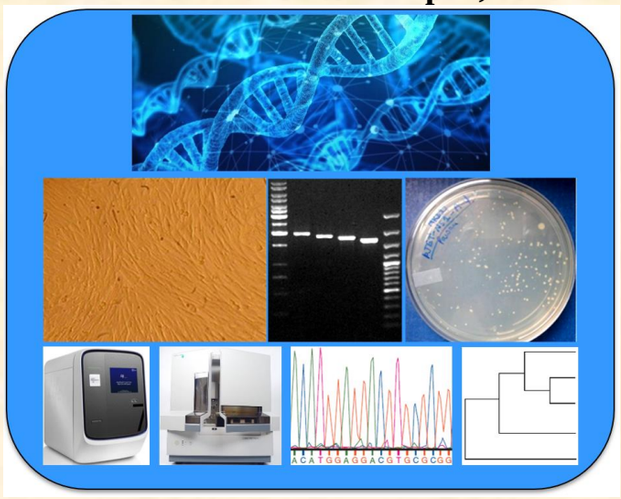
A 21-day Training Course on

"Protocols in Molecular Biology and Bioinformatics"

From 18th March to 7th April, 2025



Course Director: ***Dr. Sushila Maan***
Course Co-ordinator: ***Dr. Pawan Kumar***
Course Faculty: ***Dr. Aman Kumar***
Dr. Kanisht Batra

Department of Animal Biotechnology
College of Veterinary Sciences
Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar, 125 004
Haryana

Duration: 18th March to 7th April, 2025

Course Fees*:* Indian participants are requested to pay a sum of Rs. 8000/- (Rs. Eight thousand only) for the training course while for foreign participants the registration fee is 200 USD per week. The registration fee shall be deposited in cash at the time of registration on March 18, 2025.

Number of participants: The maximum number of participants shall not exceed 20. Selection of candidates is completely based on first come first selection basis.

Participants and eligibility: Participants are invited from ICAR Institutes/ SAU/ Basic Science Institutes/ State Governments/ Private Organizations from India and abroad. They can be UG/PG of Veterinary/biotechnology/life sciences having interest in the field of molecular biology and diagnostics.

How to apply: The application for participation may be sent in duly prescribed format and it should reach to the Course Director latest by 17th March 2025 up to 4:30 PM by post, in-person, fax or email. The TA & DA of the participants will be borne by participants/ sponsoring institutions/ organizations etc. The participants will also have to pay for their boarding and lodging charges during the training program. The organizers of the course will not bear any expenses on account of the participants.

Hisar: It is located 180 km from Delhi, 320 km from Jaipur and 250 km from Chandigarh. It is well connected from Delhi by train as well as bus. The buses ply between interstate bus terminuses (ISBT) New Delhi and Hisar. There are four trains from Delhi to Hisar viz., Gorakdham Express, Shri Ganganagar Express, Kisan Express and Sirsa Express.

All correspondence may please be addressed to:
Dr. Sushila Maan, Course Director cum Prof. & Head
Department of Animal Biotechnology, LUVAS, Hisar, Haryana- 125004, India
Phone no. 01662- 256130 (office).
Cell: 9991850394 (Dr. Pawan Kumar, Course coordinator)
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Application Form

Objectives

The biotechnology plays an important role in the development of diagnostic assays in response to an outbreak or critical disease response need. The tools of molecular biology and bioinformatics can be used for various biomedical applications including diagnostics and therapeutics.

These techniques can help in generating biologically valuable recombinant DNA (rDNA) materials. The rDNA pertains to the creation of new combinations of DNA that would not otherwise be found in biological organisms or in nature. Along with rDNA technology other tools and techniques in biotechnology are very helpful and define way to understand the molecular basis of diseases of human and animal origin.

Therefore, it is important that these tools should be developed indigenously based on the problems of concern field or geographical region. Now a day's these molecular biology tools are commonly used in the area of genomics, transcriptomics, metabolomics, metagenomics and different aspects of reproductive biotechnology for various purposes like disease specific molecular marker development, diagnosis and molecular typing of microbes, new generation vaccine development, antisense technology, molecular therapeutics, identification of breeds etc. These tools are also useful in area of forensic science, molecular medicine and to know the meat adulteration.

Further, the applications of rDNA tools have entered in era of high throughput technologies. This field is revolutionizing current era and have potential to open new vistas in the field of disease management. The biomedical data is accumulated fast through newer techniques like next generation sequencing in the genomics era. Bioinformatics involves the algorithms to represent, store, and analyse this huge biological data generated through wet lab experiments. Translational bioinformatics which focuses on the biomarker discovery, integrates the information about molecular entities (DNA, RNA, proteins, and small molecules) with the information about clinical entities (genetics, diseases, symptoms, laboratory tests, pathology reports, and clinical images).

However, nucleic acid based tools are yet not routinely used for diagnosis of infectious diseases of livestock, pets and poultry. Therefore, this hands-on training course on 'Protocols in Molecular Biology and Bioinformatics' is designed to provide comprehensive knowledge in the field of molecular diagnosis. The training programme will cover the theoretical aspects of molecular biology and bioinformatics techniques and protocols for better understanding of the practical events.

Course content:

- Specimen collection, transport and storage for molecular diagnostics
- Reagents and solutions for molecular biology experiments
- Extraction and purification of genomic DNA/RNA from various clinical samples
- Designing of specific primers and molecular diagnostic development
- PCR and its variants for nucleic acid amplification
- Gel and capillary electrophoresis
- Recombinant DNA Technology
- Molecular cloning, transformation and selection of recombinant clones
- Plasmid isolation and profiling
- DNA sequencing platforms- Sanger's sequencing and Next-Gen sequencing
- Data mining from NCBI and sequence processing
- Offline and Online Bioinformatics tools and sequence analysis for disease diagnosis
- Diagnosis and therapeutic applications of peptides
- Cell culture technique for virus cultivation

Organizer
Department of Animal Biotechnology
College of Veterinary Sciences
Lala Lajpat Rai University of Veterinary and Animal Sciences
(LUVAS), Hisar 125 004, Haryana

1. Full Name: _____
2. Designation: _____
3. Gender: _____ 4. Date of birth _____
5. Present address:

   _____

   _____
6. Tel No. _____ (office) _____(Res)
7. Email address _____
8. Teaching/ research /professional experience along with the posts held (During last five years):

Post held	Institution	Period	Nature of duty

9. Academic records:

Exam Passed	Subject/s	Year of passing	Percent/OGPA	University
Ph.D				
Master's degree				
Bachelor's degree				

Signature of the applicant

10. Date: _____
11. Place: _____
12. Recommendation of forwarding institution/organization: