



हर कदम, हर डगर  
किसानों का हमसफर  
भारतीय कृषि अनुसंधान परिषद

*AgriSearch with a human touch*



## Training Programme

On

**Molecular methods of bacterial identification**

December 10 - 15, 2012

Organized by



**Central Inland Fisheries Research Institute**  
(Indian Council of Agricultural Research)  
Barrackpore, Kolkata – 700 120

## About the Training Programme

Bacterial identification and taxonomy has evolved through decadal changes from morphology, growth characters, metabolic characters, fatty acid profile to G+C content and DNA-DNA hybridization based genome similarity. However, performing so many tests to identify an isolate is difficult and most laboratories do not have time, facility or expertise to do so. With advancement of sequencing technology, Ribosomal Database Project was initiated and present day bacterial taxonomy is largely based on 16S rDNA sequence homology. Today, bacterial identification is easy as NCBI BLAST gives instant identification of a bacterium through alignment of Query sequence with the NCBI Library. But lack of knowledge and ignorance may lead to wrong identification. This error has accumulated in public databases with increasing probability of wrong identification. Aquatic microbes having role in both ecosystem functioning and pollution monitoring and mitigation is getting fillip for which molecular identification is a primary step. Now-a-days, it is also essential to report a bacterial isolate in phylogenetic tree. The present training encompasses fundamentals and practical aspects of 16S based bacterial identification, from genomic DNA isolation up to phylogenetic tree drawing for developing expertise among students and researchers.

## About the Institute

Central Inland Fisheries Research Institute (CIFRI) is a premier fisheries research institute in India since 1947. The Head Quarter of the Institute is located in Barrackpore, Kolkata – 700 120. The Institute has the mandate to generate scientific database on fish and fisheries of Inland open waters, viz., rivers, estuaries, reservoirs and wetlands; develop ecosystem based management strategies for sustainable fishery enhancement in reservoirs and wetlands; monitor ecosystem changes and their impacts through EIA and develop mitigation plans, and provide policy support. The Institute has a team of distinguished scientists having international exposure in various fields, including microbiology, biochemistry and biotechnology and advanced laboratories to cater to their needs. With more than 60 years of dedicated national and international presence in the field of inland open water fishery, CIFRI is taking up new initiative to extend its expertise and facilities for direct benefit of the fisher community, private and public

institutions/ organizations and state departments through public-private partnership.

## Objectives

- To acquaint the participants with molecular methods of bacterial identification
- To impart hands on training on 16S rRNA based bacterial identification and taxonomy

**Duration:** December 10-15, 2012

## Course Contents

- Fundamental of 16S rRNA
- Genomic DNA isolation
- 16S rDNA PCR
- Electrophoresis of PCR products
- Sequencing of PCR products
- Bioinformatics tools for sequence analysis
- Sequence alignment and contig building
- 16S libraries and reference sequence
- Editing and getting correct 16S sequence
- Avoiding chimera and other errors
- Getting correct identification
- Other molecular markers of identification
- Phylogenetic tree drawing

## Who can apply?

Post graduate students, research scholars, scientists, college/university faculty members working in areas of microbiology and biotechnology

**Number of Participants:** 15

## Deadlines

Last date of receipt of application/nomination: December 5, 2012

Intimation to selected candidates: December 6, 2012

## Course Fee

The course fee is Rs. 7000/= (Seven thousand) only. This includes registration/bench fee and lodging and boarding charges with standard accommodation on sharing basis. No TA and DA will be paid by the organizer. Participant has to arrange his/her own to and fro travelling expenses.

## How to Apply

Eligible candidates may apply in the prescribed application form along with brief biodata on or before December 5, 2012. The application form and other details are available at: <http://www.cifri.ernet.in>. The complete application should be sent to: The Director, Central Inland Fisheries Research Institute, Barrackpore, Kolkata – 700120 (Attn: Dr. Sanjib Kumar Manna) and the softcopy of the application should be E.mailed to: [drsanjibmanna@gmail.com](mailto:drsanjibmanna@gmail.com), with a copy to: [beherabk18@yahoo.co.in](mailto:beherabk18@yahoo.co.in), [mdaftab73@rediffmail.com](mailto:mdaftab73@rediffmail.com). Selected candidates will be informed regarding their participation by E. mail.

