

# BioAssays & BioEfficacy Models

## TOOLS, TARGETS & TECHNOLOGIES

*PARADIGM SHIFT IN NEW DRUG DISCOVERY & BIOTECHNOLOGY RESEARCH*

*(Under Global Initiative of Academic Network, MHRD)*



**25<sup>th</sup> July -5<sup>th</sup> August 2016**

**A COURSE/WORKSHOP OFFERED BY  
THE SCHOOL OF LIFE SCIENCES AND THE SCHOOL OF  
BIOTECHNOLOGY, JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI**

### **DESCRIPTION OF THE COURSE**

The discovery of bioactive molecules primarily depends on their evaluation in a variety of phenotypic cell-based and pathways-specific/molecular drug targets-based bioassays. The cell-culture based phenotypic screening approaches have gained better acceptance since these assays employ live cells and may have the capacity to predict *in vivo* pharmacological responses in early phase of discovery of bioactive natural products. However, the pathways & targets-based screening technologies still hold significant promise due to recent technological advancements.

A variety of general cell and target-based assays shall be discussed that can measure cell proliferation, toxicity, cellular markers, enzymatic activities, activation of specific signaling pathways and morphological changes in the cells. Many of these assays utilize specifically developed transgenic cell lines and evaluation of reporter gene functions. These assays are highly sensitive and can be performed in high-throughput screening (HTS) mode to screen large compounds' libraries

The pharmacological cell- and target-based assays are well suited for bioassay-guided fractionation of natural product extracts in order to isolate the bioactive molecules in purified form that can be further developed as drug candidates or serve as potential bioactive lead molecules which can be chemically modified to optimize the pharmacophores. Recently, pre-fractionation screening approach has shown significant advantages over conventional bioassay-guided fractionation approach. Additionally, advancements and development of new cell and target-based technologies have resulted into a paradigm shift in development of new tools, targets and technologies for BioAssays and BioEfficacy models.

**This course will discuss general principles, techniques and analysis of data for the BioAssays**

and BioEfficacy models. Specific case studies covering exclusive bioassay technologies, their advantages, applications and limitations in new drug discovery will also be discussed.

## INVITED FACULTY

**Babu L. Tekwani Ph.D.**, Principal Scientist & Professor of Pharmacology. National Center for Natural Products Research and Department of BioMolecular Sciences, School of Pharmacy, University of Mississippi, University MS USA.



## COURSE OUTLINES

**Module 1-** Principles and Technologies for BioAssays

**Module 2-** Instrumentation, Data analysis, Compliances and Good Laboratory Practices

**Module 3-** Applications of *BioAssays* & *BioEfficacy* models and Therapeutic Areas

## WHO SHOULD ATTEND

- Honors Under-graduate (final year) and Graduate (MS & Ph.D.) students Life Sciences, Biotechnology, Biochemistry, Microbiology & Immunology, Molecular Biology, Pharmaceutical sciences, Pharmacology, Biology and other allied disciplines;
- Faculty and Research Scientists in Life Sciences, Biotechnology, Biochemistry, Microbiology & Immunology, Molecular Biology, Pharmaceutical sciences, Biology and other allied disciplines.
- R&D personnel from Pharmaceutical and Biotechnology companies and Contract Research Organizations.
- **PRE-REGISTRATION REQUIRED-For Registration apply online at:**  
<http://gan.iitkgp.ac.in/GREGN/index>

## COURSE FEES

JUN Students –Free (Registration Required)

**Others-**

Students and Post Doctoral Fellows INR 1000

Academic Faculty Scientists Techs- INR 1000

Company- INR 5000

Foreign Participants-US\$ 400

Foreign SARC participants -US\$ 250



**LIMITED HOSTEL ACCOMMODATION AVAILABLE FOR OUTSTATION PARTICIPANTS ON FIRST-COME-FIRST BASIS**

## HOST FACULTY

**Prof. Rental Madhubala**

School of Life Sciences

[rentala@outlook.com](mailto:rentala@outlook.com)

**Dr. Rohini Muthuswami**

School of Life Sciences

[rohinimuthuswami@gmail.com](mailto:rohinimuthuswami@gmail.com)

**Dr. Rupesh Chaturvedi**

School of Biotechnology

[rupesh@mail.jnu.ac.in](mailto:rupesh@mail.jnu.ac.in)

**Dr. Manoj Munde**

School of Physical Sciences

[mundemanoj@gmail.com](mailto:mundemanoj@gmail.com)