

PATRON-IN-CHIEF

Dr. Raja Ali Raza Anwar, CS/Chairman, PAEC

PATRON

Dr. Shakeel Abbas, CS/Member (Science), PAEC

Dr. Waheed S. Khan, DCS/DG (A & B), PAEC

ORGANIZING COMMITTEE

Dr. Nasir A. Saeed, CS/Director, NIBGE

Dr. Fazli Rabbi Awan, DCS/Head, HBD, NIBGE

Dr. Waqar Rauf, PS/Group Leader, NIBGE

Dr. Wasim Abbas, PS, NIBGE

Dr. Aamir Shehzad, SS, NIBGE

Mr. Tayyab Yaseen, SS, NIBGE

ORGANIZING TEAM

Mr. Sarmad Nawaz, HBD

Ms. Aqsa Tahir, HBD

Ms. Itra Ayoub, HBD

Ms. Iqra Shahzadi, HBD

Ms. Ayesha Riaz, HBD

Mr. Rizwan Bashir, HBD

Mr. Shakeel, HBD

FREE REGISTRATION | LIMITED PARTICIPANTS

Tel: +92-(0)41-9201316-20 Ext. 3323

Fax: +92-(0)41-9201322

Web: <http://nibge.org>



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For application form

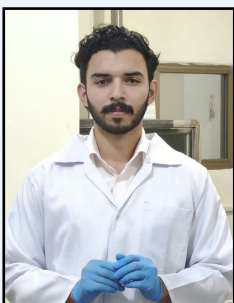
For more information



+92-(0)316-4857832



sarmadnawaz08@outlook.com



Mr. Sarmad Nawaz



WORKSHOP COORDINATORS



Dr. Nasir A. Saeed
CS/Director NIBGE



Dr. Fazli R. Awan
DCS/Head, HBD



Dr. Waqar Rauf
PS/Group Leader



Dr. Wasim Abbas
Pr. Scientist
Organizer



Mr. Tayyab Yaseen
Sr. Scientist



Dr. Aamir Shehzad
Sr. Scientist
Organizer

CELLS IN CULTURE

THE ART OF **Growing Life**

3-Day Hands-on Workshop

On **Cell Culture**

03-05 November 2026



Drug Discovery & Structural Biology Group,
**National Institute for Biotechnology & Genetic
Engineering (NIBGE)**

Workshop Overview:

This practical workshop is designed to train students and researchers in basic cell culture techniques. The workshop will provide a fundamental understanding of cell culture, and its use in modern biology, through daily lectures, followed by demonstration of these techniques through extended laboratory sessions. These sessions will aim to equip the participants with basic cell culture techniques, including cell harvesting, subculturing, seeding, cryopreservation, transfections, and cytotoxicity assays. Cell culture techniques are fundamental to various fields of medical and biological research. Training in this area will enable students and researchers to conduct basic research, effectively investigate diseases and develop new drugs or vaccines. Cell culture training will allow scientists to work with disease-causing agents in a controlled environment, enabling them to understand the pathogens better and develop disease control and prevention strategies.

WORKSHOP OBJECTIVES

- Provide practical training in basic cell culture techniques
- Application of cell culture in basic and applied research
- Build confidence in performing cell culture work independently

TARGET PARTICIPANTS:

Students and researchers from academic or research organizations.

EXPECTED OUTCOMES:

- Participants will gain hands-on experience in cell culture
- Better understating of standard laboratory practices
- Ability to apply the learned techniques in their own research

WORKSHOP CONTENTS:

- Introduction to Cell Culture
- Cell Culture Lab Safety Practices
- Media Preparation
- Cell Culture Techniques and Passaging of Adherent and Non-adherent Cell Lines
- Maintenance of Human Cancer Cell Lines
- Cell Counting by Haemocytometer
- Cell Seeding
- Cell Viability Assay
- Cryopreservation: Freezing and Thawing of Human Cancer Cell Lines
- MTT Assay for Cell Proliferation/Cytotoxicity
- Evaluation of Anticancer Drugs in Different Cancer Cell Lines
- Bioreactor Based Vaccine for Industrial Application

WORKSHOP CHARGES:

The workshop is free of charge. There is **NO REGISTRATION** fee.

TRAVEL & ACCOMMODATION:

- Accommodation will **not be provided**. Participant are responsible for their own travel and accommodation.
- Working lunch will be available at NIBGE officer cafeteria on a payment basis.

ATTENTION:

- All participants are advised to bring their lab coats.
- All participants **MUST bring their original CNIC** as its possession is compulsory for entry into NIBGE.

Workshop Schedule:

DAY 1 (Tuesday, 03 Nov)

Theme: Fundamentals of Mammalian Cell Culture and Laboratory Techniques

8:30 - 9:00 am | Registration of Participants
9:00 - 10:00 am | Welcome Address, Introduction of Participants, and Overview of NIBGE
10:00 -10:30 am | Lecture 1: Introduction to Cell Culture & Basic Techniques (**Speaker: Dr. Wasim Abbas**)
10:30 - 11:00 am | Break
11:00 - 12:30 pm | Practical session 1: Biosafety, aseptic techniques, preparation of culture media, and handling of cell culture equipment
12:30 - 13:30 | Break
13:30 - 16:00 | Practical session 2: Cell culture maintenance, Cryopreservation, Cell counting, and Seeding

DAY 2 (Wednesday, 04 Nov)

Theme: Cell Culture Applications in Immunotherapy and Drug Discovery

8:30 –9:30 am | Lecture 2: Applications of Cell Culture in CAR-T Cell Therapy and Cancer Immunotherapy (**Speaker: Dr. Wasim Abbas**)
9:30 -10:30 am | Lecture 3: Virus-Like Particles (VLPs) in Cell Culture-based Vaccine Development (**Speaker: Dr. Aamir Shehzad**)
10:30 - 11:00 am | Break
11:00 - 12:30 pm | Practical Session 3: Isolation of PBMCs from blood using density-gradient centrifugation
12:30 - 13:30 | Break
13:30 - 16:00 | Practical Session 4: MTT assay/cell proliferation assay, Screening of anticancer compounds

DAY 3 (Thursday, 05 Nov)

Theme: Advanced Cell Culture Technologies, Flow Cytometry, and Data Analysis

8:30 –9:30 am | Lecture 4: Flow cytometry: From Cell Culture to Cell Analysis (**Speaker: Dr. Wasim Abbas**)
9:30 –10:30 am | Practical session 5: Bioreactor-Based Cell Culture — Introduction to bioreactors, suspension cell culture, growth monitoring, and applications in biopharmaceutical production
10:30 - 11:00 am | Break
11:00 - 12:30 pm | Practical Session 6: MTT data analysis
12:30 - 13:30 | Break
13:30 - 16:00 | Scientific Discussions/Concluding Session