



Molecular Forensics & DNA Technologies (MFDT)

DNA Fingerprinting Services
DNA Barcoding Services
Training in DNA Fingerprinting and DNA Barcoding



**Rajiv Gandhi Centre for Biotechnology
Thiruvananthapuram, Kerala**

An autonomous institute of Government of India
Ministry of Science and Technology
Department of Biotechnology

We offer.....

DNA Fingerprinting for Human Identification

Species Identification in Wildlife Forensics

DNA Barcoding & DNA Fingerprinting of Plants, Animals and Microbes

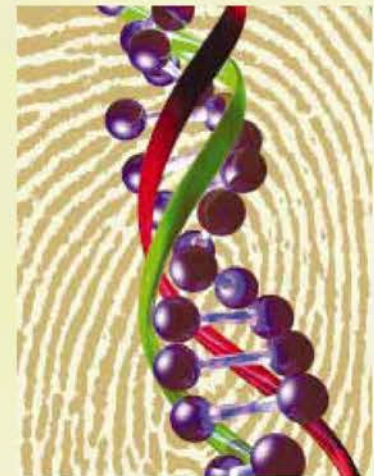
Short-term Training & Internship programs in DNA Barcoding & DNA Fingerprinting

DNA Fingerprinting for Human Identification

- In cases of maternity/paternity/relationship disputes
- In cases of alleged rape
- For linking suspects to biological evidence at crime scenes
- To identify deceased (accidents/mass disasters)
- To identify missing persons
- For child swapping cases in hospitals
- In personal identification for immigration purposes
- Database development

Samples

- **Maternity/Paternity disputes, child swapping cases, immigration purposes:**
Blood of father, mother and offspring, either fresh or on FTA card
- **Alleged rape cases and linking suspects to crime sites:**
Forensic exhibits viz., stained garments, vaginal swabs, body fluids & slides, and any other biological evidence from the crime scene along with blood (either fresh or on FTA cards) /tissue of the suspect and the victim
- **Deceased**
Blood (either fresh or on FTA cards) of the nearest relations viz., mother, father, husband, wife and children along with material objects of the deceased like bone, muscle tissue, teeth, hair with root, and other materials relevant to the case



Sampling procedure

Blood

Fresh blood will be collected from individuals concerned at MFDT lab on working days (Monday to Friday) between 9.00 am and 5.00 pm or blood can be sent on FTA cards. FTA cards and the procedure for collection and shipment of bloodstains will be provided upon request.

Forensic Exhibits

Blood stains: Wrapped with a dry paper or cloth

Teeth, hair with root, bones (intact): Wrapped with a dry paper or cloth (*completely burnt bones and ash are not useful for analysis*)

Vaginal swabs: The dried cotton swab should be placed in a clean dry glass vial/bottle

Muscle tissues: About 100 gm of muscle tissue should be sent in a clean glass bottle/plastic container with absolute alcohol or 0.9% normal saline (sold in medical shops) on ice or in crystal salt as a preservative

Important

Tissue samples should not be preserved in formalin.
All samples should reach as early as possible after collection.

Legal Requirements

Only requests from Courts of Law and Women's Commission will be accepted for paternity disputes. For crime investigations, requests will be accepted from Honourable Courts and State/Central crime investigation agencies.

Duly filled Forwarding note and Identification form should be sent along with the samples/brought with the persons who appear in person for blood donation.

Forms can be downloaded from RGCB website (www.rgcb.res.in)

Sample Delivery

All the samples should be properly sealed and sent to MFDT lab in the following address either by post or by person, under certification along with specimen seal for comparison. The samples should reach MFDT between 9.00 am and 5.00 pm on any working day (Monday to Friday).

**The Director,
Rajiv Gandhi Centre for Biotechnology,
Thycaud P.O., Thiruvananthapuram-695 014, Kerala, India.**

Result Dispatch

Report of the test will be dispatched to the forwarding authority directly within 90 days. No interim enquiries shall be entertained

Service Charges

RGCB charges only service fees for investigations.

