

## ***International Conference: RABAEB-2015!"***

**A International Conference (RABAEB) was** was organized by Department of Biotechnology, KL University, Vaddeswaram, Guntur District, Andhra Pradesh along with student association **BETA** on, 27-August-2015. Registrations of delegates started from 9.00 am to 11.30am on Day 1 and 9.00 am to 10.30am on Day 2. This summary constitutes the report to the conference on the International conference on Recent Advances In Biosciences and Applications of Engineering in production of Biopharmaceuticals (RABAEB) and 9<sup>th</sup> annual convention of Association of Biotechnology and Pharmacy jointly sponsored by the International Society for Neurochemistry, Department of science and technology, Ministry of science and technology, Government of India, Association of Biotechnology and Pharmacy, Department of Biotechnology, Acharya Nagarjuna University. The Conference focused on issues that affect the complexity of genomics, oxidative stress, neurochemical and inflammatory networking in neurodegenerative disorders and stroke

This international conference has received overwhelming response with over a three hundred delegates participating in the conference from various parts of the globe and from seventeen states within India. The inaugural ceremony of the conference began with an invocation song and our organizing secretary Dr. K.Srinivasulu welcomed the dignitaries and the august gathering and explained about the strength of the department and whole heartedly thank the management of KL University for the support in organizing such a prestigious huge event. Our convener Prof. K.R.S. Sambasiva Rao then introduced the keynote speaker and explained the theme of the conference and how much it is befitting the present scenario. Dr. David Berginson, who has been at the helm of The Institute of Crop Research in the semi-arid tropics (ICRISAT), started with stating the reality about how the digital technology is highly interconnected with improvement of agriculture. He stressed on the fact that in today's world the e-governance is required for modern agriculture practices for better and more refined methods of agricultural practices and also emphasized that value addition to

agricultural products would increase the income for farmers. I look forward to working closely with all staff and partners to realize ICRISAT's vision of a prosperous food secure and resilient dry land tropics" said Dr. Bergvinson. He ended his address with calling on the audience for building technology to save agriculture. Guest of honors, Dr. Virendar Chauhan, Former Director, ICGEB and Prof. Sankar Mitra, Senior scientist and full member, Radiation oncology Houston Methodist research institute, USA, spoke in an inspirational way regarding the recent advancement in science and technology and the advances in the field of Biotechnology in India. Our beloved vice chancellor expanded his wishes and congratulated the Department for organizing the event. Our Vice-President Sri Koneru Raja Hareen addressed the gathering about the technological advancement and the potential opportunities in biotechnology. Dr B. Jayakumar Singh, Secretary, Associate Dean (Sponsored research), proposed a vote of thanks and reiterated the keynote speaker's views.

The first technical session was delivered by Dr. Sankar Mitra, Professor, Department of Radiation Oncology, Houston Methodist Research Institute. He spoke on "Implications of Oxidative Genome Damage and Repair in Diseases Ranging from Cancer to Neurodegeneration". His talk focused on repair of both endogenous and induced oxidative damage in mammalian genomes. He also explained the involvement of BER proteins in repair of error-prone double-strand breaks in the genome which contributes to survival of cancer cells.

Following the inspirational talk of Dr. Sankar Mitra, Prof. Dr. Lokendra Singh, Director, DRDE, Gwalior spoke on Waste Management and Personal Protection Technologies for Defence and Civil Sectors

He described the enormous quantum of work that has been carried out in north east region of our country which has hot and humid climate. His presentation had slides explaining the methods which they have used to develop herbal termite, mosquitoes and leech repellents, which are non-toxic, cost effective, eco-friendly and has natural fragrance. Beside these products, information regarding immunological biosensor and various detection and diagnostic tools that have been designed and developed for toxins of bio-defence as well as for public health importance was also presented.

Rathnagiri Polavarapu, President & CEO, Genomix Biotech Inc and Genomix Group of Companies 2620 Braithwood Road, Atlanta, GA 30345, USA presented a lecture on Challenges in serving the neglected community: Translational research and product development for animal and human healthcare for resource limited areas. His major focuses is to develop rapid, inexpensive, simple, yet sensitive, diagnostic kits for pen side, design multivalent vaccines, therapeutics and instrumentation for animal healthcare to help farmers at point of care areas, referral centers, and for surveillance purposes. His talk was mainly focused on animal healthcare and livestock related clinical diagnostics. The session was chaired by Dr Kavi Kishor (Department of Genetics, Osmania University, Hyderabad) and Dr. P.Suprasanna (Nuclear Agriculture and Biotechnology Division, Bhabha Atomic Research Centre Trombay, Mumbai). He also mentioned the emphasis of training in Infosys, and the meritocracy principle followed.

