

Orbit BiotechTM

Estd. 2006

DSIR Recognized Research & Development Division

Biotech Industrial Training Program Information Brochure 2018 Batch



Orbit Biotech
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Biotech Training Program Layout

Basic Programs

Module	Subject	Program Name	Duration	Fee*
A1	Food Microbiology	Basic concepts in food microbiology	2 Weeks	INR 4,999
A2	Molecular Biology	Basic concepts in molecular biology	2 Weeks	INR 4,999
A3	Fermentation	Basic concepts in fermentation	2 Weeks	INR 4,999
B	Combined	Basic concepts in microbiology & gene cloning	4 Weeks	INR 8,999

Professional Programs

Module	Subject	Program Name	Duration	Fee*
C	Food Microbiology	R&D and manufacturing probiotic food products	4 Weeks	INR 9,999
D	Fermentation	R&D and manufacturing wine and industrial enzymes	4 Weeks	INR 9,999
E	Bioinformatics	In-Silico drug designing and PERL programming	4 Weeks	INR 9,999
F	Molecular Biology	Advanced analysis of gene products and PCR applications	4 Weeks	INR 9,999
G	Food Microbiology & Mol Bio	R&D and manufacturing probiotic food products & basic molecular biology	6 Weeks	INR 12,999
H	Food Microbiology & Mol Bio	R&D and manufacturing probiotic food products & Advanced analysis of gene products and PCR applications	8 Weeks	INR 13,999

*GST additional as applicable

Eligibility

Students The biotech industrial training programs are open to B.Sc./M.Sc./B.Tech./M.Tech. Students of Microbiology, Industrial Microbiology, Bio Chemistry, Biotechnology, B. Pharmacy, Biomedical Technology, Food Science, Environmental Science, Bio-Science, Genetics, Bioinformatics, Plant Science, MBA Biotechnology and Life Sciences.

The students may opt for either basic or professional biotech industrial training programs



Basic Program Details

Module A1	Food Microbiology	2 Weeks
<p>Good Laboratory Practices (GLP) Sampling of probiotic bacteria from food samples and isolation on specialised enriched media. Basic characterisation of bacteria using staining methods and motility analysis Microscopic technique – application of neubaur chamber for cell count (leucocyte cell concentration) Partial Characterization of bacterial isolates using biochemical analysis Microencapsulation of the probiotic cultures for use in functional foods & therapeutics</p>		
Module A2	Molecular Biology	2 Weeks
<p>Good Laboratory Practices (GLP) Isolation of plasmid by alkaline lysis. Isolation of genomic DNA Isolation of RNA from tissue Analysis of nucleic acids by gel electrophoresis Organic extraction of DNA</p>		
Module A3	Fermentation Technology	2 Weeks
<p>Good Laboratory Practices (GLP) Make your own bioreactor Determination of TDP and TDT of a fermentative microorganism Wine production from fruit juice Biochemical estimation of wine produced Estimation of the reducing sugar by DNSA method Estimation of ethanol by potassium dichromate method Estimation of alcohol by specific gravity method Immobilization of fermentation cultures</p>		
Module B	Combined: Basic Concepts in Microbiology & Gene Cloning	4 Weeks
<p>Good Laboratory Practices (GLP) Sampling of bacteria from air, water and soil. Characterization of bacteria by Gram's staining Determination of bacterial motility using hanging drop, cragie's tube and U-tube method. Bacterial measurements using microscopic techniques (Micrometry) Microscopic technique – application of neubaur chamber for cell count (leucocyte cell concentration) Isolation of plasmid by alkaline lysis. Isolation of genomic DNA Isolation of RNA from tissue Organic extraction of DNA</p>		



