

Helix BioGenesis Pvt. Ltd.

# INFORMATION BROCHURE

For technical training, skill up-gradation, building of new skills and innovative thinking in Biotechnology

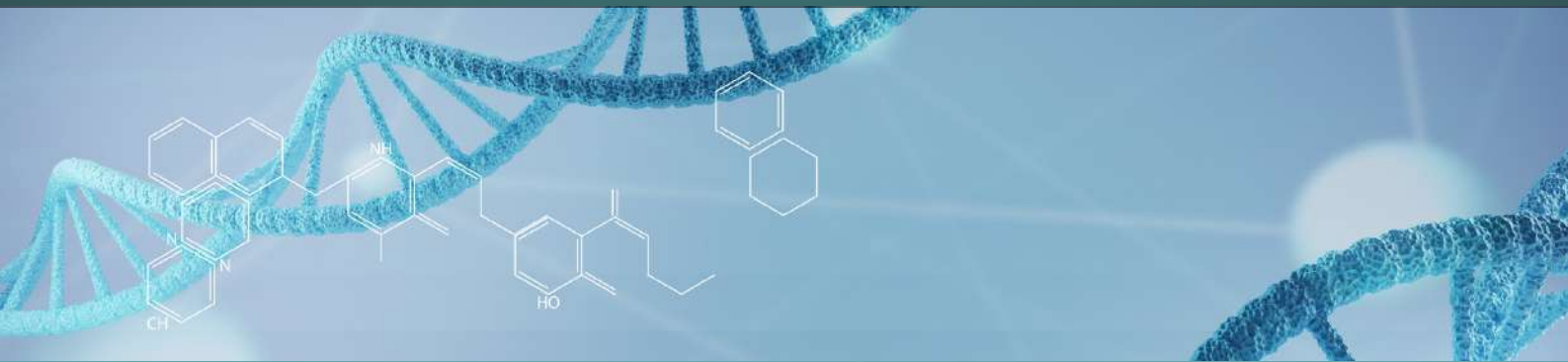


[www.helixbiogenesis.com](http://www.helixbiogenesis.com) +91-9717117289, +91-8766229702

# Introduction:

Helix BioGenesis (A unit of Helix BioGenesis Pvt. Ltd.), a fast growing ISO 9001:2008 certified company engaged in the field of Biotechnology/ Medical Diagnostics Research and Live Project based Training situated in Noida. Currently, Helix BioGenesis undertakes research in the frontier areas of Molecular biology, Microbiology, Immunology, Medical biotech and Diagnostic services. We have developed 15 days to 6 months Hands-on Industrial Training/ Project/ Dissertation Work and Summer & Winter Training Programs for the students of any field of Biotechnology/Life Sciences and Medical Biotechnology. This is a rigorous and comprehensive Industrial Training designed and developed for those with basic knowledge of Biotechnology, and looking for a career in Biotech and Pharmaceuticals sector as well as in research organizations in India and abroad.

This training will prepare the candidates for a brighter future in biotechnology by providing knowledge & experience in advanced technologies currently being employed in research. It will also help the candidates in designing of experiments, formulating project protocols, together with hands-on-training in advanced techniques in molecular biology & r-DNA technology, biotechnology, and drug discovery. Actual data from the research laboratories will be discussed, and a comprehensive protocol booklet will be provided to each trainee for future reference.



## Industrial Training/ Project Work/ Dissertation Program(1-6 Months)

Helix BioGenesis has developed 15 days to 6 months rigorous Hands-on Industrial Training/ Project Training/ Dissertation & Summer/ Winter Training Program for the students of any stream of Biotechnology/ life sciences. Certificate will be provided to the candidates on successful completion of the training/ project work. The candidates who are pursuing or have completed their B.Tech, B. Sc., M.Tech, M.Sc., M. Phil and Ph.D in Biology/ Biotech/ Medical Biotech or any stream of Life Sciences from a recognized University are eligible for industrial training with us.

