researchers to explore the huge biodiversity of the North East region for the betterment of social welfare, while Dr. Dutta stressed on the need for collaboration among basic research scientist and clinicians for more effective use of the drugs. Dr. Pawan Sharma, Visiting Research Professor, College of Veterinary Sciences, Assam Agricultural University highlighted the changing environment for modern drug research and appealed to the scientific fraternity to have more flexibility in terms of accepting new ideas. The key note talk was delivered by Dr. T Ramamurthy, National Chair and Head, Centre for Human Microbial Ecology, Department of Biotechnology - Translational Health Science and Technology Institute Biotech-cluster on current status of drug discovery and deliver, prospective observation on infectious diseases, where he focused on the global menace of drug resistant diseases and the means of reducing the burden.

Two parallel sessions namely exploring biodiversity for complementary therapies and Nano technology tools in drug discovery process went on to discuss various aspect related to it. Dr M.C Kalita, Department of Biotechnology, Gauhati University delivered a talk on traditional herbal health care system of North east India.; quest novel drug potential, where he highlighted the need for scientific study on the folk medicine of the region. He also provided a brief account of the traditional herbs & its medicinal significance. Dr. Timir Tripathy, Department of Biochemistry, North Eastern Hill University, who address the gathering about new potential drugs for treating liver fluke based therapy where he targeted thyrodoxine glutathione reductase using in silico approach. Dr Kandarpa Saikia, Department of Bioengineering and Technology, Gauhati University delivered his talk on screening of medicinal plants against antibiotics resistant bacteria and fungi. He also showcased few results of his cell line studies. Dr. Annirudha Sarma. Department of Biotechnology, Pandu College, emphasized on exploring biodiversity with respect to Nutraceuticals and value addition.

The second session was dedicated to share the new finding in the field of Nano science by the resource person. Dr. Devasish Chowdhury, Material Nanochemistry Laboratory, IASST, Guwahati emphasized on the expanding family of synthetic carbon nanoallotropes featuring the most nascent fluorescent carbon nanoparticles (CPs) viz. carbon dots (CDs) and graphene quantum dots (GQDs). He showed its emerged as promising substitutes for heavy-metal-containing semiconductor-based quantum dots. Dr. Pramod Kumar, Department of Pharmaceutical Analysis, NIPER stressed on Oral delivery of dimethyl fumarate based solid lipid nanoparticles along with fat soluble vitamins, and its formulation, optimization, neurobehavioral as well as histopathological studies. Dr. Debabrata Baishya, Department of Bioengineering and Technology (GUIST) Guwahati University focused on the tremendous need for systematic fundamental research into the interaction between biomolecules and the abiotic components that could be attempted to develop biomolecule-nanoparticle conjugates for cancer therapies. Dr. Subham Banerjee, Department of Pharmaceutics, NIPER, Guwahati, spoke on the Lipid nanoarchitectonics to improve oral bioavailability of first-line antitubercular drugs which could be an efficient, promising and alternate delivery approach for RIF (rifampicin) as a complementary translational approach to existing TB drug discovery research.

The post lunch parallel sessions was namely modern drug intervention strategies and Pharmacological intervention in drug design and discovery were mainly concentrated on its new finding. The modern drug intervention strategies session was started by Dr Anil Mukund Limaye from IIT Guwahati spoke on GPER1receptor, the prognostic implications of GPER1 expression, and the role of an upstream CpG island in DNA methylation dependent silencing of GPER1. He also discussed the possibilities and challenges of targeting GPER1m as a biomarker in endocrine cancers. Dr Utpal Mohan, NIPER, Guwahati spoke on how DNA cleaving enzymes or DNAzymes is potentially useful to cleave mRNA of BCL2 gene which is up regulated in breast cancers. His research group evolved DNAzymes by the *in vitro* selection process SELEX (**S**ystemic

