



Hands-on Training- Essential Concepts in Chromatography and Spectroscopy for Biopharmaceutical Analysis

Description: Development of protein-based medicines is the current burgeoning segment of the global pharmaceutical industry. India has successfully placed itself as a leader in “generic” segment and is now steadily working its way up to make a global mark in the “biotherapeutic” segment as well. Unlike a “generic” drug that is a chemically synthesized identical copy of the innovator drug, production of biotherapeutics is a complex process as it involves recombinant expression of the specific protein/ peptide in a biological host. Therefore, the amount and type of permissible structural and functional variations have to be strictly controlled to avoid adverse immunogenic responses arising from the different proteoforms. This requires extensive physiochemical characterization of the structure, structural variation and impurities that may arise from the manufacturing process itself or the host used for the protein production. The potential for the presence of multiple variants in protein-based pharmaceuticals highlights the indispensability of state-of-the-art analytical techniques that can measure these variants in a reliable and accurate manner. As no one technique can capture all possible structural variants of a protein in a high-throughput manner, multiple methods are used to study the different characteristics of each protein. This two-day course work organized by the DBT Center for Biopharmaceutical Technology and National Biopharma Mission at IIT Delhi will cover essential concepts in chromatography and spectroscopy and their application in biopharmaceutical Characterization.

Outline:

Day 1 (23-06-2022)		
Session 1		
Timing	Lectures	Speakers
08:30-09:00	Breakfast	
9:00-10:00	Lecture 1: Concepts in Liquid chromatography 1: Instrumentation	Sumit Kumar Singh (IIT BHU)
10:00-11:00	Lecture 2: Concepts in Liquid chromatography 2: Interactions	Kali Kishore Reddy (CBST, VIT, Vellore)
11:00-12:00	Lecture 3: Concepts in Spectroscopy: Toolbox for Biopharma	Srishti Joshi (CBT, IIT Delhi)
12:00-13:00	Lecture 4: Suggestion (Liquid chromatography solutions for Biopharmaceutical analysis)	Agilent
13:00 14:00	Lunch	
Session 2: Hands-on Training		
14:00-18:00	Hands-on Training (5 members in each group) Group 1: Liquid Chromatography 1	CBT & Agilent
	Group 2: Liquid Chromatography 2	CBT, IIT Delhi
	Group 3: Fluorescence Spectroscopy	CBT & Agilent

Day 2 (24-06-2022)		
Session 1: Hands-on Training		
08:30-09:00	Breakfast	
9:00-13:00	Hands-on Training (5 members in each group) Group 1: Liquid Chromatography 2	CBT & Agilent
	Group 2: Fluorescence Spectroscopy	CBT, IIT Delhi
	Group 3: Liquid Chromatography 1	CBT & Agilent
13:00-14:00	Lunch	
Session 2: Hands-on Training		
14:00-18:00	Hands-on Training (5 members in each group) Group 1: Fluorescence Spectroscopy	CBT & Agilent
	Group 2: Liquid Chromatography 1	CBT, IIT Delhi
	Group 3: Liquid Chromatography 2	CBT & Agilent