



BITS Pilani
K K Birla Goa Campus



**BITS BIRAC
BIONEST**

Supported by BIRAC under BioNEST Scheme

**WORKSHOP ON
BASIC MOLECULAR BIOLOGY
LABORATORY TOOLS AND TECHNIQUES**

July 9-13, 2019

About the workshop

Molecular biology relates to understanding the interactions between the various systems of a cell, including the interrelationship of DNA, RNA and protein synthesis and learning how these interactions are regulated. The recent advancements in molecular biology techniques play a major role in biomedical and healthcare innovations. The current workshop focuses on basic molecular biology tools and techniques. The participants persons will be provided theoretical knowledge with emphasis on hands-on training through experimentation. At the end of the workshop, participants would be able to clone and over express the gene of interest themselves.

Lecture Topics:

- Gene Cloning and Expression Vectors
- The Foundation of Molecular Cloning
- Environmental Implications of rDNA Technology
- Role of rDNA technology to improve life
- Ethical issues in using rDNA Technology

Experimental Sessions:

- Genomic DNA isolation
- Plasmid DNA isolation
- Agarose Gel analysis
- Restriction digestion
- Ligation
- Competent cell preparation
- Transformation
- Screening of recombinants

Course Director

Malabika Biswas
Assistant Professor
Dept of Biological Sciences

Resource Persons

AnasuyaGanguly
Associate Professor
Dept of Biological Sciences

Arnab Banerjee
Assistant Professor
Dept of Biological Sciences

IndraniTalukdar
Assistant Professor
Dept of Biological Sciences

BITS BIRAC BioNESTBITS BIRAC BioNEST

BITS BIRAC BioNEST focused in the area of Health and Environment, has a 3500 square feet (1500 sqft Office Space & 2000 sq. ft. Innovation Lab) state-of-the-art infrastructure. It aims to help startups by providing them equipment, space and supporting facilities to test their ideas, prototype in the lab and take it to the market. We invite entrepreneurs, investors, engineers and scientists to be a part of our network and create forward-looking start-ups.

Specialized features: Cell Culture Lab, Molecular Biology, Microbiology, Biochemical Processing Lab, Physico-chemical Analysis Lab, Sample Processing Lab, Biosafety Level II, Video Conferencing facility Companies incubated currently: 05

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, K.K. BIRLA GOA CAMPUS

The Birla Institute of Technology & Science (BITS), Pilani is an all-India Institute for higher education with campuses in Goa, Hyderabad, Pilani and Dubai. Over the years, BITS provides the highest quality technical education to students from all over India, admitted only on merit through the BITSAT examination. The institute alumni are located across the world in various areas so engineering, science and entrepreneurship. The institute symbolizes the maturing of Indian technical ability and "can-do" entrepreneurial spirit.

BIRAC

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India as an interface agency to strengthen and empower

emerging biotech enterprises to undertake strategic research and innovation, addressing nationally relevant product development needs. BIRAC is an industry-academia interface and implements its mandate through a wide range of impact initiatives, be it providing access to risk capital through targeted funding, technology transfer, IP management and hand holding schemes that help bring innovation excellence to the biotech firm and make them globally competitive. In its seven years of existence, BIRAC has initiated several schemes, networks and platforms that help to bridge the existing gaps between industry and academia.

PROJECT INVESTIGATOR & IN-CHARGE

Mridula Goel,
Associate Professor, Dept. of Economics
Contact: 0832 2580254



TECHNICAL DIRECTORS

Srikanth Mutnuri,
Professor & Head, Dept. of Biological Sciences



Sunil Bhand,
Professor-Dept. of Chemistry
Dean-Sponsored Research &
Consultancy Division



Support Team:

