

14th Annual Meeting of SFRR-India
Kalyani, West Bengal
7-9 January 2016

Report for SFRR

The 14th Annual Meeting of the SFRR-India and International Conference on Translational Research in Ionizing Radiation, Free Radicals, Antioxidants & Functional Food was organized by the Department of Biochemistry, College of Medicine & JNM Hospital, WBUHS, Kalyani, West Bengal on 7th January 2016 to 9th January, 2016. The major aim of this International conference was to foster improved understanding of radical species and related oxidants and reductants, with particular reference to those processes of industrial and medical importance for the benefit of mankind. This conference was inaugurated by the Hon'ble Vice Chancellor of the West Bengal University of Health Sciences. The program was divided into 5 plenary lectures, 8 parallel sessions for invited speakers, oral presentations by the young scientists and poster presentations.

Dr. Subrata Chattopadhyay from Bhabha Atomic Research Centre (BARC), Mumbai delivered key note lecture on how the subtle structural modifications by organic synthesis can provide an economic option of potentiating biological activities as well as reducing side effects of drugs. Dr. Monica Galleano from Argentina provided a rationale to recommend diets rich in epicatechin (EC), either by selecting products with high natural content of EC or EC-enriched foods to prevent the increase in blood pressure. Dr. Tetsuya Konishi from Japan revealed that purified a polysaccharide (HEPS) from the cultured mycelium of mushroom *Heliciumerinacium* (HE) and demonstrated that HEPS prevented H₂O₂-induced apoptotic cell death in gastric mucosal cell line by enhancing cellular GSH level. Dr. Yoshihito IUCHI from Japan emphasized on the recognition and popularization of insect food in the near future by pursuing its functionality. Dr. S. Gautam from BARC suggested that radiation processing of food is a promising technology to ensure food safety and security.

Dr. P S Ray from IISER-Kolkata discussed on development of cyclometalated iridium complexes as agents for photodynamic therapy. Dr. V K Kutala from Hyderabad showed that conjugation of bis-demethoxycurcumin with triphenylphosphonium-enhances uptake and cancer cell death through ROS generation and apoptosis. Dr. Santosh Kumar Sandur from BARC explained the role of Nrf-2 and thioredoxin in baicalein mediated radioprotective, anti-inflammatory and anti-cancer effects. Dr. Undurti N Das revealed that certain bioactive lipids may be exploited as radiation protective molecules.

Dr. Shinya Toyokuni from Japan warrant reconsideration of the role of iron in carcinogenesis and suggested that fine control of body iron stores would be a wise strategy for cancer prevention. Dr. Juan Sastre from Spain suggested that disulfide stress would be a specific mechanism of redox signaling independent of glutathione redox status involved in inflammation. Dr. Corinne M. Spickett from Aston University, Birmingham, UK demonstrated that oxPLs have both inflammatory and anti-inflammatory effects, which are dependent on the cell type, co-stimulants, and specific type of oxPL. Dr. Atis Chakrabarti from Tosoh Bioscience LLC, USA discussed different analytical chromatographic modes useful for the detection and separation of the protein heterogeneity using conventional HPLC.

Dr. Sanjay Gupta from ACTREC, Mumbai showed that chromatin structure influence the sensitivity of DNA to ionizing radiation-induced DNA damage. Dr. Amitava Das from CSIR-IICT, Hyderabad, highlighted the molecular mechanisms of stress response on adult stem cells. Dr. Subrata Adak from CSIR-IICB clarified how O₂ dependent cAMP generation is likely to function in cellular adaptability under various O₂ tensions.

Dr. Chandramani Pathak from IIAR, Gujarat, indicated that ROS dependent activation of JNK1 and ITCH is under surveillance of FADD. Dr. Snehasikta Swarnakar from CSIR-IICB, Kolkata explained the role of omeprazole to stabilize MMP-2 activity, which eventually ensued ECM remodelling during prevention of stress-induced gastric ulcer. Dr. Srinivasan Vedantham discussed on pro-oxidant and pro-inflammatory factors in feto-placental vascular dysfunction in gestational diabetes mellitus.

Dr. Amal Kanti Bera from IIT Madras showed that NO attenuates pannexin 1 (Panx1) mediated currents in HEK-293 cells by activating a cGMP-protein kinase G (PKG) dependent pathway. Dr. Suvro Chatterjee from AU-KBC Research Centre, Chennai proposed a cocktail of Indian spices protect cardiovascular conditions. Dr. Arunabha Ray from University of Delhi explained the regulatory role of NO and oestrogen-NO interactions on the gender based differences in stress-induced gastric ulcerogenesis in rats. Dr. Kavita Gulati from Vallabh Patel Chest Institute, Delhi discussed on involvement of NO in the adaptogenic effects of *Withaniasomnifera*.

Dr. Lindsay Brown from Australia explained that anthocyanins are effective interventions in preventing inflammatory cell infiltration into different organs. Dr. Shyam Prakash from AIIMS, New Delhi discussed on present scenario of antioxidants in changing of life style diseases. Dr. Jayadeep A from CFTRI, Mysore explained that bio-processing by *in vitro* enhancement of hydrolytic enzymes resulted in brown rice products with GABA which improves brain function, diverse polyphenols and oryzanols having anti-oxidant and anti-inflammatory property. Dr. Kalyan Goswami from Sevagram, Maharashtra explained the significance of the oxidative impact of polyphenol rich herbal formulation in development of novel antiparasitic therapy through targeted apoptosis.

Dr. Sasanka Chakrabarti from IIMSAR, Haldia, West Bengal discussed on multiple effects of nutraceuticals on age-related brain deficits using animal model. Dr. Abbas Ali Mahdi from KGMU, Lucknow focused on some of the safety aspects by studying neurobehavioural impairment, biochemical, neurochemical and ultrastructural changes in corpus striatum of male Wistar rats exposed to different doses of silica nanoparticles for 90 days.

Dr. KG Raghu from CSIR-NIIST, Thiruvananthapuram explained mitochondrial dysfunction in H9C2 cells during ischemia and amelioration with *Tribulusterrestris L.* Dr. Debasish Bandyopadhyay from Calcutta University explained the protective role of melatonin against isoproterenol-induced cardiac mitochondrial damage. Dr. Sanjit Dey from Calcutta University discussed on evidence based research using phytochemicals as radioprotectors against ionizing-radiation.

Tea Board of India presented a session on beneficial role of drinking tea. Approximately 180 students and research scholars from different parts of India participated in this conference. 12 oral presentation and 80 posters were presented by the students. It was resolved to support and encourage the transfer of basic knowledge on free radicals and radiation biology to the health profession.

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Dr. Subir Kumar Das
Convener, SFRR-India Conference 2016

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