3 DAY TRAINING COURSE

NEXT GENERATION SEQUENCING DATA ANALYSIS USING IMMUNOME DATA

5-7 JULY, 2017

Department of Biomedical Science, Shaheed Rajguru College of Applied Sciences for Women, University of Delhi, Vasundhara Enclave, East Delhi, New Delhi- 110096

BioDiscovery Group, India in collaboration with Department of Biomedical Science, Shaheed Rajguru College of Applied Sciences for Women, University of Delhi is glad to announce 3 day training course on Next Generation Sequenicng The Next Generation Sequencing workshop will be conducted for 3 days for which participants have to bring their own laptop and for which the Linux environment will be provided by us so that student can use that for running NGS processes on their laptops.

PARTICIPANTS HAVE TO BRING THEIR LAPTOP FOR TRAINING

INTRODUCTION

The completion of the Human Genome Project in 2003 ushered in a new era of rapid, affordable, and accurate genome analysis called Next Generation Sequencing (NGS). NGS builds upon "first generation sequencing" technologies to yield accurate and cost-effective sequencing results. The biggest advances in genome sequencing have been increasing speed and accuracy, resulting in reduction in manpower and cost. This speed is only because of high throughput next generation sequencing.

NGS is characterized by improved accuracy and speed, but also reduced manpower and cost. There has never been a time where it has been as cheap, convenient, or straightforward to sequence a genome. Arguably, the biggest improvement has been the development of parallel analysis, which increased the sequencing speed.

This 3-day training course will focus on the use of efficient technologies used in the next generation sequencing data analysis using Immunome data, the first step in a bioinformatics pipeline for analysing NGS data is usually to align the reads to a reference genome in addition to inferring the genomic start position of the reads, provide additional information such as the mapping quality scores (mapQ), and possibly also indicate which parts of an alignment may be affected.

COURSE CONTENT

Basic Terminologies.
Introduction to file types in NGS.
What is sequence alignment.
Introduction to Genome Analysis
Database and File Formats in NGS.
NCBI genomics Library.
NCBI resources used in Next Generation Sequencing.
Introduction to analysis of next generation sequencing data.
Install Ubuntu on a windows machine for sequencing data analysis.
What is the FASTQ format (Download files from NCBIs SRA).

Practical application will be done on 2-4 Sequences and the software on which DEMONSTRATION & TRAINING will be given:

Blasting into SRA using NCBI tools.
Retrieving & Checking the quality of Sequence using NCBI tools.
Check your sequenced reads for quality (How to install use FastQC) using NCBI tools.
Process sequence Reads-Quality trimming read joining etc. using ea-utils.
Align immunome data with IMGT.
Align reads using MIXCR.
tcR package (R package for TCR sequencing).
TCR sequencing analysis using tcR package.
Immunome data analysis using VDJ tools.

COMPLIMENTARY
Workshop Material
Lunch & Refreshment
Certificate

TARGET AUDIENCE

With basic knowledge in Life Science and Genomics that would like to receive a comprehensive overview or refresher on the Next Generation Sequencing the target audience comprises:
Student: Bachelor, Masters, PhD, students as well as Faculty and Professors from Microbiology, Biochemistry, Biotechnology, Immunology, Pharmacy, Pharmaceutical Chemistry, Biomedical Technology, Genetics, Bioinformatics, Plant Science and Life Sciences.
Professionals: Biotechnology, Bioinformatics and Pharmaceutical scientists from industry, academia and regulatory agencies.
Hands-on exercises will be performed individually using software tools on your own laptops. (no prior experience required).

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FEE

Student (Graduate/Master/MBBS): 5700 INR
PhD/RS/TA/Resident Doctor: 7300 INR
Faculty/Professor/Lecturer: 11700 INR
Company Professional/Scientist: 17000 INR

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REGISTRATION QUERIES

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