Helix BioGenesis also undertakes live research/ Project work at in the frontier areas of Biotechnology. Students can undertake any of the field, mentioned below, as per their requirement/ interest. Duration of the program can be from 1-6 months. We conduct live industry oriented research work in the following areas

- Animal cell culture
- Metabolomics
- Medical biotechnology
- Diagnostic
- Contract research
- Molecular Biology
- Industrial Microbiology
- Fermentation Technology
- Food Technology
- Probiotics

Objective of the project or dissertation work is to inculcate the good laboratory practices, real hands- on expertise and industrial exposure among students. This work includes a thorough understanding of research topic, meticulous experimental designing, and developing keen observation skills along with analytical power to understand and interpret the results/ findings of their hard work. We also support students in writing project report and help them in making presentation so that their work can be recognized in tune with their hard work. A list of various ongoing or tentative projects for HB-10 program can be obtained from our office.



## Basic Microbiology (15 Days/2Weeks): Program Code-HB-01-A

1. Introduction to Good Laboratory Practices and General Safety Instructions
2. Instrumentation: Working with Autoclave, Laminar Air Flow System, Incubator/ Shaker, Hot Air Oven,
3. Microscope and Other Instruments
4. Various Media (Solid/Liquid) preparation and Its Sterilization
5. Isolation and Screening of Microorganisms
6. Serial Dilution Method
7. Pure Culture Techniques (Streaking, Pouring & Plating, etc.)
8. Culturing & Sub Culturing Methods of Microbes
9. Isolation and Culturing of microbes from Soil Samples
10. Isolation and Culturing of microbes from Water Samples
11. Screening of Microbes(Staining Techniques): Gram Staining, Endospore Staining
12. IMViC Test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
13. Bacterial Growth Curve Analysis/ Growth Kinetics
14. Antibiotics Sensitivity Test
15. Culturing Techniques for E. coli. or Industrially Important Microorganisms
16. Isolation and identification of enzyme producing microbe
17. Isolation of antibiotic producing microbe by crowded plate method
18. Isolation of antibiotic resistance (MDR) microbe from soil sample.

Fee  
4,500/-  
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# Advance Industrial Microbiology (30 Days/4Weeks); Program Code-HB-01

1. Introduction to Good Laboratory Practices and General Safety Instructions
2. Instrumentation: Working with Autoclave, Laminar Air Flow System, Incubator/ Shaker, Hot Air Oven, Microscope and Other Instruments
3. Various Media (Solid/Liquid) preparation and Its Sterilization
4. Isolation and Screening of Microorganisms
5. Serial Dilution Method
6. Pure Culture Techniques (Streaking, Pouring & Plating, etc.)
7. Culturing & Sub Culturing Methods of Microbes
8. Isolation and Culturing of microbes from Soil Samples
9. Isolation and Culturing of microbes from Water Samples
10. Isolation and Culturing of microbes from Air Samples
11. To study the Components, use and care of Compound Microscope
12. Screening of Microbes(Staining Techniques): Gram Staining, Endospore Staining, Capsular Staining, Flagellar Staining
13. IMViC Test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
14. Enzymatic test: Catalase activity Test, Oxidase activity Test
15. Bacterial Growth Curve Analysis/Growth Kinetics
16. Optimization of Growth Condition For Industrially Important Microorganisms
17. Antibiotics Sensitivity Test
18. Culturing Techniques for E. coli. or Industrially Important Microorganisms
19. Fungal Staining & Actinomycetes staining
20. Isolation and identification of enzyme producing microbe
21. Isolation of antibiotic producing microbe by crowed plate method
22. Isolation of antibiotic resistance (MDR) microbe from soil sample
23. To study the Chemical Control of Microbes
24. To study the Effect of Temperature on Growth of Bacteria
25. To study the Effect of pH on Growth of Bacteria
26. Isolation of Lipolytic Microbes from Butter
27. Effect of PH, Temperature, Pressure, Inhibitors on Growth of Microbes
28. Effect of physical & chemical mutagen of growth of microbes