## Weather Conditions

During middle of December, weather at Barrackpore is very pleasant with temperature around 12-25°C. Participants are requested to carry warm clothes for comfort.

## APPLICATION FORMAT

### Training programme on Molecular methods of bacterial identification

Name of the applicant: -----

Nationality: -----

Educational qualification: -----

Date of birth: ----- Sex: -----

Designation/ Position: -----

Organization/Affiliation: -----

Address for correspondence: -----

E. mail address: -----

Telephone and fax number: -----

Cell phone number: -----

Experience in microbiology works: -----

Date: \_\_\_\_\_ Signature of applicant

Signature of competent/forwarding authority

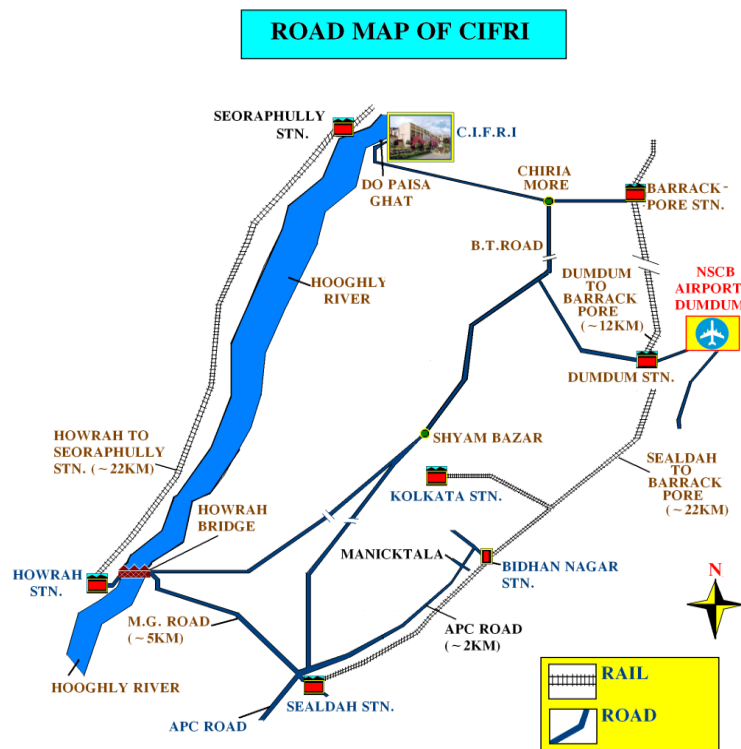
## Instructions to Participants

The training fee may be paid as cash or as Demand draft payable to 'ICAR UNIT – CIFRI, BARRACKPORE' payable at **State Bank of India, Barrackpore** branch (Code: 00029). Interested participants should not attach Demand draft with their application. Selected candidates may bring the same by hand.

The training programme is hands on training and a substantial portion involves self practice and developing skills with bioinformatics tools and 16S rRNA libraries. Selected participants are requested to bring their own laptop with internet connection.

## How to reach CIFRI

Barrackpore is located in North 24-Parganas district, 24 Km. away from Netaji Subhas Chandra Bose air port and Howrah Rly. Stn., and 22 Km away from Sealdah/ Kolkata Rly Stn. The Central Inland Fisheries Research Institute is located at Monirampur, 5 Km. away from Barrackpore Rly Stn. on Sealdah Main Rly. section. One can reach also from Howrah Rly. Stn., alighting at Sheoraphuly Rly Stn. (on Howrah-Burdwan Main section) and then by crossing the river at Sheoraphuli ghat (*alias* Do paisa ghat) to Manirampur and walk to the campus.



## Contact

For further query, please contact:

### Course Director & Training Coordinator

Sanjib Kumar Manna, Senior Scientist

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### Course Co-Directors

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