

## COURSE - II ADVANCE TRAINING FOR PHARMACEUTICAL INDUSTRY

**The overall goal of the training program in biotechnology** can lead to a multitude of careers in botany, genetics, medicine and biotechnology. While entry-level positions can be achieved with a bachelor's degree, greater levels of education afford more opportunities - specifically with regards to research and teaching opportunities.



### Scope of training :

- Research & Development
- Molecular Diagnostic Lab
- Food & Beverage Industry
- Pharmaceutical Industry
- Herbal & Nutraceuticals Industry
- Forensic Labs

### Advantage -

- Industry Oriented Design
- Spirit of the training is to make you employable
- Rigorous Hands on Learning
- Capacity Building
- State of art research facility
- Flexibility of Time & Working Hours

### Note :

1. Kindly Clear All doubts regarding Research Facilities, Training Syllabus , Boarding, Lodging etc.
2. After satisfaction from all informations , initiate your process and get registered.
3. We will send bank details after receiving of your documents.
4. Admission Fee once paid is non-refundable and non transferable under any circumstances.
5. We do not guarantee the issuing VISA after the above payment, which is solely the decision of VISA officer in Indian Consulate in your country.

## TRAINING SYLLABUS

### UNIT I: LAB SAFETY , CHEMICAL HANDLING , CALIBRATION AND RECORD MAINTENANCE

Basics of chemical lab safety and Procedures , Handling of Equipments , Preparation of Chemical & Reagents , chemical hazards and safety , calibration procedures , record maintenance and data handling . Preparation of Buffers, Acid-Base Equilibrium, pH, Buffer System, Charge, pI and pKa, Value, Quantitative determination of pharmaceuticals .

### UNIT II : EXTRACTION AND SAMPLE PREPARATIONS

**Introduction** - What are bio actives ? , source of bio actives , pharmaceutical salts and API etc. Extraction of Bio active from Plant , Microorganism , Fruit or any biological source.

**Extraction Procedures** - Distillation, Soxhlet Extraction , Vacuum Rotary Evaporation , Solid Phase Micro Extraction , Centrifugation, Digestion etc.

**Sample Preparation** - Optimisation of sample preparation methods for sample analysis

### UNIT III - BIO OR CHEMICAL ASSAY FOR QUALITATIVE ANALYSIS

**Qualitative assay of carbohydrate:** Molisch, Fehling, Benedict, Barfoed, mucic acid, Iodine, Seliwanoff, Bial, Osazone Quantitative determination of carbohydrate , Determination of disaccharide, Lactose , Sucrose , Determination of Lipids; triglycerides , Test of Fatty Acids , Determination of Vitamin C , Determination of Vitamin E , Determination of serum phosphate . Assay of Alkaloids, Flavonoids, Glycosides, Free Glucose, tannins, Anthraquinone, Saponins, Phenols etc.

### UNIT IV - BIO BURDEN ASSAY OF PHARMACEUTICALS AND ANTI MICROBIAL ACTIVITY IN BIO-ACTIVES

Microbial Analysis for different bio-pharmaceutical Products , Biochemical Characterisation and data analysis , Microbial Detection through PCR ( 16S Rdna) Antimicrobial assay development for bio actives

### UNIT V - INTRODUCTION TO SPECTROSCOPY AND CHROMATOGRAPHY

Introduction of Spectroscopy - Sample Preparation , Calibration , Standard Curve , Sample run and data analysis . Introduction of Chromatography - How to separate bio active ? , Preparation of Samples , Solvent selection , selection of stationary phase , selection of mobile phase , Column Chromatography , Thin Layer Chromatography

**Introduction of HPLC** - Introduction to chromatography and chromatographic process-four modes of chromatography - reversed-phase, normal phase, ion exchange and size exclusion, Instrument operation- each part of an HPLC instrument in detail – including the solvent delivery system, sample injection, connecting tubing and fittings, commonly used detectors . Introduction of GC - The theory of GC, The GC System, Column types and packings, Mobile phases, the chromatogram, Familiarisation with the instrument, Basic Operation

### UNIT VI - METHOD DEVELOPMENT FOR PHARMACEUTICALS AND BIO-ACTIVES

**Sample solvents,** Column selection, Partition coefficient, Mobile phase selection, Gradients, Effect of flow rate, Temperature effects and Sample preparation. Resolution, Efficiency, Asymmetry, Capacity factor, Selectivity, Signal to noise ratio, Precision and accuracy, System suitability limits and manual calculation of parameters, setting up software to perform system suitability calculations.

## UNIT VII - HPLC AND GC ANALYSIS OF PHARMACEUTICALS AND BIO-ACTIVES

**HPLC Analysis of Tablet** , Syrup and antibiotics , bio active compound - Sample preparation , sample run and data analysis as pharmacopoeia standard. GC Analysis of pharmaceuticals and bio active compound Sample preparation, sample run and data analysis as pharmacopoeia standard.

**Fee Structure** : USD 1,500 /-

**Duration** : 250 Hours ( 20 to 30 Days ) **Timings** : Monday - Saturday ( 8 A.M to 8 P.M )

### HOW TO APPLY –

#### Details of For Registration :

1. Valid Passport
2. Filled **Registration form** with photograph ( Given in Last Page of Brochure )
3. Recommendation letter from Head of the Institution
4. Any Identity card issued by the Institution or Govt.
5. **Send all documents at** : [info@allelelifesciences.com](mailto:info@allelelifesciences.com) for issuance of the invitation letter and pay registration fee ( USD 50 ) through Bank or wire Transfer
6. Send approval letter of your institution and valid VISA at : [info@allelelifesciences.com](mailto:info@allelelifesciences.com)
7. **Pay Training Fee USD 1500** through Bank or Wire Transfer or at the first day of joining the training program in India

## Registration Form

Name of Training Program :

Expected Date of Joining :

Candidate Details :

Name: .....