Paternity testing

child, mother and alleged father) : Rs. 25,000/-

Each additional Individual : Rs. 7,000/-

Forensic samples : Rs. 12,000/- per sample

All Payments should be made in advance by DD drawn in favour of Director, RGCB, Thiruvananthapuram or paid in cash at the RFDF cash counter. Charges will not be refunded once the samples have been collected.

The DNA fingerprinting results will be dispatched only on receipt of the full payment

Deposing Evidence by DNA Expert from RGCB in the Honourable Court of Law

- Personal security of the expert has to be ensured from the time of his arrival until his departure.□
- Air or A/C 2-tier train fare and DA would have to be paid as per government rules and entitlement.□
- The expert should be escorted from and to the railway station/airport and accommodated in a government guesthouse or equivalent best available hotel.
- The payment is to be made by the forwarding agency to the expert before his departure from the Honourable court.
- RGCB may kindly be provided with a copy of the judgment of the Honourable Court if any, pertaining to the case.



Species Identification in Wildlife Forensics

Enforcement of Indian Wildlife (Protection) Act (1972) is often hampered due to the lack of reference materials and methods for accurate identification of animal and plant species in various wildlife offences. RGCB support the enforcement agencies by providing forensic evidences. We perform accurate identification of the species of origin from a variety of animal and plant tissues.



Samples

Meat (raw/cooked/dried) - preserved in crystal salt

Skin, hair, feather, tusk, nail, beak, musk, teeth, bone, horn – no preservatives required

Blood stained materials - dry

Commonly poached species identified

Wild boar (*Sus scrofa*)
Indian bison (*Bos gaurus*)
Sambar deer (*Rusa unicolor*)
Barking deer (*Muntiacus muntjak*)
Spotted deer (*Axis axis*)
Musk deer (*Moschus sps*)
Nilgiri langur (*Trachypithecus johnii*)
Indian spotted chevrotian (*Moschiola indica*)
Asian palm civet (*Paradoxurus hermaphroditus*)



Indian porcupine (*Hystrix indica*)
Bengal monitor lizard (*Varanus bengalensis*)
Lion-tailed macaque (*Macaca silenus*)
Jungle cat (*Felis chaus*)
Leopard (*Panthera pardus*)
Tiger (*Panthera tigris*)
Elephant (*Elephas maximus*)
Peacock (*Pavo cristatus*)
Malabar giant squirrel (*Ratufa indica*)
Golden jackal (*Canis aureus*)
Indian python (*Python molurus*)

Service charges Rs. 7,000 per sample

The leftover wildlife samples, if any, should be taken back within six months on receipt of the report by the concerned Court/Authority, after which it will be discarded

DNA Barcoding & DNA Fingerprinting of Plants, Animals and Microbes

DNA barcoding

- of animals using COX1 gene
- of plants using rbcL and matK
- of bacteria using 16S rRNA
- of fungi using ITS

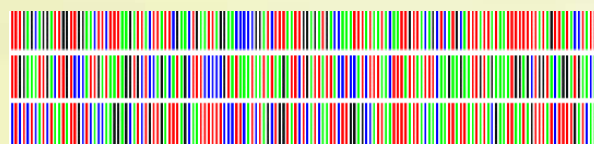
DNA fingerprinting using RAPD/ISSR/Microsatellite markers

- for genetic diversity studies
- for species/population/varietal discrimination
- for hybrid seed testing



