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- ❖ **Address** : Dept. of Biochemistry, Central Leather Research Institute, Adyar, Chennai, Tamil Nadu-20
- ❖ **Name of the International Conference/ Seminar/Symposium/ Workshop** : 2nd IBN Nanomedicine And Nanoassays-2014.
- ❖ **Title of the abstract accepted** : Doxorubicin conjugated CQE-AuNPs and their application in breast cancer therapy
- ❖ **Venue & Date** : Biopolis, Singapore, 8-9th December 2014.
- ❖ **Money sanctioned** : ₹ 33,082/-
- ❖ **Money reimbursed** : ₹ 30,296/-

Participation Report

The symposium was organised by Institute of Bioengineering and Nanotechnology (IBN), Singapore from 8-9th December 2014. The institute conducts multi-disciplinary research across science, engineering and medicine. The main theme was Nanomedicine and Nanoassays with the focus on cell and tissue engineering, biodevices and diagnostics and finally green chemistry and energy. There were several eminent researchers from the field of nanoscience all round the world who participated and delivered lectures in the symposium. Total number of countries that participated were around 10. The major countries included India, Singapore, China, Japan, Korea, Israel, Germany, USA and Australia. There were several invited talks and 17 oral presentations. The symposium was spread across 2 days and had 7 sessions on Biomarker and diagnostics, green chemistry and sustainable technologies, biomimetic materials, drug, protein and gene delivery and biomaterials and multiscale technologies for cell and tissue engineering.

Some of the major academic highlights presented were on drug delivery using liposomes for bladder and prostate cancer, live cell imaging, detection of major water contaminant lead (Pb), use of aptamers, riboswitches for delivery systems, development of novel therapeutic agents and interventional platforms for cancer therapy. There were works that focussed on biodegradation, sustainable energy, electrochemical energy storage, antimicrobial agents, nanosystems for screening of drugs. Model system for safety assessment, screening and

management, nanotoxicology 3D hair follicle model for testing hair actives were elaborately presented. The major development was in the area of cell, tissue engineering and drug, protein and gene delivery. Tumor targeted delivery of siRNA using calcium phosphate nanoparticles, targeted gene delivery based on hyaluronic acid –green tea catechin nanogel complexes, anticarcinogenic effect of curcuminoid loaded polymethyl methacrylate nanoparticles. Several polymer based nanomaterials were studied for drug delivery applications. Other new developments were focussed on ultra-short peptide hydrogels dressing for wound healing, differentiation of corneal endothelial like cells from human embryonic stem cells.

Some of the new developments that could arise from our work could be investigating the cell death pathways triggered by the green nanoparticles conjugated with doxorubicin, to analyze the expression of proteins like Bcl2, Bax, Bad, Parp, Cytochrome C, caspase 3, 9 and many more. The effect on the mitochondrial membrane potential, nuclear changes and use of animal model (Mice model system) could be experimented.

In addition to the work reported in the poster, we will add more work and that could be submitted for publication in a well reputed international peer reviewed journal.

8. Participant's Contribution to the Symposium

Myself Bhuvanaree S R had attended and presented a poster in the 2nd IBN international symposium which was held in Biopolis, Singapore on 8-9th December 2014. It was organised by the institute of bioengineering and nanotechnology (IBN). The main theme of the symposium was 'Nanomedicine and Nanoassays' which are very relevant to my area of research and current platforms for diagnostics and healthcare. My work focusses on green synthesis of gold nanoparticles (AuNPs) using aqueous extract of *Cissus quadrangularis* and their conjugation with anticancer drug doxorubicin. The drug delivery, cytotoxicity, apoptosis of cancer cells and anti-angiogenic activity of the drug conjugated AuNPs were analysed in my study. This falls aptly into one of the main topic of the symposium called as protein and drug delivery systems.