The second round of track sessions was chaired by Dr K.S.Jagannatha Rao Director, INDICASAT AIP, City of Knowledge, Republic Panama and Muralidhar L. Hegde, Assistant Professor of Neurosciences, Weill Cornell Medical College of Cornell University Faculty of Institute of Academic Medicine, USA. Second session started with a talk by Dr. Rahul Bhattacharya, Division of Pharmacology and Toxicology, Defence Research and Development Establishment, Gwalior. He spoke on Toxicology and Management of Cyanide. His talk highlighted the various threats posed by cyanide, its mechanism of toxicity, and new treatment strategies. Also he explained the therapy of cyanide antidotes, new investigational drugs with diverse mechanisms.

The next talk in the second session was by Dr. Venkata Mohan, Bioengineering and Environmental Sciences (BEES), CSIR-Indian Institute of Chemical Technology (CSIR-IICT). His presentation enumerated the concept of waste remediation integrated with biorefinery concept in a closed loop approach. Session was chaired by Dr. S.J.S. Flora Associate Director, Division of Pharmacology and Toxicology, Defense Research and Development Establishment, Gwalior. After the scientific feast, delegates and participants enjoyed the cultural program organized by student association of the department (BETA).

The second day began with the fourth technical session being delivered by Dr. V. S. Chauhan International Centre for Genetic Engineering and Biotechnology, New Delhi. He delivered a talk on the Current Scenario for the development of Malaria Vaccine. His talk gave a better understanding of parasite biology and effector mechanisms involved in protective immunity against malaria pathogens. He also explained about the pre-clinical development and phase-1 trials of malaria vaccine in humans.

An inspiring talk on diabetes was given by Swamy Mruthinti Department of Biology, University of West Georgia, Carrollton, GA, USA. Is Diabetes a Risk Factor for Inflammatory Diseases such as Alzheimer's disease? Was the question raised by him towards the audience and he detailed the risk factors of diabetes. He has explored the effect of curcumin, an active ingredient in turmeric for its therapeutic potential against inflammation and detailed the positive correlation between RAGE and A $\beta$  in the plasma of experimental animals as well as in human subjects with different stages of cognitive impairment. Bioactivity of the glasses immersed them in simulated body fluid (SBF) solution prepared in the laboratory was explained by a Biophysicist M. Piasecki, Institute of Physics, J. Dlugosz University, Al. Armii Krajowej, Czestochowa, Poland. The quantitative analysis of his results indicated that about 6.0 mol% of TiO<sub>2</sub> is the optimal concentration for achieving better bioactivity of glasses. The session was chaired by Dr. Suresh Challa (NIN, Hyderabad) and Dr. Virendar.S. Chauhan (International Centre for Genetic Engineering and Biotechnology, New Delhi).

The session five of the conference was chaired by Prof. K. Venkateswarlu, Institute of Life Science, School of Medicine, Swansea University, Swansea, UK. First talk was on Metal poisoning by Dr. S.J.S. Flora, Associate Director, Division of Pharmacology and Toxicology, Defence Research and Development Establishment, Gwalior, India. He validated the acceptability of MiADMSA as a potential chelator for the treatment of chronic arsenic poisoning. His studies showed that MiADMSA was effective in reversing the biochemical variables suggestive of oxidative damage as well as potent enough to reduce tissue metal burden. He also added that Phase I clinical trials of this drug for chronic arsenic poisoning are currently in progress.

Dr. Sudhakara reddy Department of Biotechnology, Thapar University, Patiala, Punjab, India talked about the potential of biominerals as novel way to pave way for eco-friendly, durable, low embodied energy and sustainable construction materials. He explained the durability issues of microbially induced calcium carbonate precipitation (MICCP). The utilization of aerobic and anaerobic bacterial cells to provide a unique opportunity to harness natural biological processes for engineering purposes was explained clearly during his talk. Dr. Sudhakara reddy also stressed on the significance of advantage of using novel and eco friendly biological approach with very low embodied energy for construction

The third technical session was delivered by Dr Venkateswarlu Kanamarlapudi, Institute of Life Science, College of Medicine, Swansea University, United Kingdom. His lecture was on “Getting in to the Brain: Potential of Nanotechnology to Manage NeuroAIDS and Drug Addictions”. He reported the development of a Magneto-Electric Nanocarrier (MEN) which is used to deliver HIV drugs impenetrable to brain and inhibit HIV and reverse opiate mediated adverse neurological effects

Dr Venkateswarlu Kanamarlapudi gave valuable insights on the usage of nanocarrier which is anticipated to simultaneously reduce Neuro-AIDS and opiate addiction in HIV-1 infected opiate addicts which is a new interesting topic. Dr Venkateswarlu Kanamarlapudi lecture introduced us to a new technology which will have universal applicability against a variety of other CNS diseases such as Parkinson’s, Alzheimer’s, brain tumors etc. The sixth round of track sessions was dedicated to young scientist award competitive session. Young scientist award competitive session was divided in to two groups (Above the age of 30 and below the age of 30). The competitive session for the division one (Above the age of 30) was chaired by Prof. Swamy Mruthinithi and Prof. V. Venkatadasu and Prof. D.V.R. Saigopal. Nearly twenty young scientists within and outside India presented their research findings. Similarly Dr. S.J.S. Flora, Prof. Kanumarlapudi Venkateswarlu and Prof. M.S. Reddy were the chair persons for the other group (below the age of 30).