Professional Program Details

Module C	Food Microbiology	4 Weeks
<p>Good Laboratory Practices (GLP)</p> <p>Testing of water potability by MPN (Most probable number)</p> <p>Sampling of probiotic bacteria from food samples and isolation on specialised enriched media.</p> <p>Basic characterisation of bacteria using staining methods and motility analysis</p> <p>Bacterial measurements using microscopic techniques (Micrometry)</p> <p>Microscopic technique – application of neubaur chamber for cell count (leucocyte cell concentration)</p> <p>Partial Characterization of bacterial isolates using biochemical analysis</p> <p>Thermal Death Point analysis of the probiotic strain</p> <p>Thermal Death Temperature analysis of the probiotic strain</p> <p>Probiotic attribute analysis - Acid tolerance</p> <p>Probiotic attribute analysis - Bile tolerance</p> <p>Probiotic attribute analysis - Hydrophobicity index</p> <p>Probiotic attribute analysis - Antimicrobial activity</p> <p>Microencapsulation of the probiotic cultures for use in functional foods & therapeutics</p>		
Module D	Fermentation Technology	4 Weeks
<p>Good Laboratory Practices (GLP)</p> <p>Make your own bioreactor</p> <p>Determination of TDP and TDT of a fermentative microorganism</p> <p>Wine production from fruit juice</p> <p>Biochemical estimation of wine produced</p> <p>Estimation of the reducing sugar by DNSA method</p> <p>Estimation of ethanol by potassium dichromate method</p> <p>Estimation of alcohol by specific gravity method</p> <p>Immobilization of fermentation cultures</p> <p>Submerged culture fermentation for production of amylase and downstream processing</p> <p>Antimicrobial activity of fermentation products</p> <p>Isolation and screening of protease producers</p> <p>Isolation and screening of cellulase producers</p> <p>Isolation and screening of lipase producers</p> <p>Production of enzyme (lipase) by submerged culture fermentation</p> <p>Determination of KLA value of sulphite oxidation method</p>		
Module E	Bioinformatics	4 Weeks
<p>Introduction to Drug Development Process</p> <p>Parameters in Drug Design (Chemical & Physicochemical)</p> <p>Scientific approaches to Target Identification</p> <p>In Silico Target Molecule properties evaluation</p> <p>Homology Modelling Pocket / Active site identification</p> <p>Lead optimization</p> <p>Lead introduction in identified pocket</p> <p>In Silico generation of Ligand molecules IC 50 & Binding energy calculation (Docking)</p> <p>In Silico validation of Drug molecule Drug molecule : from Silicon chip to the market</p> <p>PERL Basics: Variables (Scalar, array & hashes), control structures and conditional statements</p> <p>PERL intermediate: Regular expression, subroutines, user defined functions & file handling</p> <p>PERL Advanced: CGI Programming, Database development with PERL</p> <p>Database development with MySQL</p> <p>Web Programming with HTML</p> <p>Introduction to biological databases</p> <p>Sequence alignment</p>		

Professional Program Details

Module F	Molecular Biology	4 Weeks
<p>Good Laboratory Practices (GLP) Isolation of plasmid by alkaline lysis. Isolation of genomic DNA Isolation of RNA from tissue Organic extraction of DNA Digestion of extracted plasmid Ligation of digested product Analysis of nucleic acids by gel electrophoresis Preparation of competent cells and transformation into E.coli Isolation of plasmid DNA by boiling lysis method and analysis by gel electrophoresis Restriction fragment length polymorphism Hands on handling thermocycler and detection of specific gene through PCR (Polymerase Chain Reaction) Identification of specific genus of bacteria through PCR (Polymerase Chain Reaction) technique.</p>		
Module G	Food Microbiology & Molecular Biology	6 Weeks
<p>Good Laboratory Practices (GLP) Testing of water potability by MPN (Most probable number) Sampling of probiotic bacteria from food samples and isolation on specialised enriched media. Basic characterisation of bacteria using staining methods and motility analysis Bacterial measurements using microscopic techniques (Micrometry) Microscopic technique – application of neubaur chamber for cell count (leucocyte cell concentration) Partial Characterization of bacterial isolates using biochemical analysis Thermal Death Point analysis of the probiotic strain Thermal Death Temperature analysis of the probiotic strain Probiotic attribute analysis - Acid tolerance Probiotic attribute analysis - Bile tolerance Probiotic attribute analysis - Hydrophobicity index Probiotic attribute analysis - Antimicrobial activity Microencapsulation of the probiotic cultures for use in functional foods & therapeutics Isolation of plasmid by alkaline lysis. Isolation of genomic DNA Isolation of RNA from tissue Analysis of nucleic acids by gel electrophoresis Organic extraction of DNA</p>		



