

# Orbit Biotech<sup>TM</sup>

Estd. 2006

DSIR Recognized Research & Development Division

## 2018 Batch

# Biotech Industrial Training Program & Research Project Program

**Information Brochure**

Orbit Biotech  
Plot No. C-149, Industrial Area, Phase - 7  
(Sector 73) Mohali - 160055, Punjab, INDIA  
Helpline No. +91. 8591871105  
TeleFAX: +91.172.4061105  
internship@orbitbiotech.com  
www.orbitbiotech.com

## Fee Structure & Layout

### Basic Programs

Module	Subject	Program Name	Duration	Fee
A1	Food Microbiology	Basic concepts in food microbiology	2 Weeks	INR 5,499
A2	Molecular Biology	Basic concepts in molecular biology	2 Weeks	INR 5,499
A3	Fermentation	Basic concepts in fermentation	2 Weeks	INR 5,499
B	Combined	Basic concepts in microbiology & gene cloning	4 Weeks	INR 9,999

### Professional Programs

Module	Subject	Program Name	Duration	Fee
C	Food Microbiology	R&D and manufacturing probiotic food products	4 Weeks	INR 11,799
D	Fermentation	R&D and manufacturing wine and industrial enzymes	4 Weeks	INR 11,799
E	Plant Tissue Culture	R&D and commercial development of plant varieties	4 Weeks	INR 11,799
F	Molecular Biology	Advanced analysis of gene products and PCR applications	4 Weeks	INR 11,799
G	Food Microbiology & Mol Bio	R&D and manufacturing probiotic food products & basic molecular biology	6 Weeks	INR 13,999
H	Food Microbiology & Mol Bio	R&D and manufacturing probiotic food products & Advanced analysis of gene products and PCR applications	8 Weeks	INR 14,999

### Research Project - Minimum 3 Months

Module	Subject	Registration Fee		Monthly Project Fee
P	Probiotics Plant Tissue Culture	INR 5,000	PLUS	INR 4,999

**\*No additional Taxes or Charges**



#### 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/ research project

## 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 &amp; 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)            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 &amp; therapeutics</p>		

Module D	Fermentation Technology	4 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            Submerged culture fermentation for production of amylase and downstream processing            Antimicrobial activity of fermentation products            Isolation and screening of protease producers            Isolation and screening of cellulase producers            Isolation and screening of lipase producers            Production of enzyme (lipase) by submerged culture fermentation            Determination of KLA value of sulphite oxidation method</p>		

Module E	Plant Tissue Culture	4 Weeks
<p>Good Laboratory Practices (GLP)            Aseptic culture techniques for establishment and maintenance of cultures            Preparation of stocks of growth regulators            Preparation of tissue culture media            Germination of seeds in vitro            Callus culture from leaves/ bulb sections            Shoot tip Culture or Direct organogenesis            Cell suspension culture            Anther Culture            Embryo Culture            Isolation of protoplasts            Isolation of chloroplast from and assay of chlorophyll content            Gibberellic acid and starch hydrolysis in germinating barley seeds            Synthetic seed preparation            The water potential of potato tubers</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 &amp; 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](http://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 5000

The registration fee of INR 5000 per student is applicable. (Non-refundable & Non-transferable)  
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 in cash.

#### Option 2: Online Registration

The prospective students can visit our website [www.orbitbiotech.com](http://www.orbitbiotech.com) and using the button for ONLINE REGISTRATION pay the registration fee online using credit card/ debit card or net banking. After making the payment online, kindly mention the order ID no. on the registration form and **send the filled in registration form through WhatsApp on +91. 8591871105**. Kindly bring the original registration form at the time of joining ONLY.

#### Option 3: Direct Bank Deposit/NEFT Transfer

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 5000 + INR 85(Bank Charges) = INR 4085 in the bank**

After depositing the fee, kindly retain the original bank deposit receipt **and send the copy of the bank receipt along with the filled in registration form to +91.8591871105 using WhatsApp** and bring original registration form at the time of joining.

#### Option 4: Registration through demand draft

The applicants can send a demand draft of INR 5000 favoring "Zodiac Brand Space Pvt. Ltd." & 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

#### **Orbit Biotech**

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**For any support related to industrial training/project  
call or send whatsapp to  
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*This is our 12th Year  
of creating  
skilled Biotechnologists!!*

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**A division of Zodiac Brand Space Pvt. Ltd.**

