

TRendys-2012 Meeting Report

The 19th Annual Meeting of TRendys 2012 was organized by the Department of Biotechnology, GITAM Institute of Science, GITAM University, Visakhapatnam on 14th & 15th December, 2012 to discuss various emerging concepts in Molecular biology, Biochemistry, Cancer biology, as well as regulatory issues in release of genetically modified crops. The organizing committee comprised of Dr. M V V S Murthy, President, GITAM University as Chief patron, Prof. G Subramanyam, Vice Chancellor of GITAM University, Prof. D Hari Narayana, Pro-Vice Chancellor, Prof. N Laxmana Das, Principal, College of Science, Prof. T Ramana, Dean School of Life Sciences, and Prof. S V Rajgopal, Head of the Department of Biotechnology, GITAM Institute of Science, GITAM University. The other members of organizing committee include Prof. K Venkateswara Rao, Dr. P Shanmukh Anand, Dr. T Srinivasan, Dr. B Veerendra Kumar, Dr. M Anitha, Dr. N Sai Kishore and Dr. D Shukla.

TRendys 2012 was inaugurated by Dr. S R Rao, Advisor, Department of Biotechnology (DBT), Govt. of India, New Delhi by lightening the lamp. The inaugural function began with the welcome address by Prof. S V Rajgopal, the local convener. Prof. Kalluri Subba Rao, National Convenor of TRendys presented the history of TRendys and its evolution as a national forum with the mission to promote new ideas and innovative thinking in the frontier areas of life sciences, particularly biochemistry and molecular biology. He briefed about the earlier annual meetings of TRendys at various national institutes, universities and list of prominent invitees who presented/shared their new ideas, hypotheses on related subjected areas. Dr. S R Rao in his opening remarks highlighted the financial support of Indian government agencies in carrying out research in thrust areas of biotechnology and biochemistry. The inaugural session ended with vote of thanks by Dr. M Anitha.

Prof. M S Shaila, Indian Institute of Science (IISc), Bangalore was conferred the TRendys 2012 oration award. She presented her oration entitled "*Eradication of Rinderpest Disease and Efforts towards PPR Disease Eradication: Contributions*



From left: Prof. T Ramana, Prof. T Ramasarma, Prof. Kalluri Subba Rao, Dr. S R Rao, Prof. D Hari Narayana, Prof. M S Shaila, Prof. N Laxmana Das and Prof. S V Rajgopal

from Basic Research". Her research focuses on these two closely related viruses Rinderpest virus and *peste des petite virus* (PPRV) which cause terrible destruction of livestock. She discussed the research findings in the areas of molecular biology, immunology and vaccine development in relation to Rinderpest virus. She also discussed about the disease and its importance in the Indian context in decision making and its execution in the vaccination campaign. She elaborated the major outcomes of the application of their molecular biology research in the discovery of existence of PPR disease in ruminants in India. She highlighted the research work on PPR virus, impact on the disease epidemiology, detection and possible control measures. To her pride, F.A.O. declared global freedom from Rinderpest disease by the vaccination campaign. She urged the researchers and students to involve in doing good quality research work. Her work was appreciated by a felicitation and presentation of silver memento and shawl by the chief guest.

Prof. T Ramasarma (IISc, Bangalore), patron of TRendys, spoke on "*The Amazing Adrenergic Receptors – My Perspective*". He explained the sequence of events in the action of adrenergic receptors. He elaborated on how noradrenaline binds to the adrenergic receptors on the cell surface and transfers the messages inside the cells for intracellular

responses. He lucidly presented the G-protein coupled diverse physiological and metabolic responses. He enlightened the students about the outstanding discoveries of adrenergic receptors in the last few decades, including the Nobel Prize in 2012 given to Lefkowitz and Kobilka for molecular characterization of β_3 -adrenergic receptor.

Dr. C Jayabaskaran, Department of Biochemistry, IISc, Bangalore delivered a lecture on "*Fungal Secondary Metabolites – A Boom to Pharmacology*". He explained how certain endophytic fungi are capable of synthesizing the medically important products including novel anticancer, anti-diabetic, insecticidal and immunosuppressive compounds produced by the plants as secondary metabolites. He briefly described isolation of endophytic fungi, culturing of individual endophytes, structure elucidation and biological activity of the secondary metabolites.