Professional Program Details

Module H Food Microbiology & Molecular Biology

8 Weeks

Good Laboratory Practices (GLP)

Testing of water potability by MPN (Most probable number)

Sampling of probiotic bacteria from food samples and isolation on specialised enriched media.

Basic characterisation of bacteria using staining methods and motility analysis

Bacterial measurements using microscopic techniques (Micrometry)

Microscopic technique – application of neubaur chamber for cell count (leucocyte cell concentration)

Partial Characterization of bacterial isolates using biochemical analysis

Thermal Death Point analysis of the probiotic strain

Thermal Death Temperature analysis of the probiotic strain

Probiotic attribute analysis - Acid tolerance

Probiotic attribute analysis - Bile tolerance

Probiotic attribute analysis - Hydrophobicity index

Probiotic attribute analysis - Antimicrobial activity

Microencapsulation of the probiotic cultures for use in functional foods & therapeutics

Isolation of plasmid by alkaline lysis.

Isolation of genomic DNA

Isolation of RNA from tissue

Organic extraction of DNA

Digestion of extracted plasmid

Ligation of digested product

Analysis of nucleic acids by gel electrophoresis

Preparation of competent cells and transformation into E.coli

Isolation of plasmid DNA by boiling lysis method and analysis by gel electrophoresis

Restriction fragment length polymorphism

Hands on handling thermocycler and detection of specific gene through PCR (Polymerase Chain Reaction)

Identification of specific genus of bacteria through PCR (Polymerase Chain Reaction) technique



Registration Process

Step 1 Fill the registration form

The students desirous of taking internship should first fill the **registration form** for biotech training program. The registration forms are available at our office or can be downloaded from our website www.orbitbiotech.com. The students are advised to fill in the registration form completely. Incomplete registration forms are liable to be rejected.

Step 2 Payment of registration fee of INR 4000

The registration fee of INR 4000 per student is applicable. The registration fee is adjusted from the total fee of the training fee program. The balance fee is to be paid at the time of joining the program.

The registration fee can be through 4 different options.

Option 1: Office Visit

The prospective students can visit our office and pay the registration fee.

Option 2: Online Registration

The prospective students can visit our website www.orbitbiotech.com and using the tab for ONLINE REGISTRATION pay the registration fee online using credit card/ debit card or net banking. After making the payment online, kindly mention the transaction no. on the registration form

Option 3: Bank registration

The registration fee can be paid directly by visiting any of the nearest branch of State Bank of India in your city. Visit any branch of State Bank of India and fill the bank deposit form using the following details in the following account.

State Bank of India

Account Name: Zodiac Brand Space Pvt. Ltd.

Account No. 65244510590

IFSC: SBIN0050655

***Kindly deposit INR 4000 + INR 75(Bank Charges) = INR 4075 in the bank**

After depositing the fee, kindly retain the original bank deposit receipt and send the photocopy of the bank receipt along with the registration form.

Option 4: Registration through demand draft

The applicants can send a demand draft of INR 4000 favoring "Zodiac Brand Space Pvt. Ltd." & send the form to the address mention below.

Step 3 Submission of registration fom

After the payment of the registration fee the applicants need to send the completely filled registration form along with the photocopy of the college ID card and photocopy of bank deposit slip OR demand draft to the following address

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**For any support related to industrial training call or send whatsapp to
+91. 8591871105**



*This is our 12th Year
of creating
skilled Biotechnologists!!*

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