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8,500/-  
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# Basic Molecular Biology (15 Days/2Weeks); Program Code- HB-02-A

1. Good Laboratory Practices and General Safety Instructions
2. Basics of Calculations; Buffers and Reagent Preparation
3. Sterilization Techniques: Dry, Wet and Chemical Sterilization
4. Preparation of Luria-Bertani Media and it's Sterilization
5. Culturing of Microbes(E. coli DH5 $\alpha$ Strain for Plasmid/ Genomic DNA Isolation)
6. Isolation and Purification of Prokaryotic (Bacterial) Genomic DNA
7. Agarose Gel Electrophoresis of Genomic DNA
8. Isolation & Purification of Genomic DNA from Plants
9. Agarose Gel Electrophoresis of Isolated Plant Genomic DNA
10. Isolation & Purification of Plasmid DNA
11. Determination of Purity and Quantification of Plasmid DNA
12. Agarose Gel Electrophoresis of Isolated Plasmid DNA
13. Quantitative analysis of Nucleic Acids using DPA reagent
14. Qualitative (A260/280) & Quantitative analysis of Nucleic Acids using Nanodrop/Qubit 2.0
15. Primer Designing and Optimization of PCR
16. Polymerase Chain Reaction(PCR)
17. Gel Electrophoresis of PCR Products with Molecular Markers

Fee  
4,500/-  
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# Advance Molecular Biology & r-DNA Technology (30 Days); Program code-HB-02

1. Working in Molecular Biology Laboratory
2. Good Laboratory Practices and General Safety Instructions
3. Basics of Calculations; Buffers and Reagent Preparation
4. Sterilization Techniques: Dry, Wet and Chemical Sterilization
5. Isolation and Purification of Prokaryotic (Bacterial) Genomic DNA
6. Agarose Gel Electrophoresis of Genomic DNA
7. Preparation of Luria Bertani Media and it's Sterilization
8. Culturing of Microbes(E. coli DH5 $\alpha$  Strain for Plasmid DNA Isolation)
9. Isolation & Purification of Plasmid DNA from E. coli DH5 $\alpha$  Strain
10. Agarose Gel Electrophoresis of Isolated Plasmid DNA
11. Determination of Purity and Quantification of Isolated Plasmid DNA
12. Isolation & Purification of Genomic DNA from Plants
13. Agarose Gel Electrophoresis of Isolated Plant Genomic DNA
14. RNA Isolation from Plant Sources
15. Denaturing Agarose Gel Electrophoresis of Isolated RNA
16. Northern Blotting Technique (RNA from Gel to membrane)
17. Purification & Quantification of RNA
18. Quantitative analysis of Nucleic Acids using DPA reagent
19. Qualitative (A<sub>260/280</sub>) & Quantitative analysis of Nucleic Acids using Nanodrop/Qubit 2.0
  1. Primer Designing and Optimization of PCR
  2. Polymerase Chain Reaction(PCR)
  3. Gel Electrophoresis of PCR Products with Molecular Markers
  4. Restriction Digestion of DNA
  5. Electrophoresis of Digested DNA Product
  6. Southern Blotting Technique(Transfer of DNA to Membrane)
  7. Competent Cell Preparation of E. coli
  8. cDNA Preparation and Cloning
  9. Cloning of cDNA into Digested Plasmid (cDNA Ligation)
  10. Transformation of Ligated Plasmid into Competent Cells
  11. Screening of the Transformed Cells (Blue-White selection)
  12. Colony PCR for Screening of Transformed Cells



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## Food Biotechnology (30 Days/4Weeks): Program Code- HB-03