Session seven had some wonderful talks from D.N. Rao (Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India); K.S.Jagannatha Rao Director, INDICASAT AIP, City of Knowledge,

Republic Panama and Prof. Hari S. Sharma, Institute for Cardiovascular Research Institute, Department of Pathology, VUmc University Medical Center, Amsterdam, The Netherlands.

Genomics of Human Heart failure and Identifying Therapeutic Targets were the prime focus in the talk by Prof. Hari S. Sharma. He hypothesized various forms and stages of cyanotic congenital heart disease in children are associated with a number of characteristic novel genes

Dr.R.S. Prakasham, Bioengineering and Environmental Sciences, Indian Institute of Chemical Technology,Hyderabad spoke on “Biosynthesis of  $\alpha$ -(1 – 3)-D-glucans, characterization and evaluation of bioactive properties”. He has evaluated glucans for their antibacterial properties using gram negative and positive bacterial strains and also studied anti-fungal activity. They also carried out a molecular characterization of the enzyme glucosyltransferase by SDS-PAGE analysis which denoted that the biocatalyst produced by *S. mutans* has a molecular weight of ~125 kDa. Dr.K.S.J. Rao section on “Experimental and modeling data on Amyloid-Tau- Synuclein networking complexes in relation to metal toxicity in neurodegenerative” was most interacted session. He raised questions on several issues related to conserve presynaptic brain protein. Also he discussed the role of nutritive/dietary molecules in the management of neurodegenerative pathways. Dr.K.S.J. Rao synthesized a novel compound Curcumin-glucoside (Curc-gluc), a modified form of curcumin and studied its anti-aggregating potential. Prof. D. N. Rao Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India treated the gathering with his wide knowledge in immunology. He spoke on Evaluation of multiple antigenic peptides (MAP) for diagnosis and vaccine design for Chikungunya virus using envelope E2 peptides. Prof. D.N.Rao have screened late convalescent phase sera and reported few new epitopes of E1 and capsid protein for Chikungunya virus. Also multiple antigen peptide (MAP) approach was used with four different E2 peptide combinations in order to increase its sensitivity over linear peptides. Results from his presentation indicate that MAP 1 could be an alternate antigen for the immunodiagnostics of Chikungunya infections with high sensitivity and specificity. Eighth section of the international conference had talks from Muralidhar L. Hegde, Assistant Professor of

Neurosciences, Weill Cornell Medical College of Cornell University, USA; Prof. D.V.R.Sai Gopal Professor and Chairman BOS, Department of Virology, Sri Venkateswara University, Tirupati and Dr. Challa Suresh Department of Biochemistry, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad. Dr. Challa Suresh spoke on “Intracellular synergistic neuro-toxic effects of lead (Pb<sup>2+</sup>) and  $\beta$ - amyloid peptides in inducing apoptosis and cell cycle in human brain cells”. He spoke about Lead toxicity and cognitive dysfunction. Dr. Sai Gopal spoke on modern approaches on diagnosis of viral diseases. He emphasized better treatment of the suspected patient within time and showered lot of information on Clinical diagnostics in India. He insisted that the national research institutes of different agencies should focus more in the training of the clinicians in this direction and popularize the early diagnosis of the viral diseases. Prof. Muralidhar L. Hegde spoke on “New Discoveries on Genome Repair Defects in Neurons in Neurological Diseases: Role in Disease Progression and Prevention Strategies”. His study revealed that TDP-43 and FUS are critical components of genome damage response in the neurons whose loss of function(s) causing DNA repair deficiency in Amyotrophic Lateral Sclerosis.

Department of Biotechnology takes this opportunity to thank all the chairpersons, rapporteurs, authors of the papers and delegates of the conference for their effort and support in making this conference a memorable and a great success.



**Welcoming of delegates by anchors (G.Yamuna & K.Rohit)**



**Welcoming of guests on to the dais by students**

(From left to right: Dr.K.Srinivasulu, Dr.KRS Sambasiva Rao, Sri.K.Raja Haren)





**Prayer song by the students (D.Chandra Lekha & C.Hima Sagarika of Third year B.Tech)**



**Lightening of lamp by dignitaries on the dais**



**Release of Souvenir by the dignitaries**



**Participants at RABAEB-2015 on 3 days of the conference**



**BETA (Biotech Engineers Technical Association) an student association of the department conducting cultural activities on the first day of the conference**

**Alternate Head**

**Head of the Department**