TIFR Centre for Interdisciplinary Sciences
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Seminar

Rapid production and screening of HIV-neutralizing antibodies

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The high mutation frequency of human immunodeficiency virus (HIV) makes it difficult to design effective therapeutic strategies to neutralize the virus. Monoclonal antibodies (mAbs) are an important class of therapeutics agents today and several broadly neutralizing antibodies against HIV have been identified recently. Advances in automated screening and liquid handling have also resulted in the ability to quickly discover antigen-specific candidates from various libraries (phage, bacteria or yeast etc). However, bottlenecks in cloning and expression of antibody hits and quick scale up to produce pre-clinical quantities of humanized mAb hinder similar high-throughput evaluation. Thus, hit-to-lead identification and functional evaluation of interesting candidates continues to be very expensive and time-consuming. By combining the advantages of overlap extension PCR (OE-PCR) and a genetically stable yet easily manipulatable microbial expression host Pichia pastoris, we have developed an automated pipeline for the rapid characterization of full-length mAbs. Here, I will describe the feasibility and cost-effectiveness of our approach utilized for the rapid production and screening of broadly neutralizing antibodies against HIV.

Tuesday, Mar 10th 2015

11:30 AM (Tea/Coffee at 11:15 AM)

Seminar Hall, TCIS