

INSTITUTE OF BIOTECHNOLOGY & RESEARCH CENTRE



ESTD. 2006 (Regd. Govt. of India, ISO Certified Laboratory)

Training Brochure



INSTITUTE OF BIOTECHNOLOGY & RESEARCH CENTER (IBRC) Working Address- 39, Deep Nagar Phase-I, Near Hema Petrol Pump; Sikandra-Bodla Road; Agra-282007 Phone No.: +919027621249 Website: <u>www.ibrcagra.org</u>; E-mail ID: <u>ibrcagra@gmail.com</u>; <u>ibrcagra_biotech@yahoo.co.in</u>

IBRC, AGRA

Molecular Biology

15 Days Certificate Program:

- Calculation and Reagent preparation
- DNA isolation from microorganisms
- DNA isolation from plants
- Agarose Gel Electrophoresis
- Randomly Amplified Polymorphic DNA (RAPD)
- Polymerase Chain Reaction (PCR)
 - Programming of Thermocycler
 - Designing of basic experiment
 - Preparation of Master Mix
 - Amplification of DNA
 - Visualization of amplified DNA
- Southern Blotting

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B. Tech (Biotech)

Fees Structure: Rs. 10000/- only

1 Month Certificate Program:

- Calculation and Reagent preparation
- DNA isolation from microorganisms
- DNA isolation from plants
- DNA isolation from animal tissues
- TO check the intactness and sharpness of DNA
- Agarose Gel Electrophoresis
- Staining of DNA
- Randomly Amplified Polymorphic DNA (RAPD)
- Analysis of variation within species
- Polymerase Chain Reaction (PCR)
 - Programming of Thermocycler
 - Designing of basic experiment
 - Preparation of Master Mix
 - Amplification of DNA
 - Visualization of amplified DNA
- *Multiplex PCR
- Southern Blotting
- Southern Hybridization
- *Eligibility:* M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 15,000/- only

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Recombinant DNA Technology

15 Days Certificate Program:

- Calculation and Reagent preparation •
- Preparation of buffers •
- Isolation of plant DNA .
- Isolation of prokaryotic genomic DNA
- Agarose gel electrophoresis
- **Restriction digestion**
- Ligation
- Southern blotting

Eligibility: M. Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) Fees Structure: Rs. 10000/- only

1 Month Certificate Program:

- Calculation and Reagent preparation •
- Preparation of buffers •
- Isolation of plant DNA
- Isolation of animal DNA
- Isolation of plasmid DNA
- Isolation of prokaryotic genomic DNA
- Determination of melting point of DNA
- Agarose gel electrophoresis •
- **Restriction digestion** •
- Ligation
- Transformation
- Southern blotting
- Southern Hybridization •

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 15,000/- only

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Proteomics

15 Days Certificate Program:

- Calculation and Reagent preparation
- Isolation of protein from Plants
- Isolation of protein from microorganism
- Purification and separation of protein through SDS-PAGE
- Western blotting
- Protein purification by Column Chromatography

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) Fees Structure: Rs. 10,000/- only

1 Month Certificate Program:

- Calculation and Reagent preparation
- Isolation of protein from Plants
- Isolation of protein from microorganism
- Isolation of protein from animal tissues
- Purification and separation of protein through SDS-PAGE
- Active enzyme isolation and preparation from plants
- Active enzyme purification and separation through Native PAGE
- Western blotting
- Protein purification by Column Chromatography

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) Fees Structure: Rs. 15,000/- only

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Immunology

15 Days Certificate Program:

- Blood Group determination by W.H.O. Method
- Separation of serum from blood
- Separation of plasma from blood
- Rapid diagnosis of HIV in the blood of patients
- Double Immunodiffusion
- Latex Agglutination
- Haemoglobulin counting

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) *Fees Structure: Rs. 10,000/- only*

1 Month Certificate Program:

- Blood Group determination by W.H.O. Method
- Separation of serum from blood
- Separation of plasma from blood
- Rapid diagnosis of HIV in the blood of patients
- Isolation of Immunoglobulin through PAGE
- Blood group typing through cross reactivity
- Double Immunodiffusion
- Counter Current Immunodiffusion
- Radial Immunodiffusion
- Latex Agglutination
- Determination of molecular weights of Immunoglobulins
- Haemoglobulin counting

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B. Tech (Biotech)