Vinobiah Balakrishnan, Manager
Sahita Desai, Senior Technician

EQUIPMENT LIST

Analytical Weighing Balance, Shimadzu Corporation, Japan
Autotitrator, Metrohm, Switzerland
Autoclave, Labomed, America
Biosafety Cabinet BSL II, Esco Micro Pte. Ltd., Singapore
COD Analyzer, Merck, Germany
CO2 Incubator, New Brunswick, Germany
Compound Microscope, Labomed, USA
Deep Freezer, Esco Micro Pte. Ltd., Singapore
Fermenter, Sartorius StedimBiotech, Germany
Fluorescence Microscope, Olympus Corporation, Tokyo
Fumehood, Cleanair Systems, India
Gel Documentation System, VilberLourmat, France
High Speed Refrigerated Centrifuge, REMI, India
Hot Air Oven, Bio-Technics India, India
Ice Flaking Machine, Borg Scientific, India
Incubator Shaker, Scigenics India Pvt. Ltd., India
Kjeldhal Setup, Kjel Plus, Pelican Equipments, India

Laminar Flow, Cleanair, India
Lyophilizer, Labconco Corporation, USA
Muffle Furnace, Bio-Technics India, India
Multistage Incubator, Esco Micro Pte. Ltd., Singapore
Oxy Top BOD, WTW, a xylem brand, Germany
PCR, Bio-Rad Laboratories, Inc., USA
pH meter, Eutech Instruments, Singapore
Real Time PCR, Applied biosystems, Singapore
Refrigerator, LG, India
Rotary Evaporator, Genetix Biotech Asia Pvt. Ltd., India
Spray Dryer, Techno Search Instruments, India
Spectroquant Move 100, Merck, Germany
Thermo reactor TR420, Merck, Germany
TOC-Analyzer, Shimadzu Corporation, Japan
UV-VIS Spectrophotometer, Shimadzu Corporation, Japan
Vertical and Horizontal Gel electrophoresis,
GeNei Laboratories Pvt. Ltd., India



INCUBATION SERVICES AND FACILITIES

Incubation Support

- Startup Incubation
- Laboratory (Workbenches & Equipment)
- Office Space & Common Infrastructure
- IP Services
- Mentorship and Trainings
- Sample testing & Analysis
- Consultancy

Office Space

- Individual AC workspaces of 120 Sq. Ft
- Networking
- Conferencing & AV facility

Technical Services

- Technology Mentoring
- Linkages for technology upscale
- Licensing of technologies

Laboratory Access

- Dedicated Workbench
- Equipment Access 24*7
- Centralized Air Conditioning

General Services

- Legal & Finance
- Business Development support
- Business plan formulation
- Market Research Consultancy
- On demand Equipment access in BITS laboratories
- Access to Campus Infrastructure
- Library, Mess, Medical & Shopping center

Time and Venue

July 9-13, 2019, 9.00 AM to 5.30 PM

BITS BIRACBioNEST,

BITS, Pilani K.K. Birla Goa Campus

Zuarinagar Goa 403726

Office: 0832-2580697

Lab: 0832-2580698

Mobile: 63691 35305, 92732 91115

<https://www.bits-pilani.ac.in/Goa/BITSBIRAC/Home>

Participants: Students, Research Scholars, Faculty,
Startup or Industry professionals

Fees*:

Students, Research Scholars
(Must Produce ID Card) Rs 3000
Faculty, Startup Rs 4500
Individuals from Industry Rs 6500

Registration:

Participants should submit the online registration form available at : www.bits-pilani.ac.in/Goa/BITSBIRAC/Home.
Due to limited seats, registration is on first come first serve basis.

Course Material & Certificate

Each participant will receive relevant course material. A Certificate of Participation will be provided on successful completion of the course.

Mode of Payment: E-Transfer

Selected applicants should make payment through NEFT Transfer and send the transaction details to bionest@goa.bits-pilani.ac.in
Account Name: BITS Pilani K.K. Birla Goa Campus
Account No: 30803684122
Bank name: State Bank of India
Branch Name: BITS Pilani Goa Centre Branch
IFSC Code: SBIN0010720

*Fees paid is not refundable and non-transferable under any circumstances