ADVANCE TRAINING IN BIOTECHNOLOGY

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

Duration : 500 Hours (4 - 6 Months) **Timings :** Monday - Saturday (9 A.M to 5 P.M)

Important Note:

- **This training program have the potential to make you employable**
- **As a part of our training program, we may suggest your name to our clients against available vacancy**
- **This training is limited to skill development only and we do not assure you for employment or campus interview**
- **Our prime motive is “Bridging Gap Between Industry & Academia”**

TRAINING SYLLABUS

LAB SAFTEY, PROCEDURES & REGULATIONS

Lab safety and Procedures , Record Maintenance, Handling of Equipments , Sterilisation Techniques , Preparation of Chemical & Reagents Discussion of ethical, legal, and social issues involved in molecular biotechnology. IPR & Biotechnology, Regulatory, Ethics & Guidelines For Genetic Research

MOLECULAR GENETICS

UNIT II :- Extraction , Quantification and Purification of DNA , RNA , mRNA, cDNA

Extraction of Nucleic Acid - Both DNA & RNA Quantitative & Qualitative Analysis of Nucleic Acid - DNA & RNA Electrophoresis , Gel Docking or imaging . Quantitative analysis by spectrometer – For DNA – Measure Absorbance at 260 & 280 nm For RNA – Quantitative Analysis by Orisinol Method , mRNA Purification & cDNA

Preparation Note - You will be suggested to extract best quality nucleic acid for further use in PCR , Real Time PCR , cDNA Preparation , Sequencing , Microarray . All nucleic acid should pass strict quality check .

UNIT III :- Bio Informatics Tools & Techniques :

Primer Designing, Vectors , Selection of Restriction Sites, Virtual PCR, Bioinformatics tools & Techniques , Gel Analysis Software , Vector Selection Software Real Time PCR - Primer designing Tool , Software to run Real Time PCR , Data Analysis Microarray - Microarray Instrument Control and Data Analysis Software

UNIT IV :-Handling of PCR , Real Time PCR & Microarray Platform

PCR - Preparation of reaction mixture and its safety for cross contamination , Optimisation of PCR Reaction – Melting Point , GC Content , Concentrations and Cycles , Sample run , Data Analysis.

Real Time PCR - Reaction setup for real time PCR, selection of quantification – relative or absolute , Melting curve analysis , SYBR Green Assay , Sample run.

Microarray Platform - Microarray Instrument Control , cDNA Preparation , Hybridisation with used chip or array for learning and data analysis .

UNIT V - Expression Studies & Applications

Genetic Expression Studies through PCR – 16S rDNA Analysis, Conventional PCR Method , Nested PCR , PCR Multiplexing etc. mRNA Purification , cDNA Preparation , Real Time PCR assay and its different applications in molecular genetics.

UNIT VI :- Genetic Toxicology & Applications

Bioassay Development : Basics of Chromatography : Column Chromatography , Thin Layer Chromatography , HPLC , Gas Chromatography & Mass Spectrometry

Bio separation Assays by HPLC : Sample preparation , Introduction to separation techniques , SPME Separations , Method Development for mutagenesis assay, Analysis of genetic mutagenesis assay by HPLC

DNA Methylation Studies - Bisulfites modification of DNA , Bisulfites modification in nanogram quantities of DNA , DNA Methylation specific PCR assay .

UNIT VII - Re-Combinant DNA Technology

Isolation of pUC18 plasmid from TOP10-pUC18 E coli cells , Restriction digestion of pUC 18 and λ DNA , Purifying pUC18/Hind III/ EcoR I digest by gel elution , Ligating the lineraized plasmid - pUC18 and the insert –λDNA. , Preparation of competent cells , Transformation of TOP10 cells with the pUC18-λDNA ligated product Colony PCR : To amplify the inserted λDNA digest in pUC18 vector

UNIT VIII – cDNA Library Construction

Extraction of RNA , Purification of mRNA through Oligo-dT Column Chromatography, cDNA Construction , Incorporation of cDNA into a vector , Cloning of cDNAs

