



**Department of Health Research
Sponsored Training Programme In
Molecular Biology/Molecular Diagnostics
12th to 21st March, 2020**



The DHR sponsored Training programme for Molecular Biology/ Molecular Diagnostics, is being organized in recognition of the need to expand trained manpower in North-East India on human disease to identify important risk factors and interactions among them. The training course aims to impart the participants with hands on training using latest skill for molecular biology/molecular diagnostics using molecular tools and technique.

The training programme carry out twice in a year to cover Five Basic Modules depending upon the availability of External Resource person and Candidates. This training programme will help participants to design experiments in Molecular Genetics, Proteomics and draw inferences on risks and associations.

Training format: lectures, Hand on Laboratory exercises.

Who Can Apply

- *Faculty and Scientists associated in molecular diagnosis based research in Medical college institute/university*
- *Registrar & Demonstrator of Medical College/ Institute/ University*
- *PG and Research Scholar working in Medical Biotechnology/Diagnosis*
- *DMLT/BMLT students*

Organized by: Department of Bioengineering & Technology, GUIST, Gauhati University
Sponsored by Department of Health Research (DHR), Ministry of Health and Family Welfare
Lodging and TA has to be bear by the participants.

*Number of Participants per Module is 20.
Training programme for each Module is subjected to fulfillment of the numbers of applicant.*

Module 1: Molecular detection of HBV/HCV

Module 2: Molecular Cloning

Module 3: Flow Cytometry

Interested participant may apply to any one or more modules.

Registration :

Faculty/Scientist- Rs. 3000/ module for 1&2; Rs. 6000 for module 3.

• **Research Scholar- Rs. 1500/ module for 1&2; Rs. 3000 for module 3.**

• **Students (Bachelors/Masters) - Rs. 1000/ for module 1&2; Rs. 2000 for module 3.**

**Application forms can be downloaded from:
www.gauhati.ac.in**

Filled up application forms should be sent via E-mail to both contact addresses given below.

Deadline for Receipt of Applications:

Two days prior to the commencement of the Training programme.

Selected candidates will be intimated by email, Notice board of the Department and Gauhati University website.

Contact addresses:

1. Dr. Subhash Medhi (Organizing Chairperson), Asstt. Professor, 2nd Floor Arts Building, Dept. of Bioengg & Technology, GUIST, Gauhati University. Phone No- 7002485869

2. Dr. Md. Ghaznavi Idris (Organizing Chairperson), Asstt. Professor, 2nd Floor Arts Building, Dept. of Bioengg & Technology, GUIST, Gauhati University. Phone No- 8254941221

E-mail:

moleculardiagnosticstorkshop@gmail.com

Department of Health Research
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Registration form for Module: I/II /III *

Name _____

Sex- M/F Date of Birth- _____

Designation _____

Address- _____

_____ PIN CODE _____

Mobile No : _____

Email- _____

Previous experience in molecular work: YES/NO

Module selected _____

Food Preference: Non-Veg/Veg

Date:

Place: Signature

*Strike whichever is applied

Organizing Committee:

**Chief Patron: Hon'ble Vice-Chancellor, GU,
Dr. P.J Handique.**

**Patron: Prof. Manab Deka, Director, GUIST, Gauhati
University**

**Chairperson: Dr Debabrat Baishya, Assistant Proff &
Head (i/c)Dept of Bioengineering & Technology,
GUIST, GU.**

Organizing Chairperson:

**Dr Subhash Medhi, Asst Professor, Dept. of
Bioengineering & Technology, GUIST, GU**

**Dr Md. Ghaznavi Idris, Asst Professor, Dept
of Bioengineering & Technology, GUIST, GU.**

Members:

**Dr. Sangit Dutta, Professor, Department of
Medicine, Gauhati Medical College & Hospital**

**Dr. Anupam Sharma, Professor, Department
of Pathology, Dr. B. Borooah Cancer Institute**

**Dr Sofia Banu, Asst Professor, Dept. of
Bioengineering & Technology, GUIST, GU**

**Dr Kandarpa Kumar Saikia, Associate Proff,
Dept. of Bioengineering & Technology, GUIST, GU**

**Dr. Arijit Bora, Deputy Secretary, Gauhati
University.**

**Dr. Rituparna Borah, Scientific Officer, Dept.
of Bioengineering & Technology, GUIST, GU**

Associated Members:

Dr. Karishma Hussain- DST-National Post Doc
Fellow, GU

Dr. Manash P Sharma, Asso. Prof. Dept. of
Biotechnology, Assam Down Town University.

Dr. Snigdha Saikia- Post doctorate, IIT
Guwahati

Mr. Prajjalendra Barooah- Research Associate
Guwahati Biotech Park

Research Scholars: Manash J Kalita, Gautam
Hazarika, Jayshree Talukdar, Chenole Keppen.

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About the workshop

The "Age of Genomics" has heralded a new era of high-throughput biology. The question remains, however, as to how best to utilize this plethora of new DNA sequence information. Much progress has been made on two fronts: i) the use of "realtime PCR" enables monitoring expression at the transcript (RNA) level; and ii) the establishment of rapid and sensitive techniques for understanding the protein complement of the genome (the "proteome"). These techniques allow scientists to understand how the genome responds to changes in environment or genetics, and most importantly during health and disease at the organism, cell or tissue level.