Dr. Narottam Acharya, Institute of Life Sciences, Bhubaneswar talked about "*Trans-lesion DNA Synthesis: A Mechanism to Prevent and Promote Mutagenesis*". He described studies on DNA polymerases in yeast and humans, perceptive mechanism of DNA replication and replication through DNA lesions (trans-lesion DNA synthesis), highlighting types of DNA polymerases, DNA replication mechanisms and exogenous and intrinsic impediments which cause deleterious effects to cell.

Prof. K Subba Rao (University of Hyderabad), Convenor of TRendys, expressed his views on "*Health vs Traditional Indian Medicinal Systems*". He reviewed how Ayurvedic medicinal system extended into various directions, its glory during pre-Buddha period and monumental treatises of Charaka and Sushruta, which are standing testimony to this Indian medicinal system. To combat certain chronic ailments, he advocated the use of traditional medicinal system. He also explained about how recent advancements in molecular biology and biochemistry paved the way to examine various Ayurvedic rasayana preparations in a systematic, scientific and multi-dimensional way to combat various ailments of mankind.

Prof. Paturu Kondaiah (Department of Molecular Reproduction, IISc, Bangalore) discussed the subject of "*Microenvironment and Progression/Inhibition of Cancer*". He explained how tumors compete with the normal microenvironment to overcome anti-tumorigenic efforts, often referred as "Occult

Cancer". Intensive research on inhibitors of growth made by fibroblasts/epithelial cells led to identification and purification of one of the TGF-beta isoforms. He then elaborated on the critical role of TGF-beta pathway in the activation of the stromal cells as a facilitator of invasion and metastasis of tumor cells. He briefed on the recent knowledge on the stromal involvement in the progression of tumors and also discussed possible novel therapeutic targets, a currently active research area.

Prof. Anand K Kondapi, Department of Biotechnology, University of Hyderabad, Hyderabad reviewed "*Topoisomerases and Senescence*". The enzymes DNA topoisomerases involved in conversion of topological conformation of DNA have a role in regulation of replication, transcription, segregation of chromosomes. Topoisomerase II isoforms are essential for maintenance of repair capacity. Their close association of these enzymes with cellular senescence during development, growth and ageing was highlighted.

Prof. S J Rahman, Acharya N.G. Ranga Agricultural University (ANGRAU), Hyderabad presented talk on "*Indian Regulatory System for GM Crops: Issues and Concerns of Bt Transgenics*". He explained the role of Review Committee on Genetic Manipulation (RCGM), Monitoring and Evaluation Committee (MEC) and Genetic Engineering Approval Committee (GEAC) in development, regulating, monitoring and release of genetically modified or transgenic crops in Indian context. He briefed the student community about the concerns and recent issues on genetically modified brinjal.

Prof. K V Madhava Rao, Department of Biotechnology, Andhra University, Visakhapatnam gave a lecture on "*Stress Management in Plants: Induction, Formation and Role of Heat Shock Proteins*". He explained about heat shock proteins, major functions of these proteins in plants and their evolutionary conservation. He stressed on the upregulation of these proteins and possible role in stress management, their application in the use of transgenes to manipulate heat tolerance in crop plants.

The two day presentations by eminent professors and faculty from reputed institutes and universities provided the faculty, research scholars and particularly graduate and master student community a new direction of research in molecular biology, transgenic development, cancer biology and biochemistry. Students actively participated and

appreciated the organizers for providing them the opportunity to interact with the distinguished scientists and exposure to the trends in current biological research. Finally, this meeting ended with valedictory address by Prof. M Potharaju, Registrar, GITAM University and vote of thanks by local organizing secretary. One of the distinct features of this meeting at Gitam was the wonderful hospitality and active participation of post-graduate students (about 300 of them) in discussions.

Prof. S V Rajagopal

Organizing Secretary of the TRendys-2012

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