PROTEOMICS STUDY

UNIT I- Protein Extraction & Protein Assay

Protein Extraction, Acid Base Equilibrium, pH, Buffer System, Charge, pI and pKa Value, Quantitative determination of biomolecule, mini scale bacterial protein extraction, protein extraction from plant source or other biological source

UNIT II - Protein Estimation & Quantitation

Protein estimation by Lowry's Assay / Biuret Assay / Bradford's Method / BCA Method , Densitometry Analysis of Protein

UNIT III - Protein Purification by FPLC, LPLC & HPLC

Purification of Protein by Affinity Chromatography (IMAC / GST / Sepharose etc) , Ion Exchange Chromatography , Size Exclusion and Hydrophobic Purification, Desalting, Dialysis, Ultrafiltration and centrifugation.

UNIT IV - Protein Characterisation

Protein Characterisation by SDS-PAGE, Native Page, Zymography, Iso Electric Focussing, 2-D Electrophoresis, Western Blot, Staining by Coomassie Blue, Supra Ruby, Deep Purple Protein Fingerprinting, Immunodiffusion Assay

UNIT V - Amino Acid Analysis by Chromatography

Sample preparation, Hydrolysis, Derivatization, Separation of derivatized amino acids, Data Interpretation and calculation

UNIT VI - Protein Bioinformatics

Analysis of 2-D Data, Peptide Mass Fingerprinting Data Analysis (LC-MS MALDI-TOF), Homology Modelling, Molecular Docking

MICOBIOLOGY & METAGENOMICS

UNIT I - Isolation & Enumeration of Microorganism

Microbial Growth- Isolation & Plating Techniques, Single colony isolation, Determination of microbial count, Growth Curve Analysis

UNIT II - Bio-Chemical Characterisation For Preliminary Screening

Basic biochemical testing; IMVIC, Reducing Sugar, Gram Staining, Morphology, Triple Sugar Iron Agar , Starch Hydrolysis, Lipid Hydrolysis, Casein Hydrolysis and many more , **In-silico studies of the positive or negative data for microbial identification**

UNIT III - Meta-Genomics & NGS Data Analysis

Next Generation Sequence Data Analysis (amplicon based), Amplicon Target Population Structure, Meta-genome Shotgun Processing, Q.C of meta-genomics Sequence Data, **Real Time PCR Primer Design**, Q-PCR Data Handling,

UNIT IV - 16S / 23S / 28S rRNA Analysis

DNA Extraction & Quantitation for Metagenomic Analysis, PCR and its Optimisation, Thermostable DNA Polymerases; PCR Melting Curve Analysis , Amplification of Genomic DNA, PCR Multiplexing , Elution of PCR amplicon , Purification of PCR Product for Sequencing

UNIT V - Functional Meta-genomics

Quantitative or Real Time PCR can be coupled with 16S rRNA species specific primers to assess species population

ANALYTICAL & CHROMATOGRAPHY TECHNIQUES

UNIT I - Extraction & Sample Preparations

Extraction Procedures - Different extraction methods for volatile , semi volatile and non volatile samples through digestion , soxhlet extraction , distillation , Vacuum Rotary Evaporator , Solid Phase Micro Extraction etc.

Sample Preparation For Chromatography - Solid Phase Extraction, Solid Phase Micro Extraction, Ulltra Sonication etc.

UNIT II : QUALITY CONTROL AND QUALITY ASSURANCE

Quality Control Procedures - Physical and Chemical Analysis , Initial Method Validation , On Going Method Validation , Laboratory Blanks , Duplicate Determinations , Calibrations , Q.C. Calculations , Q.C. Charts etc. Operation and Calibration of Meters : pHMeter (Hanna , Thermo) , Conductivity Meter , Dissolved Oxygen Meter , Spectrophotometer , Pipettes , Turbidity Meter etc.

UNIT III - LEARNING ON HPLC , GC , SPECTROSCOPY AND OTHER TECHNIQUES

Analysis by HPLC – Basics of HPLC - Sample Preparation , Gradient Making , Parts of HPLC , Troubleshooting and Maintenance , Operating Procedure of HPLC , Run the sample in HPLC . Data Analysis

Analysis by Gas Chromatography – Basics of GC - Sample Preparation , Parts of GC , Troubleshooting and Maintenance , Operating Procedure of GC , Run the sample in GC , Data Analysis

Analysis by Spectroscopy & TLC –

Basics of Spectroscopy - Sample Preparation , Calibration and Calibration Curve , Recovery Percentage etc. Analysis by Thin Layer Chromatography – Sample Preparation , Solvent Selection , Spray Selection , Visualisation and analysis of TLC bands.