This workshop intends to provide a comprehensive account of the cutting-edge technologies currently being applied in the field of functional genomics – with a particular emphasis on the proteome. Technologies with specific examples of their application in the biological and medical sciences. This knowledge will demonstrate how science is striving towards understanding the molecular and biochemical fundamentals of life. The workshop will be a guide for prospective biomedical researches. Every effort shall be made to provide the latest information during the workshop. The participants will be offered intensive discussion and practical training in some of the most widely used molecular biology tools such as 2D gels electrophoresis, Flow cytometry, Fluorescence microscope and real time PCR. The workshop therefore will use different formats like instruction, discussion, and exercise to facilitate active involvement and participation among the participants. This workshop is expected to enhance the research capacity of the individual participants and in turn, this will add to the advantage of their respective institutions.

Salient features and Objective of the workshop:

- The basic behind Polymerase chain reaction and real time PCR in disease diagnostic and expression of host genetic factors

- The theory behind 2D and DIGE, the practical running of a 2D gel and the use of the scanners to acquire gel images
- Detection and analysis by Laser flow cytometry for study of cellular proliferation, phenotype and marker expression in tumor cells and other molecules of diagnostic and therapeutic use.

Department of Bioengineering & Technology:

The Department of Bioengineering and Technology, was established in 2009 with a vision to create an atmosphere of knowledge dispersal in the field of Biotechnology that percolates down as employment of the students of this region. The Department is offering four year B.Tech and two year M.Tech course in Biotechnology besides the DBT sponsored M.Sc-PhD Programme in Food Science. From the academic session 2018-19, The Department has been a part of the initiative to impart M.Sc Cancer Biology programme in collaboration with Dr. B. Borooah Cancer Institute. The Department has well established laboratory facility with instruments for molecular diagnostics and is running several projects funded by DBT, ICMR and other funding agency at present in collaboration with other Institute of repute.

Targeted participants:

- Faculty and Scientists associated in molecular diagnosis based research in Medical college institute/university
- Register & Demonstrator of Medical College/ Institute/ University
- PG and Research Scholar working in Bio- Medical Science
- BMLT/ DMLT students

Important dates:

- Last date of receiving application from candidates: 10 days after advertisement.
- Selected candidates will be intimated by email, Notice board of the Department and Gauhati University website one week before the commencement of the workshop.
- An applicant may use the Photostat copy of the application form or may send the computer typed form as per the attached format.

Applicant should give a brief description of their research profile and how the workshop is going to help in near future research work in 250-300 words. Only a limited number of seats (Twenty) are available for the workshop. Selection of participant is based on Organizing committee's decision.

Number of Participants per Module is 20. Training programme for each Module is subjected to fulfillment of the numbers of applicant.

Module 1: Molecular detection of HBV/HCV

Module 2: Molecular Cloning

Module 3: Flow Cytometry

Interested participant may apply to any one or more modules.

Registration fee:

- Faculty/Scientist- Rs. 3000/ module for 1&2; Rs. 6000 for module 3.
- Research Scholar- Rs. 1500/ module for 1&2; Rs. 3000 for module 3.
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N.B: Lodging and TA has to be bear by the participants. The registration fee may be paid at office of the Organizing Chairperson or at the registration desk along with the duly filled registration form.

Contact Details:

Email: Moleculardiagnosicsworkshop@gmail.com

Manash j Kalita- 87240-10050
Gautam Hazarika- 98640-30274

Mailing address/Office:

Organizing Chairperson, Room No- 212/214, 2nd Floor Arts Building, Department of Bioengineering & Technology, Gauhati University Institute of Science & Technology, Gauhati University, Guwahati-781014.

Department of Health Research Sponsored Training Programme in Molecular Biology/Molecular Diagnostics

16th March to 21st March 2020

Module 1: Molecular detection of HBV/HCV

Theory: *Molecular detection & Genotyping of Hepatitis Virus based on PCR method.*

Hands-on session:

- *Isolation of viral nucleic acid(manual method/kit based method)*
- *Viral detection through PCR Viral load estimation through Real time PCR*
- *Viral genotyping (sequencing based method/PCR based method).*
- *Phylogentic analysis*

Module 2: Molecular Cloning

Theory:

- *Competent cell preparation & Transformation Technique.*
- *Gene cloning.*

Hands-on session:

- *Competent cell preparation*
- *Transformation of the competent cells.*
- *Screening for positive clones and culturing the transformed cells.*
- *Plasmid DNA isolation and PCR detection of the inserted gene of interest.*

Module 3: Flow Cytometry

Theory:

- *Introduction and Concept of Multicolour Flow Cytometry*
- *Experimental & Gating Controls, Compensation & Stain index.*

Hands-on session:

- *Machine start-up, Template creation & Assay setup*
- *Compensation, Sample staining, & preparation*
- *Cell viability assay & Apoptosis analysis using HepG2 cell line.*
- *Antibody titration using available labelled primary antibody.*

Organised by: Department of Bioengineering & Technology, Gauhati University, Ghy-14
Sponsored by: Department of Health Research (DHR), Ministry of Health and family welfare.