1. Introduction to the basic Microbiology Laboratory practice and Equipments
2. Cleaning & Sterilization of glasswares and Lab Safety& Ethics
3. Preparation of chemical& Reagents used in food tech laboratory
4. Sterilization techniques for lab equipments and culture media
5. Preparation of Slant, Stab & Plates using nutrient agar media
6. Pure culture preparation
7. Isolation of microbes from various food items
8. Identification of bacteria using IMViC test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
9. Enzymatic Assay: Catalase test, Oxidase test
10. Starch hydrolysis test & Sugar fermentation test
11. Degradation of amino acid for hydrogen sulphide production
12. Enumeration of yeast and molds in food
13. Enumeration and isolation of E. Coli from food sample
14. Enumeration and isolation of Salmonella, Shigella, Vibrio from food sample
15. Enumeration of coliform, fecal coliforms from food sample / water sample
16. Assessing the quality of Jam, Jelly & Fruit juice
17. Quality control of Milk and Milk products & analysis for fat and SNF
18. To acquaint with the problems of adulteration in Ghee and their detection
19. Determination of pH and acidity of food sample
20. Studies on food preservation by Temperature, Radiation and Bacteriocins
21. Total carbohydrate estimation in food sample
22. To estimate the reducing and non-reducing Sugar
23. To estimate the moisture content of food items
24. Determination of protein in food sample
25. Estimation of Starch in food sample
26. Determination of food adulteration in various commercial food items
27. BOD analysis of water
28. Analysis of Spices
29. Antioxidant analysis of Green tea products
30. Extraction of Genomic DNA from Microbes
31. Agarose gel electrophoresis of isolated DNA.



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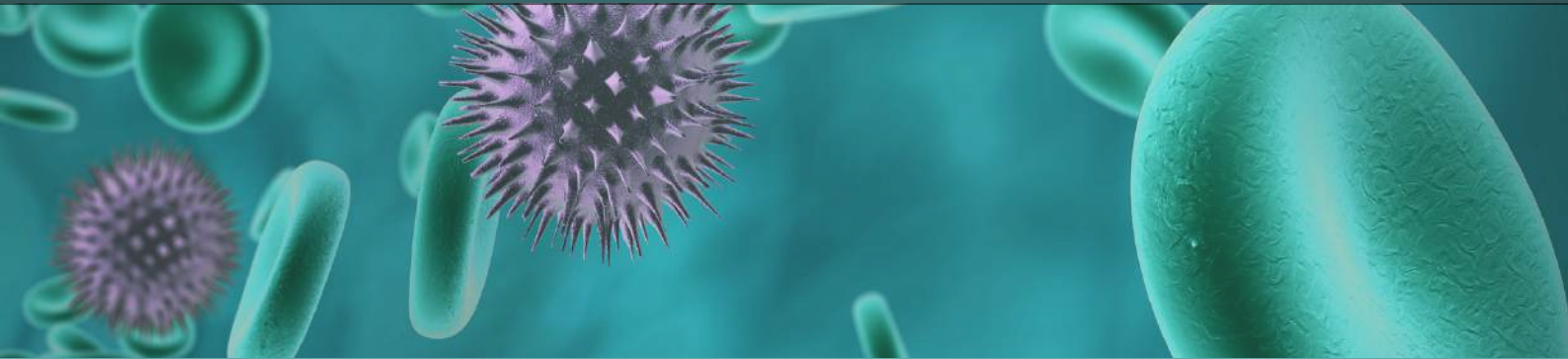


# Immunology/ Medical Diagnostics (15 Days/2 Weeks); Program Code- HB-o4-A

1. To Perform Blood Grouping Test
2. To detect the Presence of Salmonella sp. by Qualitative Slide Agglutination Test (Widal Test)
3. Isolation of Serum and Plasma from Blood
4. To Perform VDRL Test
5. DOT ELISA Test
6. Blood Sugar Test
7. To Perform Liver Function Tests(LFT)
8. To Calculate Total Serum Protein in Blood Sample
9. To Calculate Total Calcium in Blood
10. To Calculate Total Cholesterol in Serum
11. To Perform HDL Cholesterol Estimation Test
12. To Perform LDL Cholesterol Estimation Test
13. Isolation and Purification of Immunoglobins (IgG).
14. To Perform Radial Immunodiffusion Test
15. To Study the Reaction Pattern of an Antigen with a set of Antibodies by Ouchterlony Double Diffusion Method
16. Determination of the Rheumatoid Arthritis (RA)

