

Internship in Enzymology & Enzyme Engineering

Life Science is a knowledge-based industry requiring manpower that has the right combination of understanding the technology as well as managerial expertise. We offer comprehensive and in-depth practical hands on training for industrial or research needs.

We are well recognised in the area of life science in which a number participants from diverse scientific fields like biotechnology, biochemistry, human genetics, forensic science, food science & technology, life sciences, microbiology, chemistry, medical sciences, vet sciences, agriculture, Pharmacy etc.



Designing & Implementation of Training Programs

Our Mission at Allele Life Sciences is to offer innovative and exceptional analytical technical process for industry & Research. Our training programs will build and strengthen skills in the specific tasks to be completed for efficient functioning of the industry.

Our Advantage

- Syllabus with latest technologies
- Capacity to implement hands on learning with state of art research facility
- Dedicated Research Advisory
- Periodical Review of the Syllabus
- Validated Protocols & Manuals
- Compulsory One Week Instrumentation Learning

After successful completion of the summer internship, they will get their Certificate along with Evaluation Sheet (E-Copy of the certificate will be send to their concerned institution for validation)

Training Fee Per Module Indian Nationals:

INR 10,000 /- (30 Days , Training Only) & INR 12,000 (45 Days Training + Project Work)

Admission Criteria : First Come - First Serve

Note -

1. Read and analyse the brochure thoroughly and carefully for career development
2. All Units of selected module will be covered

Syllabus For Enzymology & Enzyme Engineering

Enzyme engineering deals with enhancement of enzyme activity of existing enzyme or inducing a new enzyme activity .

The overall goal of the **Training in Enzyme Engineering & Production** is to give the students more fundamental and practical knowledge about general rules for optimisation, modelling and design of enzymatic processes.



Unit I - Lab safety Procedures, Instrumentation & Data Handling

Record Maintenance, Handling of Equipments , Sterilisation Techniques , Preparation of Chemical & Reagents. Discussion of ethical, legal, and social issues involved in enzyme study and research.

Unit II- Enzyme Extraction & Enzyme Assay

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

Unit III - Enzyme Production & Optimisation

Enzyme Database Search, Enzyme source selection, optimisation of extraction procedures or growth requirement procedures, submerged and solid state fermentation (Lab Scale)

Extraction of Enzyme of Your Choice - Food Enzyme, Industrial Enzyme, Pharmaceutical Enzyme etc.

Unit IV - Enzyme Assay, Simulation, Kinetics of Enzyme

Simulation Software handling, In-silico Experiment Designing, Enzyme Kinetics, Inhibition Studies, Effect of pH, Temperature, Substrate Concentration, Enzyme Concentration, Determination of K_{max} , V_{max} , Enzyme Inhibitors & Activators

Unit V - Purification of Enzyme

Purification of Enzyme by Size Exclusion Chromatography, Affinity Chromatography, Ion Exchange Chromatography, Purification of Enzyme by HPLC, Centrifugation, Dialysis and Electrophoresis.

Purify any biological crude for enzyme production through FPLC or Prep HPLC

Unit VI - Enzyme Estimation & Quantitation

Enzyme estimation by Spectrophotometry & Chromatography - Bradford or BCA Assay , HPLC or FPLC Quantitation

Unit VII - Characterisation of Enzyme / Amino Acid

Enzyme Characterisation by Electrophoresis - SDS-PAGE , Native PAGE, Zymography, Densitometric Analysis

HPLC Analysis of Amino Acid : Sample preparation, Hydrolysis, Derivatization, Separation of derivatized amino acids, Data Interpretation and calculation

TECHNIQUES COVERED IN THIS PROGRAM :

Enzyme Extraction & Optimisation, Simulation Studies for enzyme kinetics, Enzyme estimation by spectrophotometer, Enzyme Purification by FPLC,, Affinity , HPLC or Gas Chromatography, Enzyme characterisation by SDS-PAGE and electrophoresis, Fermentation

Information about Project Work with Training Program:

We will provide a project work of your interested area, our assigned projects will be on product development, basic research and novel idea like;

Enzyme Purification Strategies, Enzyme Production from waste, Extraction, purification and characterisation of amino acid from wast hair collected from saloon or bio waste Development of enzyme of food, industrial importance from cheap biological source / Development of microbial inoculate as bio-fertiliser / Development of clone / Method Validation procedures for analysis of micro molecules / Fertiliser from bio-waste / Bio-Fuels

We respect and welcome all feasible ideas suggested by you for better science

Training Fee:

Rs 10,000 / - For 30 Days Training & Rs 12,000 /-For 45 Days (Training + Project Work)

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.

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 (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) , 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



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