

DBT-ALSBT Hub Hands-on Training on
“Advances in Animal Cell culture techniques and expression of
heterologous protein in mammalian cell lines”

Organized by
Department of Animal Biotechnology, College of Veterinary Science, AAU,
Khanapara, Guwahati-781022.

From: 20th to 26th June, 2024

Cell culture, the art of growing cells outside their natural environment, has revolutionized our understanding of biology. From fundamental research to groundbreaking medical advancements, this seemingly simple technique has become a cornerstone of modern science. The impact of cell culture extends far beyond the research laboratory. Cell culture has been instrumental in various aspects of life science research with practical applications like production of different vaccines and biopharmaceuticals, stem cell therapy and tissue engineering for regenerative medicines, understanding disease mechanisms, drug discovery and development, genetic engineering and gene therapy, environmental monitoring by assessing the toxicity of environmental pollutants etc.

Advanced Level State Biotech Hub, Assam hosted in the Department of Animal Biotechnology, College of Veterinary Science, Khanapara is well equipped to undertake the basic to advance research on animal cell culture techniques.

This training will be organized with an aim to train 12 selected teachers/ researchers/ biomedical workers / veterinary or medical research scholars on applications of animal cell culture techniques in basic and advanced research and expression of heterologous protein in mammalian cell lines specifically giving hands-on experiences in these aspects.

The training will not only merely help to develop technical skills but also provide opportunities in future academic and research career and prospects for collaboration.

Contents of the hands-on training:

Theory lectures: Introduction to animal cell culture and its application, basic requirements for animal cells and different culture techniques, Stem cells in regenerative medicine, Strategies for gene cloning and eukaryotic expression, Heterologous Gene expression in mammalian cell lines and purification of recombinant proteins, Virus isolation in animal cell culture and their titration, Cell viability, proliferation and cytotoxicity assays.

Practical sessions: Sterilization procedures for cell culture work, Preparation of cell culture media and reagents, Handling/ subculture and maintenance of cell lines, Cell counting and cryopreservation of cell lines, Primary culture establishment from Chicken Embryo, Ligation of gene of interest to expression vector and transformation to competent cells, Selection and screening of clones by colony PCR, Extraction of Plasmid and evaluation of its quality and concentration, Transfection of mammalian cell line for protein expression, Detection of expressed protein by GFP/RFP marker and Dot Blot assay, Isolation of virus in animal cell culture, Extraction of Total DNA/RNA from mammalian cells and determination of quality and concentration, Observation of CPE in cell culture and confirmation of virus isolates by PCR/ RT-PCR, Determination of cell proliferation and cytotoxicity by MTT assay, Harvesting and purification of secreted recombinant proteins from the transfected mammalian cells, Characterization of mammalian cell expressed protein by SDS-PAGE & western blotting.

Application procedure:

One can directly apply online by using the following web link

http://www.vetbifg.ac.in/SBT_HUB_training_june_2024/home.html

Download the application form from the link and upload the soft copy of the filled and signed application form through the mentioned link. For any other queries you can email to nabaassam@gmail.com OR sbthub2022@vetbifg.ac.in.

No need to send hard copies of the applications. For any clarification, the interested applicants may contact Naba Kumar Deka (6901119256).

Application Fee:

Registration fee of Rs. 1000.00 (excluding accommodation) may be paid by the selected applicants at the time of registration on the first day of the training in the form of Demand Draft drawn in favour of DIRECTOR OF RESEARCH (VETERINARY), AAU payable at Khanapara. No TA/DA will be admissible to the participants to attend the training.

Lodging & Food:

Lodging for the selected candidates may be arranged in the College Guest house on twin sharing basis. The charges for accommodation must be paid directly in the Guesthouse at the time of check out (AC room @ Rs. 750/-day/person, Non-AC room @ Rs.400/-day/person). Working lunch along with session tea will be served in the department for the participants during the training days.

Last Date of Application:

Last date of application is **14th June 2024**. List of the selected candidates will be posted in the website <http://www.vetbifg.ac.in/> on 15th June 2024. Also selected candidates will be intimated through email.

Organizers:

Dr. Dipak Deka

Assoc. Professor & Head (i/c)

Coordinator, DBT-ASLBT Hub

Department of Animal Biotechnology,

College of Veterinary Science, AAU, Khanapara-22

NOMINATION FORM FOR TRAINING

Training Code: [ALSBTHub – 2024-25/01]

1. Name of the applicant:
2. Sex: Male/Female:
3. Designation:
4. Name of organization/department:
5. Category: Teacher/Researcher/Post-graduate scholar
6. Address for communication:

7. Telephone No.:
8. WhatsApp No.:
9. E-mail address:
10. Have you attended similar training earlier?

If yes, furnish details:

11. Details of working experience, if any:

12. Do you require accommodation?

Signature of the applicant

Nomination:

I do hereby nominate _____ for participating in the training programme on “**Advances in Animal Cell culture techniques and expression of heterologous protein in mammalian cell lines**” organized by the DBT-funded Advance Level State Biotech Hub (Assam), College of Veterinary Science, A.A.U., Khanapara, Guwahati from 20th to 26th June, 2024.

Office seal

Signature of the Nominating Authority

NB: Already passed out or independent candidate can avoid nomination part but need to fill the rest.