Evolution of Ligands by Selective Enrichment) for the mRNA coding for genes, which are crucial targets for cancer therapeutics. The evolved *BCL-2* mRNA cleaving deoxyribozymes are able to down-regulate *BCL-2* expression and induce apoptosis thus resulting in clearance of cancerous cells. Dr Sujoy Bose, Department of Biotechnology, Gauhati University spoke on dengue virus and its etiology in patients enrolled from Guwahati city. His research group suggested prognostic significance in dengue infection of both RANTES and CCR5 expression and the probable utility of CCR5 antagonists independently or in combination with supplementation of RANTES as an alternative and additional component to supportive therapy in treatment of dengue patients. Dr Prasenjit Manna, Biological Science and Technology Division, CSIR-NEIST, Jorhat, spoke on the role of Vit K supplementation in type 2 diabetes (T2D). His research group demonstrated that VitK supplementation has a positive effect on maintaining glucose homeostasis in T2D via activating VK-dependent Gla-proteins. Dr Pankaj Barah, Department of Molecular Biology and Biotechnology (MBBT), Tezpur University emphasised on Predictive, Preventive, Personalized and Participatory medicine (P4 medicine or systems medicine). He also discussed a case study from an on-going systems medicine pilot project (Sys-Glio) on glioma evolution and therapy resistance in human.

The fourth session on Pharmacological intervention in drug design and discovery was started by Dr Ajaikumar B Kunnumakkara, Department of Biosciences and Bioengineering, IIT, Guwahati. On his talk he spoke about Akt/mTOR pathway and contribution by his team towards Akt1 and Akt2 which are the major iso forms that leads to the development of oral cancer. Dr. VGM Naidu, NIPER threw light on the recent advances on breast cancer therapy, which is one of the major causes of mortality. He also stressed on PI3K/mToR kinase signaling network as molecular target for breast cancer. Dr.Gauthaman Karunakaran, Himalayan Pharmacy Institute, Sikkim spoke about the drug response and development of adverse effect to drug. He also made a point on traditional pharmacogenetic approach relies on studying sequence variations in candidate genes suspected of affecting drug response. Dr. Vikas Srivastava, CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow spoke about the arsenic toxicity. He emphasized about the identified various modulators of arsenic associated cancers and is targeting them with chemical and nutritional intervention strategies. Dr. Saikat Sen, Faculty of Pharmaceutical Sciences, Assam down town University, expressed his vast knowledge on traditional and folk medicines and asserted that a vast number of drugs in clinical medicine available today were derived from herbal resources used in traditional medicine.

The second day of the conference was focused on industry and academia joint ventures. The inaugural talk on development of drugs from plants sources for Neurological disorders was delivered by Dr. Chandana Baruah, College of Veterinary Sciences, Assam Agricultural University.

The key note talk was delivered by Dr. Priyankshu Sarma, Innotech Agro Postikam Pvt Ltd. spoke on the importance of government and academic institute involvement in speeding up the process of translational research particularly for creating a conducive atmosphere start up. He urged the young minds to take start up as a career options.

The post tea talk was started with Dr. Bula Choudhury, Guwahati Biotech Park, which was dedicated to elaborate various facilities available in Guwahati Biotech Park. She spoke about the upcoming government schemes which will help the young minds to establish start ups. Dr Supriyo Sen, Ouija Biosolutions Pvt. Ltd., Guwahati, Assam spoke about the various steps involved to reach a product from laboratory to marketplace – seeking to create the right meaning in translation. Mr. Monjoy Kumar Choudhury, Founder, Ayuresurgence, Bawana Industrial Area, North West spoke about the challenges in translation from academics to industries interfaces. He also made a strong point regarding the problems he faced during his journey and add a note on the importance of role of government to establish the industry.

A souvenir consisting of all the abstract, articles for oral ad poster presentations was released which witness the extensive research on the theme of the conference. The competition for the Best Poster and Oral presentation was held among the students and faculties, and the winners for the best poster were awarded with the “Chairman’s award” in cash and certificates of appreciation. Dr. Manash Pratim Sarma, Dr. Swapnil Sinha and Dr. Nayan Talukdar jointly presented the summary of the presentation at the valedictory programme.

**Dr. B G Unni**  
**Director Research**  
**&**  
**Chairman, Conference**