Fee  
5,000/-  
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# Medical Microbiology (21 Days/3 Weeks): Program Code- HB-04-B

1. Introduction to Good Laboratory Practices and General Safety Instructions
2. Instrumentation: Working with Autoclave, Laminar Air Flow System, Incubator/ Shaker, Hot Air Oven, Microscope and Other Instruments
3. Various Media (Solid/Liquid) preparation and Its Sterilization
4. Isolation and Screening of Microorganisms
5. Isolation of Microbes from Clinical Samples through Serial Dilution Method
6. Identification of Bacteria of Clinical Importance by various Staining Method
7. Urine Sample Analysis & Antibiotic Sensitivity Test
8. IMViC test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
9. Enzymatic Assay: Catalase activity Test, Oxidase activity Test
10. To Study Blood Microscopy
11. To Determine the Hemoglobin Content in Blood Sample
12. Laboratory Diagnosis of Blood Parasitic Infection by Smear Method
13. Isolation of Serum and Plasma from Blood
14. To Perform Kidney Function Test (KFT)
15. DNA Isolation from Animal Tissue/Blood Sample & Agarose Gel Electrophoresis of Genomic DNA
16. Polymerase Chain Reaction(PCR)
17. Gel Electrophoresis of PCR Products with Molecular Markers

Fee  
5,000/-  
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# Forensic Science (30 Days/4Weeks); Program Code- HB-04-C

1. Cleaning & Sterilization of glasswares and Lab Safety& Ethics
2. Preparation of chemical& Reagents used in forensic science laboratory
3. Safety Information, Maintenance of Sterility & Do's & Don'ts in the Forensic Lab
4. Exposure to Facility equipment
5. Estimation alcohol in Blood.
6. To prepare slides of scale patterns of human hair.
7. To examine human hair for cortex and medulla.
8. To examine Barr bodies from hair root.
9. Examination of hair of different domestic animals as cat, dog, cow, horse and goat.
10. To determine species of origin from blood.
11. To determine blood group from fresh blood and blood stains.
12. To identify blood stains.
13. To identify semen stains.
14. To identify saliva stains.
15. To determine titre of antisera.
16. To perform precipitin test for species of origin determination.
17. To perform Immunodiffusion test for species of origin.
18. Comparative analysis of Diatoms
19. Organic extraction of DNA from blood.
20. Extraction of DNA from other body fluids.
21. To prepare gel plates for electrophoresis.
22. Quantification of DNA using Nano drop method
23. PCR for DNA samples
24. Accessing of DNA databases.
25. DNA Fingerprinting

Fee  
8,500/-  
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# Microbiology, Molecular Biology & Biochemistry (30 Days/4 Weeks); Program Code- HB-05

1. Working in Molecular Biology Laboratory
2. Good Laboratory Practices and General Safety Instructions
3. Basics of Calculations; Buffers and Reagent Preparation
4. Media preparation and sterilization,
5. Serial Dilution Method,
6. Culturing & Sub Culturing Methods of Microbes,
7. Isolation and Culturing of microbes from Soil & Air,
8. Screening of Microbes (Staining Techniques)
9. IMViC Test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
10. Growth Kinetics of Microbes,
11. Antibiotics Sensitivity Test,
12. Isolation & Purification of Plasmid DNA,
13. Agarose Gel Electrophoresis of Plasmid DNA,
14. Isolation and Purification of Prokaryotic (Bacterial) Genomic DNA,
15. Agarose Gel Electrophoresis of Genomic DNA,
16. Isolation & Purification of Genomic DNA from Plants,
17. Agarose Gel Electrophoresis of Plant Genomic DNA with molecular markers,
18. Restriction Digestion,
19. Quantitative analysis of Nucleic Acids using DPA reagent
20. Qualitative (A260/280) & Quantitative analysis of Nucleic Acids using Nanodrop/Qubit 2.0
21. Southern Blotting Techniques (Transfer of DNA from Gel to membrane),
22. Primer Designing and Optimization of PCR
23. Polymerase Chain Reaction(PCR),
24. Gel Electrophoresis of PCR Products with Molecular Markers
25. Protein Isolation,
26. Estimation of Protein by Bradford Method,
27. Estimation of Protein by Lowry's Method,
28. Protein Gel Electrophoresis- SDS-PAGE
29. Enzyme Assay – Amylase Assay,
30. ELISA test.