Fees Structure: Rs. 15,000/- only

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Plant Tissue Culture

15 Days Certificate Program:

- Sterilization of glassware and media
- Maintenance of sterility during culturing
- Preparation of Media for culturing
- Callus culture
- Initiation and maintenance of callus from the internodal explants of stem explants
- Embryo culture
- Anther culture
- Meristem culture
- Sterilization of seed (explant) before inoculation
- Inoculation of explant

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 10,000/- only

1 Month Certificate Program:

- Sterilization of glassware and media
- Maintenance of sterility during culturing
- Preparation of Media for culturing
- Preparation of stock solution for culturing
- Preparation of hormone stock solutions
- Callus culture
- Initiation and maintenance of callus from the internodal explants of stem explants
- Embryo culture
- Anther culture
- Meristem culture
- Sterilization of seed (explant) before inoculation
- Inoculation of explant
- Seed culture techniques
- Propagation of seedlings of seedless plant
- Seed viability test

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 15,000/- only

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Basic Microbiology

15 Days Certificate Program:

- Sterilization Techniques
- Preparation of different media
 - Nutrient Agar Plate
 - Selective Agar Media
- Isolation & culturing of microbes from Natural sources
- Culturing of microorganism through streak plate method
 - Study the Morphology of bacteria
 - Through Simple staining
 - Through Differential staining
- Antibiotic sensitivity
- Maintenance and preservation of microbial cultures

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 10,000/- only

1 Month Certificate Program:

- Sterilization Techniques
- Preparation of different media
 - Nutrient Broth.
 - Nutrient Agar Plate
 - Nutrient Agar Slant
 - Differential Agar Media
 - Selective Agar Media
- Isolation & culturing of microbes from Natural sources
- Culturing of microorganism through streak plate method
- Culturing of microorganism through spread plate method
- Culturing of microorganism through pour plate method
- Culturing of microorganism through serial dilution method
- Bacterial Colony Counting
- Study the Morphology of bacteria
 - Through Simple & Differential staining
- Antibiotic disk preparation
- Antibiotic sensitivity & Antibiotic assay
- Maintenance and preservation of microbial cultures
- Enrichment techniques
- Effect of various environmental factors on bacterial growth

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 15,000/- only



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Medical Microbiology

15 Days Certificate Program:

- Isolation of microorganism from clinical samples
- Gram Staining
- IMVIC test
- ELISA
- Widal test
- Detection of blood group and Rh factor
- Catalase test
- Pregnancy test
- Haemoglobulin test
- *RPR test
- WBC count

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 10,000/- only 1 Month Certificate Program:

- Isolation of microorganism from clinical samples
- Gram Staining
- IMVIC test
- Starch hydrolysis
- Gelatin liquification
- H₂S production test
- ELISA
- Widal test
- Detection of blood group and Rh factor
- Catalase test
- Pregnancy test
- Detection of urinary protein
- Detection of urinary glucose
- Detection of ketone bodies in urine samples
- Haemoglobulin test
- *RPR test
- WBC count

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs. 15,000/- only

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Industrial Microbiology

15 Days Certificate Program:

- Sterility techniques
- Isolation of microorganisms from natural sources
- Staining techniques
- Gram's staining
- Biochemical test
- Bacterial growth curve
- Screening of microorganisms for industrial applications
- Caesein hydrolylysis
- Starch hydrolysis
- Antibody assays
- Quality control of milk

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs.10000/- only

1 Month Certificate Program:

- Sterility techniques
- Isolation of microorganisms from natural sources
- Staining techniques
- Gram's staining
- Endospore staining
- Biochemical test
- Gelatin liquification
- Catalase Test
- TSI test
- Bacterial growth curve
- Mutation studies
- Screening of microorganisms for industrial applications
- Caesein hydrolylysis
- Starch hydrolysis
- Cellulose hydrolysis
- Antibody assays
- Quality control of milk
- Water analysis

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs.15000/- only

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<u>Bioinformatics</u>

15 Days Certificate Program: **Basics Bioinformatics**

- Introduction and applications
- **Biological databases** •
- DNA databases
- Protein databases
- Information retrieval from biological databases
- Becoming an instant expert with PubMed
- **Retrieving protein sequences**
- **Retrieving DNA sequences**
- ORFing
- Primer designing
- DNA translation
- Sequence alignment methods
- Pair wise sequence alignment (BLAST/FASTA/Dot plot)
- Multiple sequence alignment (Clustal W)
- **Phylogenetics**
- Introduction and applications
- Methods of phylogenetic analysis