UNIT IV – Analysis of Samples

- Analysis of adulterants in Food Samples
- Analysis of adulterants in Beverages & Liquor
- Analysis of Sample of Forensic Importance
- Analysis of Pharmaceutical Drug

WHO MAY JOIN ?

Indian Aspirants From Biotechnology , Microbiology , Biochemistry , Life Science , Chemistry , Pharmacy ,Forensic Science , Food Science etc.

Fee Structure : Rs 40,000 /- (Payable in Three Instalments)

Duration : 500 Hours (4 - 6 Months) **Timings :** Monday - Saturday (9 A.M to 5 P.M)

HOW TO APPLY –

Details of Documents For Registration :

1. Any identity proof along with University / College Identity Card / Aadhar Card etc.
2. Filled **Registration form** with photograph (Given in Last Page of Brochure)
2. **Registration fee** will be Rs 1000 / - paid through cheque or on line payment

How to pay Registration Fee Off Line (Those Who Send Documents by Post) :

1. Cheque or D.D will be in favour of " **Allele Life Sciences Private Limited**"

On Line Payment :

Payment By Internet Banking	Scan UPI Code
Beneficiary Name - Allele Life Sciences Private Limited **Account Number - 61071508494** **IFSC Code - SBIN0031811** **Bank Name - State Bank of India** **Bank Address - SBI, 14/15, Sector-18, Noida, UP - 201301** **Or Pay Through UPI / BHIM App** **UPI Address - allelelifesciences@upi**	

How to send document :

Those who pay through cheque send all documents at following address :

Allele Life Sciences Pvt. Ltd.
C - 59 , Sector - 10 , Noida
Uttar Pradesh - 201301 , IN
M : + 91-9891179928

Those who opt on Line registration send scan copy of all documents and receipt of online payment at : allelelifesciences@gmail.com

Note : We will send confirmation within specified time through e.mail or remind us.

ALLELE LIFE SCIENCES®

Photograph

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.

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

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

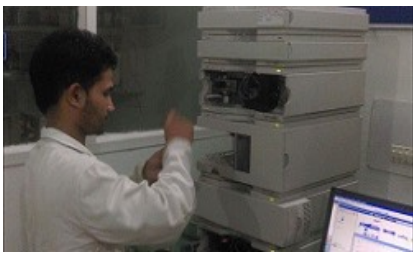
Biorad Profinia Affinity Chromatography	Affinity Chromatography - IMAC, GST, Antibody
Biorad Biologic Low Pressure Chromatography	Size Exclusion, Ion Exchange, Affinity etc.
Preparative HPLC (Thermo) , Agilent 1100	Bulk Protein Purification & Analysis
GE Amersham 2-D Electrophoresis System	Protein Characterisation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

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

Other Analytical Chemistry Equipments :

Refractometer , Flame Photometer (Toshniwal), Karl Fisher Titrator (Sistronics), Potentiometer, Polarimeter , Tintometer ,Viscometer , Kjeldahl Distillation Unit , Kjeldahl Digestion Unit , Ion Selective for Fluoride Analysis (Thermo Orion) , Nephalometer , 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) , CO2 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

Allele Life Sciences ℗ Ltd ,
C - 59 , Sector - 10 , Noida , Uttar Pradesh - 201301
Phone : +91- 0120 - 2540133
Cell Contact - 9891179928 , 8377082003
E.mail: allelelifesciences@gmail.com
Web : www.allelelifesciences.com

Locate at Google Map

https://www.google.com/maps/place/Allele+Life+Sciences+(P)+Ltd/@28.5886515,77.3345613,16.62z/data=!4m5!3m4!1s0x0:0xfab3f2cfeb3ca21b!8m2!3d28.5890149!4d77.3327766?hl=en-US