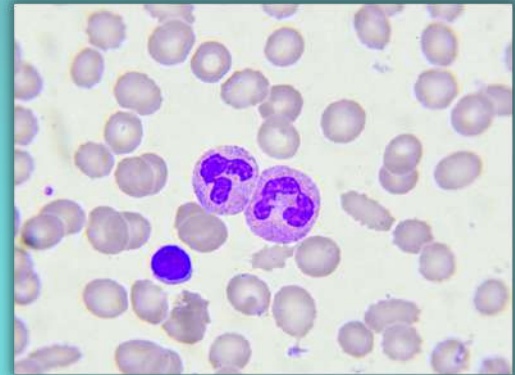


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9,000/-  
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# Medical Biotechnology (Medical Microbiology, Diagnostics & Immunology) (30Days): Program Code HB-06

1. Working with Instrumentation used in Medical Biotechnology laboratory
2. Various Media (Solid/Liquid) preparation and It's Sterilization
3. Isolation of Microbes from Clinical Samples through Serial Dilution Method
4. Identification of Bacteria of Clinical Importance by various Staining Method
5. Identification of Bacteria of Clinical Importance by various Biochemical Tests
6. IMViC test: Indole test, Methyl red test, Voges-Proskauer test, Citrate utilization test
7. Enzymatic assay: Catalase activity Test, Oxidase activity Test
8. Urine Sample Analysis & Antibiotic Sensitivity Test
9. To Study Blood Microscopy
10. To Perform Blood Grouping Test
11. To Determine the Hemoglobin Content in Blood Sample
12. Detection of Salmonella sp. by Qualitative Slide Agglutination Test (Widal Test)
13. To Perform VDRL Test
14. ELISA Test
15. Determination of the Rheumatoid Arthritis(RA)
16. Isolation of Serum and Plasma from Blood
17. Blood Sugar Test from Serum/Plasma
18. To Perform Liver Function Tests (LFT)
19. To Perform Kidney Function Test (KFT)
20. To Calculate Total Serum Protein in Blood Sample
21. To Calculate Total Calcium in Blood
22. To Calculate Total Cholesterol in Serum
23. To Perform HDL Cholesterol Estimation Test
24. To Perform LDL Cholesterol Estimation Test
25. Isolation and Purification of Immunoglobins (IgG)
26. To Perform Radial Immunodiffusion Test
27. Ouchterlony Double Diffusion Assay
28. DNA Isolation from Animal Tissue/Blood Sample
29. Agarose Gel Electrophoresis of Genomic DNA
30. Polymerase Chain Reaction(PCR)
31. Gel Electrophoresis of PCR Products with Molecular Markers



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9,000/-  
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# Advance Molecular Biology and Cell Culture (30 Days/4 Weeks); Program code-HB-ACC

1. Safety Information & Maintenance of Sterility
2. Do's & Don'ts in the Tissue Culture Lab
3. Exposure to Facility equipment
4. Preparation of medium and required Solutions
5. Cell Lines revival (Recovery)
6. Animal Cell Culture and maintenance of human cancer cell lines
7. Sub culturing (passaging) & freezing
8. Freezing & thawing of human cancer cell lines
9. RNA extraction from human cancer cell lines
10. cDNA synthesis
11. Reverse Transcription PCR (RT-PCR)
12. Induction of proliferation and differentiation in human cancer cell lines
13. Protein extraction from human cancer cell lines
14. SDS-PAGE and coomassie blue staining
15. MTT Assay for proliferation/cytotoxicity
16. Restriction digestion
17. Ligation
18. DNA gel electrophoresis
19. DNA gel extraction
20. Preparation of competent cells
21. Transformation and plating on LBA plates
22. Plasmid DNA isolation
23. Genomic DNA isolation
24. Polymerase Chain Reaction (PCR)
25. Protein & DNA sequence analysis
26. Primer Designing & Promoter analysis