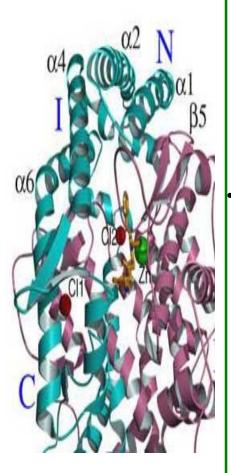
Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) Fees Structure: Rs.10000/- only

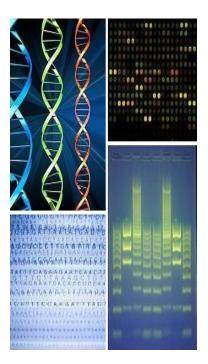
Advanced Bioinformatics

- Bio data bank •
 - NCBI Genbank 0
 - EBI EMBL 0
 - NIG DDBJ 0
 - PIR 0
 - SWISS-Prot 0
 - RCSB PDB \cap
- Drawing and displaying of molecular structures (ISIS draw)
- Genomics: Introduction and Applications
- Gene Identification/ prediction
- Genome Information and features
- Gene annotation
- Proteomics
- Introduction and Applications
- 3 D structure visualization
- **Biological Pathways (KEGG)**

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech) Fees Structure: Rs.15, 000/- only

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1 Month Certificate Program:

- Introduction and applications
- Biological databases
- DNA databases
- Protein databases
- Information retrieval from biological databases
- Becoming an instant expert with PubMed
- Retrieving protein sequences
- Retrieving DNA sequences
- ORFing
- Primer designing
- DNA translation
- Sequence alignment methods
- Pair wise sequence alignment (BLAST/FASTA/Dot plot)
- Multiple sequence alignment (Clustal W)
- Phylogenetics
- Introduction and applications
- Methods of phylogenetic analysis
- Bio data bank
 - NCBI Genbank
 - EBI EMBL
 - NIG DDBJ
 - o PIR
 - SWISS-Prot
 - RCSB PDB
- Drawing and displaying of molecular structures (ISIS draw)
- Genomics
- Introduction and Applications
- Gene Identification/ prediction
- Genome Information and features
- Gene annotation
- Proteomics
- Introduction and Applications
- 3 D structure visualization
- Biological Pathways (KEGG)

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fees Structure: Rs.15000/- only

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Programs for 2 Months

Course	Subjects	Eligibility	Fees	
Advance techniques in Biotechnology	Molecular Biology Proteomics Recombinant DNA Technology, *(Immunology/ Plant tissue culture)	M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)	Rs. 50,000/- only	
Advance techniques in Molecular Biology	Molecular Biology Proteomics Recombinant DNA Technology	M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)	Rs. 40,000/- only	
Advance techniques in Microbial Biotechnology	Basic Microbiology Medical Microbiology Industrial Microbiology	M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)	Rs. 40,000/- only	

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Dissertation Work

Includes short term research works for the partial fulfillment of Master's OR Bachelor's Degree in any of the above mentioned subjects.

Duration

Fee

4 Months 5 Months 6 Months Rs. 26,000/-Rs. 28,000/-Rs. 30,000/-

Eligibility: M.Sc. / B. Sc. (Life Sciences) / M. Pharma / B. Pharma / B.Tech (Biotech)

Fee Structure: According to Topic/Lab

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Feedback of Students....



I have a keen interest in research and IBRC is the only place which has given me the opportunity to work the way I always wanted to. It has taught me that the talent is not what you achieve but what you find in yourself. I'm glad that I worked in IBRC.

Anurag Chaturvedi B.Tech. Biotech F.E.T. R.B.S. College, Bichpuri, Agra.



Everyone who wants to do something extra-ordinary could have no better place other than IBRC to start with. Everyone who is trained over here is taught all the basics and every little bit of things that could help us in future to achieve our goals. **Sachin Kumar** B.Tech. Biotech F.E.T. R.B.S. College, Bichpuri, Agra



Training in IBRC was a great experience. It has all the facilities required for a Biotech Lab. The instructors are always helpful. The best part is that we can do the practical by our own hands which help us to understand the practical even better.

