

INTRODUCTION

Fish Genetics and Biotechnology Division of the institute caters to requirements of biotechnological tools for increasing fish production. Molecular genetics approaches, such as DNA marker technology, DNA cloning, RNA technologies, transgenic, CRISPR/CAs9 technology, stem cell culture and proteomic tools have been used by the division, which to complement traditional selective breeding program for genetic improvement. Tools such as mapping populations, DNA marker maps, EST databases, transcriptomes, whole genome sequences etc. have been generated by the division recently to be serve as genomic resources for detection of quantitative trait loci (QTL) leading to marker assisted selection (MAS) and genomic selection (GS). Besides, candidate gene approach of identifying and characterizing genes involved in reproductive processes of carps has been successful. Considering the importance of the cutting-edge molecular biology techniques, the Fish Genetics and Biotechnology Division is organizing a training program with the objective to provide short-term hands-on training to researchers, faculties and students in order to produce human resources in the field of molecular biology research.

TRAINING MODULE

Molecular Biology

1. Extraction of DNA
2. Extraction of RNA
3. Quality and quantity checking of DNA/RNA & RE digestion.
4. Gel electrophoresis
5. Primer designing and PCR optimization
6. Polymerase chain reaction
7. cDNA synthesis
9. Poly acrylamide gel electrophoresis of protein
10. Quantitative real time PCR
11. SOP of laboratory operation
12. Histology

GENETICS

1. Population genetics
2. Quantitative genetics and selective breeding
3. Tagging and marking of live fish and its importance in selective breeding program
3. Genetic data analysis
4. Introduction to statistical program R

COURSE FEE

A course fee of Rs. 2,000/- per candidate (this includes registration fee & working lunch) will be charged at the time of registration. Selected candidates will be provided online payment link for payment of registration fee.

ACCOMMODATION

Accommodation will be arranged in the Institute's Guest House on payment basis (@250/day).

HOW TO APPLY

Post graduate students, research scholars and faculties keen to pursue research in the area of Molecular biology and Genetics; M.Sc. in any branch of life sciences should register in the online registration form <https://docs.google.com/forms/d/1CXDP3G0PpdtzHu2mL8-IFwmjiG9C7IYURF7bYT0ljk/edit>. Last date of receiving application is 20.10.2021. Intimation to selected candidates will be sent through email.

CONTACT DETAILS

Tel. 0674 -2465421, 2465446

Fax: 0674-2465407

E-mail: genomics.trainin@gmail.com

DIRECTOR

Dr. S. K. Swain

COURSE DIRECTOR

Dr. J. K. Sundaray
(9437166872/8249851262)

CO-COURSE DIRECTORS

Dr. P. K. Meher, Dr. L. Sahoo & Dr. K. Murmu
(9438732839, 9437359749, 7978732814)

COURSE COORDINATORS

Uday K. Udit, Mohan R. Badhe, P. C. Nandanpawar & Avinash R. Rasal

Hands-On Training on

“Recent Advances Genetics and Molecular Biology Techniques”

26 October -1 November, 2021

1. Full Name (in block letters) :
 2. Designation :
 3. Date of Birth :
 4. Sex :
 5. Present employer and address :
 6. Address for communication (including tel/mob/fax & email) :
 7. Area of research & Professional experience :
 8. Academic record (highest qualification) :
 9. Purpose of attending the training program :
- It is certified that the information furnished above are true to the best of my knowledge

Date: _____ Signature of the Applicant
Place: _____

10. Recommendation of forwarding authority if any
11. Signature of the competent authority

ICAR-CENTRAL INSTITUTE OF FRESH- WATER AQUACULTURE

The ICAR-Central Institute of Freshwater Aquaculture (ICAR-CIFA) is a premier research Institute in freshwater aquaculture in the country under the administrative control of the ICAR, New Delhi. This Institution has to its credit the sprawling campus of 147 ha with more than 350 assorted ponds in the farm, hatcheries, feed mill, ABL, research laboratory facilities, a Krishi Vigyan Kendra, Guest House, Hostels, Post office and Bank located within the campus. There are more than 75 research scientists catering to the research, training and extension need in breeding, culture, health, nutrition and physiology, genetics and biotechnology and social science aspects of freshwater fish and shellfish species. The focus is species and system diversification, genetic improvement of prioritized species through genetic and biotechnological tools, development of high quality feed, disease diagnostics, technology dissemination and extension.

Competencies being acquired

1. Lecture

- Understanding the fundamental concepts in molecular biology, describing the steps in DNA/RNA extraction, Gel electrophoresis, PCR, RE, qRT-PCR, PAGE and quantitative genetics and selective breeding and other considerations in setting up of a molecular biology laboratory.

2. Practical

- Practical skill and troubleshooting needed in performing basic molecular biology protocols like DNA/RNA extraction, PCR, RE and PAGE etc.
- Performing basic skills needed in fundamental molecular biology protocols by doing practical hands-on activities.
- Skill of fish tagging with PIT tag
- Practical skill on slide preparation and histology examination
- Analyzing genetic data using various software.
- Familiarization with R program.

Location

ICAR-CIFA is located 8 km away from the city, on the BBSR-PURI highway. Bhubaneswar, the temple city of India in the state of Odisha, is a world heritage point.



Hands-On Training on “Recent Advances Genetics and Molecular Biology Techniques”

26 October -1 November, 2021



Organised by



Fish Genetics & Biotechnology Division

ICAR- Central Institute of Freshwater Aquaculture
(Indian Council of Agricultural Research)
(An ISO 9001:2015 Certified Institution)
Kausalyaganga, Bhubaneswar –751002