Father's Name: .....

Address : .....

Contact No : .....

Email: .....

Institution : .....

Qualification : .....

### TERMS & CONDITIONS

1. The admission to training / internship programs will be confirmed after the payment of registration fee along with documents.
2. The registration fee deposited is completely non refundable.
3. The industrial training fee includes the cost of chemical , reagents and study material costs.
4. I will deposit the service charges as decided by the company at the time of joining date of training program.
5. Students have to bear their own boarding/lodging /conveyance charges. We facilitate students in finding proper paying guest arrangements.
6. The trainees will have to bring their own lab coat and wear them all the time in the campus.
7. Trainees are selected on first come first serve basis
8. Trainees will maintain adequate discipline inside the lab premises.
9. Company will not be responsible for any medical, legal issues during the internship tenure and FRRO Registration in India.

### DECLARATION

I \_\_\_\_\_ from \_\_\_\_\_  
hereby declare that all statement/information given in the application form are true to the best of my knowledge and belief . I will strictly abide by the norms/lab etiquette during the training

Signature

Place: \_\_\_\_\_

Date: \_\_\_\_\_

**For office use only**

## Instruments Capabilities

**Our State of art facility** is located in Industrial Area of Noida (NCR) . The lab / research facility is Total : 6000 Sq Feet

<b>Affymatrix &amp; Agilent Microarray Platform</b>	Gene Expression Studies, Biomarker, Sequencing
<b>Real Time PCR ( ABI )</b>	Gene Expression, Sequence Detection
<b>PCR ( ABI, Biorad , Eurofins ) - 5 in numbers</b>	Amplification of nucleic acids
<b>Bioanalyser &amp; Spectrophotometer</b>	Quantification of Nucleic Acids
<b>Gel Documentation System</b>	Visualisation of Nucleic Acids, PCR Products etc.
<b>Electrophoresis &amp; Power Supply ( Biorad ) - 7 Sets</b>	Separation of Nucleic Acids & Other Arrays
<b>DNA Concentrator ( Thermo Speedvac )</b>	Nucleic Acid Extraction
<b>Centrifuge, High Speed Centrifuge - 8 Nos</b>	Sample Preparation
<b>PCR Station and other accessories</b>	

<b>Biorad Profinia Affinity Chromatography</b>	Affinity Chromatography - IMAC, GST, Antibody
<b>Biorad Biologic Low Pressure Chromatography</b>	Size Exclusion, Ion Exchange, Affinity etc.
<b>Preparative HPLC ( Thermo ) , Agilent 1100</b>	Bulk Protein Purification & Analysis
<b>GE Amersham 2-D Electrophoresis System</b>	Protein Characterisation
<b>Immunoblot, SDS-PAGE , Biorad HV Powerpac</b>	Visualisation of Nucleic Acids, PCR Products etc.
<b>Mass Spectrometry , ELISA, Immunoassay</b>	Protein Identification
<b>Cryo Preservation Facility &amp; Common Facility</b>	Sample Storage & Preparation

<b>Agilent HPLC System - PDA, FLD &amp; ECD Detector</b>	Separation and analysis of molecules
<b>Agilent GC with FID &amp; FPD Detectors</b>	Separation and analysis of molecules
<b>Thermo Prep HPLC with Dual Pump &amp; UV-Vis</b>	Bulk Purification & Analysis
<b>Shimadzu GC with FID &amp; NPD Detector</b>	Separation and analysis of molecules
<b>Triple Quad GC-MS System ( Agilent )</b>	Analysis of Semi Volatile & Volatile Compound
<b>LC-MS-MS ( API Sciex )</b>	Analysis of Non Volatile Compound
<b>Varian Carry Spectrophotometer</b>	Analytical Tool for various purpose
<b>Thermo Helios Spectrophotometer</b>	Analytical Tool for various purpose
<b>Vacuum Rotary Evaporator ( Buchi )</b>	Sample Preparation

## Other Analytical Chemistry Equipments :

Refractometer , Flame Photometer ( Toshniwal), Karl Fisher Titrator (Sistrionics), Potentiometer, Polarimeter , Tintometer ,Viscometer , Kjeldahl Distillation Unit , Kjeldahl Digestion Unit , Ion Selective for Fluoride Analysis ( Thermo Orion ) , Nephelometer , Soxhlet Extraction , Rotatory Vaccum Evaporator with chiller , etc.



**Microbiology & Cell Culture Facility :** Vertical Laminar Air Flow ( 4x2x2 ) , Horizontal Laminar Air Flow ( 2x2x2 ) B.O.D. Incubator ( Julabo ) , CO<sub>2</sub> Incubator ( Jauan ) , Orbital Incubator Shaker, UV Chamber , Incubator, Colony Counter , Colorimeter , Muffle Furnace , Hot Air Oven , Desiccators, Binocular Microscopes and , Lypholizer

**Biochemistry / Organic Synthesis Chemistry Lab :** Spectrophotometer ( Thermo Heleus Alpha ) , Analytical Balance ( Sartorius ) , Ph Meter ( Thermo Orion ) , Ion Selective (Thermo Orion) , Conductivity Meter ( Thermo Orion ) , Dissolved Oxygen Meter ( Thermo Orion ) , Turbidity Meter, Autoclaves, Hot Air Oven , Hot Plate , Magnetic Stirrers , Pipette Washer , Shaking Machine , Water Bath , Colorimeter , Flame Photometer , etc.

**Lab Water Purification :** Millipore Milli Q System

**Clinical Biology Lab :** Haematology Analyser , Automatic Immunoassay, Haematology HPLC Biorad Variant II





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