NIAB
National Institute of Animal Biotechnology

राष्ट्रीय पशु जैव प्रोधोगिकी संस्थान
National Institute of Animal Biotechnology

Seminar Series

1st July 2013

Speaker

Dr Sireesha V Garimella
National Cancer Institute, NIH, USA

Title: "RNAi Screening for Novel Target Identification"

RNAi-based screening and analysis offers the most versatile approach for conducting the gene specific loss of function (LOF) studies that are critical for determining the normal and/or disease-related roles of a protein. An siRNA screening approach was used to identify novel molecular targets for the treatment of triple-negative/basal-type breast cancer, a subset of breast cancer which lacks targeted therapy in the clinic. A primary RNAi screen of the human kinome, targeting 690 kinases, conducted in the triple-negative/basal-like breast cancer cell lines identified the cell-cycle protein, WEE1, as a potential therapeutic target. WEE1, a tyrosine kinase, serves as a critical component of the double-stranded DNA breaks response pathway by activating the G2/M cell cycle checkpoint. Further, chemosensitization screens of the human kinome (690 kinases) and 300 additional genes were performed to understand the regulation of apoptotic pathways regulated by TRAIL (TNF-Related Apoptosis Inducing Ligand). The combination of the decrease of a gene by siRNA, followed by the treatment of the cells with TRAIL was used to identify new proteins and pathways that directly or indirectly modulate the pharmacology of this ligand. Therefore, these studies illustrate the role functional genomics can bring to translational research with the goal of directly impacting therapeutic approaches to diseases.

Venue: Conference Room, NIAB

Time: 11.30 AM to 12.30 PM

All are cordially invited.

Director NIAB