Short-term training in DNA Fingerprinting and DNA Barcoding

- For academic and forensic personnel
- Hands on training



Internship program in DNA Fingerprinting and DNA Barcoding

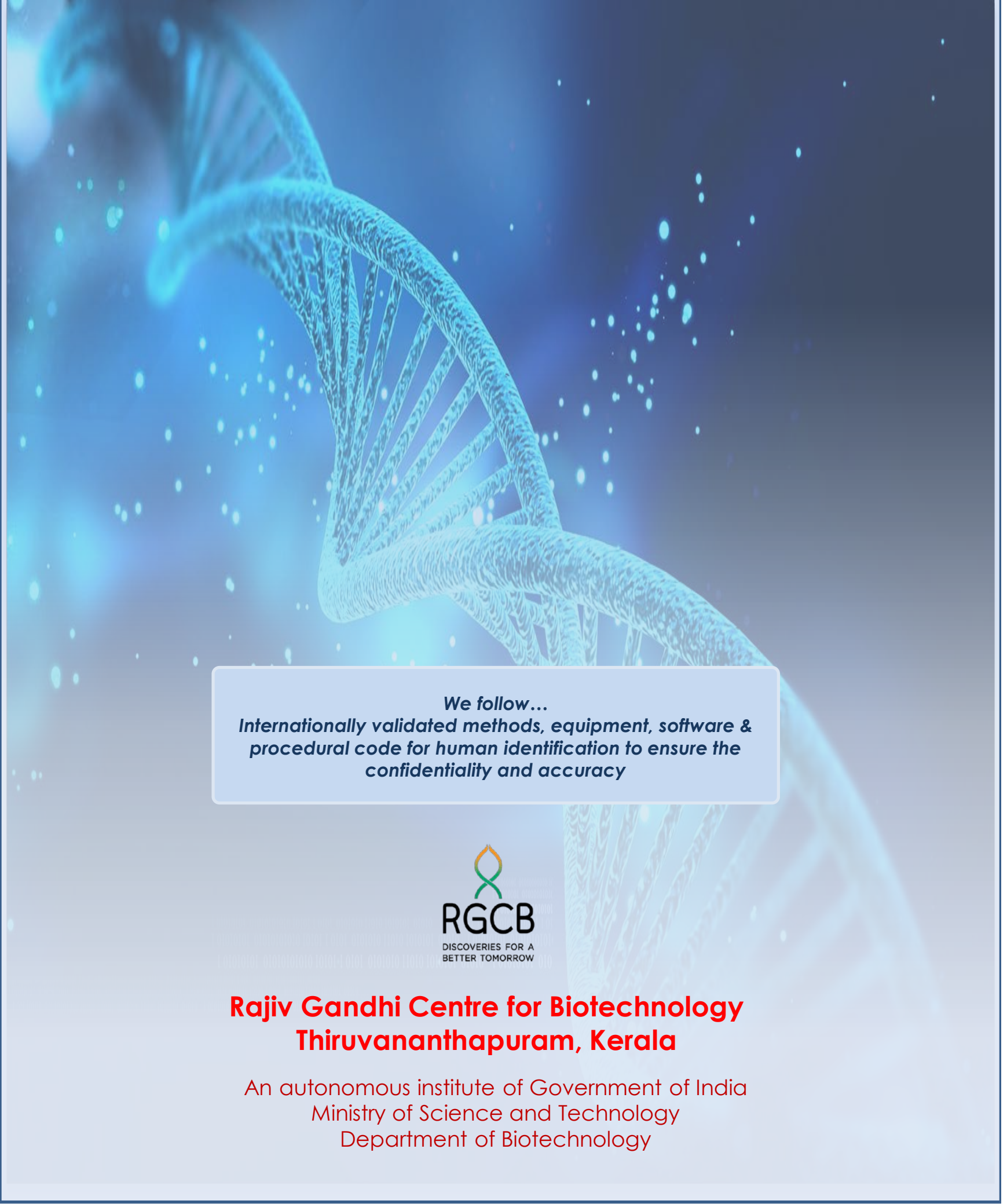
- Theory and hands on training various DNA Fingerprinting and DNA Barcoding techniques

Contact MFDT for service charges and other details

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Thycaud PO, Thiruvananthapuram – 695014,
Kerala, India
Ph: 0471-2340970, 2529568
E-mail: rfd@rgcb.res.in**

Storage of samples after analysis

Samples will be stored at MFDT for a maximum of 3 months after dispatch of results



We follow...
Internationally validated methods, equipment, software & procedural code for human identification to ensure the confidentiality and accuracy



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