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# Other Special Programs

## ● 3 Months

This is our 'one of the best' program where students have the opportunity to select any programs of their choice spanning for 3 months duration.

## ● 45 days

This program is designed for the specific requirement of students. They have an option to choose combination of any one of 30 days and a 15 days program.

## ● 2 Months

In this program student have an option to choose combination of any two of 30 days program or one 30 days along with two 15 days programs.

## ● Project/ Dissertation

Students can pursue their projects in major branches of biotechnology for 15 days to 6 months, depending on the university's requirements.

## ● Career Oriented Program

This is industry oriented program where students are trained in core/ specialized branches of biotech as per the requirement of Industry and assisted in their placement.

## Registration details:

### Joining date for training/projects:

Students can join the industrial training program on 1st and 15th of every month. Individual projects, however, can be started on any week Monday (except govt. holidays)

### Application Procedure:

- Fill the application form directly using our Google Form Link given below: <https://forms.gle/JTxLXyi8xcZX4V1e8>
- For online registration fee payment:

Using Paytm or Paytm UPI to Mobile No. 9717117289

For NEFT/IMPS:

Payee Name: Helix Biogenesis Pvt Ltd; Bank Name: ICICI Bank  
Account Number: 003105029384; Type: Current Account;  
IFSC Code: ICIC0000031; Branch Address: Sector-18, Noida.

### Eligibility:

- UG/PG students, industry and faculty members in the field of Biotechnology, Bioinformatics, Life Sciences, Medical Sciences, Pharmaceutical Sciences, Chemical Sciences and related subject areas.

### Accommodation Info:

- Accommodation should be booked in nearby PG hostels/guesthouses and hotels directly. Please click the following link to download accommodation information. If you need help then please call on +91- 9717117289 or email to [helix.noida@gmail.com](mailto:helix.noida@gmail.com).

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## Fee Details of Special Programs:

Course Code	Duration	Fee (INR)	Duration	Cancer Biology Projects	Biotechnology Projects
HB - 07	45 Days	11,000/-	1 Months	8,000/-	6,500/-
HB - 08	60 Days	15,000/-	2 Months	13,500/-	11,000/-
HB -09	3 Months	30,000/-	3 Months	19,500/-	15,000/-
1 - 6 Month Project	1 - 6 Months	See Next Table	4 Months	24,000/-	18,000/-
Ph.D. Work (HB-11)	1 -2 Year	80,000/-	5 Months	30,000/-	21,000/-
# Registration fee: Rs. 500/- will be applicable for all programs.			6 Months	35,000/-	24,000/-

# Publications & Patents

30+ Publication

In biotechnology

2 Patents

In cancer biology

10+ Gene Bank  
submission

20+ workshop  
Organized

Helix BioGenesis has a sophisticated biotechnology facility with high-end instrumentation. We have an experienced team with proven track record of supporting training, research and development programs.



**9 Years**

of working experience.

**5k+ Students**

Trained till now

**10+ Course**

Available for training

**110+ College**

Trust on us for training

**BCIL**

Associated company

**100%**

Hands on training

We aim to provide complete student satisfaction through our technological excellence based on world-class research and development facility.





# Our Association

Helix BioGenesis Pvt. Ltd. has been getting students



DEI DAYALBAGH  
DEEMED UNIVERSITY (INDIA)



and many more.....

# Contact Us

Helix BioGenesis Pvt. Ltd.

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[www.helixbiogenesis.com](http://www.helixbiogenesis.com)



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