



Invitation to MTech Thesis Defense of Abhishek Agarwal: July 15, 2019 (Monday): 15.00-16.00 IST

In Partial Fulfillment of the Requirements for the Degree of
M.Tech CB

Abhishek Agarwal (MT17141)

Will defend his thesis

Title: "Finding correct mouse model for human cells using single cell genomics"

IIIT-D Faculty and Students are invited

Date: July 15, 2019 (Monday)

Time: 15.00 – 16.00 IST

Place: CB Meeting Room (3rd Floor, R&D Building)

Examiner:	Internal:	Sriram K.
	External/Internal:	K K Chaturbedi, Indian Council of Agricultural Research
	Advisor:	Vibhor Kumar

Abstract

A significant advancement in molecular biology has expanded the understanding of the biology of different diseases. However, these discoveries have not completely evolved into the precise treatment of the patient with diseases like cancer. One of the most challenging factors that aren't considered predominantly is the limitation with the in vivo diseases models used in the preclinical studies. Since human and mouse share common genetic constitute, therefore the house mouse (*Mus musculus*) have been the preferred mammalian model for genetic research. However, the mouse being extensively used as a model for human in the genetic researches in various studies, but lacking the fact that are they targeting the specific cell or tissue that is corresponding to the human cell or tissue. Also, these studies do not acknowledge the impact of the evolutionary distance of the homologous gene in the two species. Here we explored a comprehensive understanding of these mentioned factors and find the correct mouse model for a human cell using single-cell genomics. We focus on two important aspects: constructing the model that can predict the specific mouse cell respective to the human cell and heterogeneity in the genetic structure of human and mouse during the course of evolution.