



School of Interdisciplinary Research (SIRE)

Indian Institute of Technology Delhi, New Delhi

SIRE Webinar

on

Strengthening the Pillars of Nanomedicine to Combat Cancer



Prof. Avinash Bajaj
Regional Centre for Biotechnology
Faridabad

Date: **March 12, 2021 (Friday),**
Time: **04:00 pm**

Abstract

Multiple cycles of chemotherapy is the most unavoidable treatment used for cancer patients in spite of the toxic effects caused by chemotherapeutic drugs. In spite of the engineering of large number of nanomaterials, few formulations have reached the clinic. Major reasons for poor clinical success of cancer nanomedicine is poor in-depth understanding of the mechanism of these nanotherapeutics. In my talk, I will talk about two stories, where in first story I will describe our attempts to engineer non-toxic nanomicelles for delivery of docetaxel and show their activities in murine models and in rhesus monkeys. We observed that these nanomicelles are more effective than clinical formulations and are responsible for epigenetic changes to execute their therapeutic effect.

In second part of my talk, I will talk about how in-depth understanding of the mechanistic details for a drug delivery vehicle can help in design of future nanotherapeutics, where we developed and used a localized drug delivery system to target the tumor microenvironment. I will show the how alternative splicing of sphingolipid genes is crucial for executing the therapeutic effect of a localized drug delivery vehicle .

Speaker's Brief Bio -

Prof. Avinash Bajaj did his Ph.D. from Indian Institute of Science, Bangalore. After postdoctoral training from University of Massachusetts, Amherst USA, he joined Regional Centre for Biotechnology, Faridabad. Since 2010, his group is working on engineering of biomaterials for antimicrobial therapy, cancer therapy, and gene therapy.

All are cordially invited to attend the webinar.