Nidhi Garg B.Tech. Biotech Allahabad Agricultural Institute Deemed University, Allahabad



IBRC possesses all the apparatuses and facilities required for practical in Biotechnology. Moreover, teachers provide special attention to the problems of each and every student as compared to other Institutes. The training at IBRC has vastly increased my knowledge and interest in the biotechnology field. **Bhanu Pratap Singh** M. Sc. Biotechnology

Janta College, Bakewar, Etawah



IBRC possesses a very nice and highly efficient teaching staff. The infrastructure is good for a biotechnology lab. It has all the necessary equipments and chemicals for all the experiments of Biotechnology, Microbiology, Immunology, etc. The teachers have a frank and cooperative behavior towards the students which create a healthy learning environment.

Rajesh Kumar B. Tech Biotechnology National Institute of Aeronautical Science (ALPINE), Prem Nagar, Dehradun

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I'm thankful to IBRC for providing such good facilities and increasing my knowledge, as this lab is not only beneficial for the students of B.Sc. or B. Tech Biotechnology from Agra but also of the near by areas where there is lack of practical knowledge in colleges and there is no other such facilities available anywhere.

> Kamran Khan M. Sc. Biotechnology S. S. Institute, Namner, Agra.



The labs at IBRC are well-equipped & well-maintained. The way of teaching is very good. All confusions are cleared in a very easy manner. Discussions during and after the classes increase our knowledge and help us to understand things better. **Divyanka Kulshrestha** M. Sc. Biotechnology R.B.S. College, Agra



Training at IBRC has increased my knowledge in the field of biotechnology. I have collected more valuable information about the techniques of Molecular Biology & Immunology which I'm sure, will be beneficial for my future. The faculty is very helpful and co-operative.

Seema Mishra M. Sc. Microbiology J. C. Mills PG Girls College Jiwaji University, Gwalior



The infra structure of IBRC is very good and the lab are very well designed. The instruments are placed and maintained appropriately. The teachers maintain cordial relationship with the students. The training includes Bioinformatics which is an advantage to the students as it is usually not available at most of the places. **Yuvraj Bhadauria**

B. Tech Biotechnology Institute of Engineering & Technology, Khandari, Agra



I am thankful to IBRC for upgrading my knowledge in Biotechnology. IBRC have a wellequipped and a well-maintained lab. IBRC have a very good faculty. All teachers are very helpful. I am thankful to all my teachers for making my training such a good learning experience.

Javed Akhtar B. Tech Biotechnology Hindustan Institute of Engineering, Boriwali, Mumbai

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And many more.....

Placement Assistance

IBRC started with an aim to make its students practically so efficient that they would achieve a reputed position in various multinational companies and research institutes and today, IBRC feels proud to see its students/trainees working at good posts in companies.

S. No.	Names	Companies	S. No.	Names	Companies
1.	Siddharth	Panacea Biotech B-1 Extn./ A-27, Mohan Co-op. Industrial Estate, Mathura Road, New Delhi - 110044, INDIA	6.	Shalini Gupta	Ranbaxy Laboratories Limited Corporate Office Plot 90, Sector 32, Gurgaon -122001 (Haryana), INDIA
2.	Preeti Sagar	NICT: New Delhi Park View Appt. 177, Nehar Road, Okhla Head, Jamia Nagar, New Delhi 110025	7.	Shalini Bansal	Ranbaxy Laboratories Limited Corporate Office Plot 90, Sector 32, Gurgaon -122001 (Haryana), INDIA
3.	Amit Sharma	ANM Alliances Pvt. Ltd. Rajendra Place, New Delhi	8.	Suneel Kumar	Lily Pharmaceuticals, Gurgaon
4.	Ravindra chahar	Life Technologies (INDIA)Pvt. Ltd. 306-Aggarwal City Mall, Opp. M2K, Pitampura, New Delhi.	9.	Richi Nagayach	IVRI, Izatnagat, Bareilly.
5.	Deepak Yadav	Cadila Corporate Campus Sarkhej-Dholka Road,	10.	Arshad Rizvi	School of Life Sciences, Hyderabad University,

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Bhat, Ahmedabad-382 210, India.	Hyderabad
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Procedure of Applying

Candidate have to apply for the Training OR Project Work by submitting completed Application Form along with the recent resume, passport sized photographs, photocopies of marksheets & certificate etc., addressed **"To, The Director, 59, West Arjun Nagra, Agra-282001.** Along with a **DD (For Project) & (For Training)** in favour of **"DEEP SHIKHA" through "State Bank Of India" Only** payable at Agra.

**NOTE: The duly filled Application Form must reach at IBRC Head Office within the due dates mentioned in the mail OR as informed by the Admission Incharge as inquired from IBRC Head Office, failing of which may result in the delay of the batches or CANCELLATION of candidature.

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