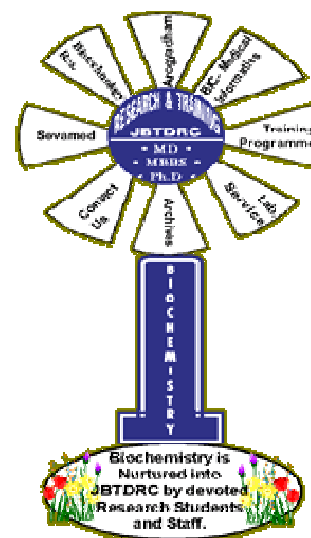


Jamnalal Bajaj Tropical Disease Research Centre & Department of Biochemistry

Jamnalal Bajaj Tropical Disease Research Centre (JBTDRC) is an advanced centre for Tropical Disease Research established in 1994 at Mahatma Gandhi Institute of Medical Sciences, Sevagram to expand the Institute's on going research programmes in tropical diseases such as filariasis and tuberculosis prevalent in this region. It is the result of sustained problem based research activity for more than two decades at MGIMS with support from ICMR, CSIR, DST, WHO/TDR, INDO US-STI and DBT. The main thrust will be to apply the latest and sophisticated techniques of hybridoma and genetic engineering in developing tools for immunodiagnosis, monitoring, immunoprophylaxis, surveillance and their application in the field for better management and control of these diseases. Foundation stone was laid for the centre on February 23, 1991 in the hands of former Prime Minister Shri Chandrasekhar. Late Dr. Sushila Nayar, our esteemed Founder Director who has been the source of inspiration and our Guide performed 'Bhoomi puja' for the centre on Feb. 12, 1992 in the gracious presence of Dr. U. Koko, former Regional Director, WHO - SEARO. A humble beginning in giving a shape to the centre started with the Bajaj Group giving financial support for the building. Shri Dhiru S. Mehta, President, KHS, was instrumental in getting this support and the construction of the building admeasuring 16,000 sq.ft. was completed in 1994. Our Founder Director Dr. Sushila Nayar, did 'Vastu puja' of the centre on July 11, 1994. The centre has now become fully operational under Dr. B. C. Harinath as its Director.



Research Thrust Areas:

Immunodiagnosics, Immunomonitoring, Immunoprophylaxis & Molecular studies Related to Filariasis and Tuberculosis

Facilities:

The centre has acquired sophisticated instruments such as FPLC – System (Pharmacia), Freeze drier (Virtis), ELISA Reader (ERBA), Cryopreservation equipment (Forma scientific), Thermocycler (PCR) equipment (Biometra), CO₂ Incubator (Forma Scientific), Orbital-Shaker (Forma Scientific), Ultracentrifuge (Kontron), Spectrophotometer (Gilford), Minicold Lab with Chromatography equipment, ELISA Reader (DynaTech), Walk in cold room, Gamma Isotope Counters, SDS-PAGE & Sub-marine multiphoresis electrophoresis apparatus, -70⁰C Freezers (Forma & Revco) and Millipore Biocel Water Purification System, Gel-Doc System (Kodak), Pellicone Ultrafiltration System (Millipore) and Liquid Scintillation Counter (Packard) for biomedical research. In addition the centre has National Repository for filarial parasites supported by DBT, insectarium and animal house with filarial animal models. *B. malayi* is being maintained in rodents (Swiss and Desert rats), the second institute in India.

Biochemistry Department:

The Department of Biochemistry whose sole piece of equipment was a small colorimeter way back in 1969 was nurtured over the past two decades by its dedicated team of staff and postgraduate students to its present level of sophistication. In their endeavour the department has enjoyed the continued support of the Institute's management and financial assistance from various funding agencies from time to time. Shri H. N. Abhyankar and Dr. Bharti Banerjee were looking after the Division of Biochemistry, which

was part of the Physiology Department at its inception. Dr. B. C. Harinath joined the department in April 1970 and the Department of Biochemistry became independent since 1974 and was nurtured by Dr. B.C. Harinath as the Head of the Department up to September 2002. Dr. M. V. R. Reddy, joined in 1980 took over the department as Professor & Head from October, 2002 with Dr. Satish Kumar, Professor (joined in 1996), Dr. Mrs. Neelam Garg, Professor (joined in 1993), Dr. Kalyan Goswami, Assoc. Professor (joined in 2005) and Dr. Kanchan Mohod, Lecturer (joined in 2008) are actively involved in the development of the Department.

Teaching:

The Department conducts teaching programme for MBBS, MD, and Ph.D. courses. The first batch of undergraduate students had passed out in 1970. The department has been recognized for Ph.D. in Science faculty since 1977 and for MD and Ph.D. in Medicine faculty since 1979 and 1985 respectively. Both Ph.D. and MD degrees were first awarded in 1980. As of now 24 students have been awarded MD (Biochemistry) and 22 students with Ph.D. Degrees.

Hospital Biochemistry Laboratory service:

Round the clock clinical biochemistry lab service with about 30 types of investigations including tests like lipid profile, CPK-MB, microalbuminuria are being provided by the department. ELISA based tests are being done for routine immunodiagnosis and immunomonitoring of filariasis and tuberculosis for this institute's and as well outstation patients. In addition to this, there is a facility for the hormone assays in collaboration with Thyrocare Diagnostics Pvt. Ltd., Mumbai. The lab is equipped with one fully automatic, two semiautomatic analysers and one electrolyte analyzer.

Research Publications in National & International Journals:

Total: 179

Patent Awarded:

1. "A process of isolation and purification of M. tuberculosis excretory-secretory (M.tb ES-31) protein for use in antibody based or antigen based assay for detecting the presence & monitoring M. tuberculosis infection" (Indian Patent No: 184510 granted on June 2, 2001).
2. "A process for the preparation of *Brugia malayi* microfilarial excretory-secretory (mf ES-22) glycoprotein" (Indian Patent Application No:224560 granted on October 17, 2008).

Patent Applied:

1. Antigen detection using antibodies.
2. TB diagnostics based on Mycobacterium tuberculosis Excretory Secretary antigens and their specific immunoglobulins.

National Conferences & Training Courses organised by Department of Biochemistry & JBTDRC

Conferences:

- 1989 – XVI Annual Conference of Indian Immunology Society
- 1994 – XX Annual Conference of Association of Clinical Biochemists of India
- 1997 – International Symposium on Recent Trends In Tropical Disease Research
- 2002 – International Symposium on Ayurveda, Yoga and Naturopathy & C.M.E. on Alternative System of Medicine for Positive Health and Chronic Aliments in Feb, 2002 (in collaboration with Department of Ayurveda).
- 2004 – National Symposium on Medical Informatics & C.M.E. on Hospital Information System (September 2004).
- 2005 – National Seminar on Biomedical Informatics (December, 2005)
- 2006 – National Symposium on Science of Holistic Living and Its Global Application & C.M.E. on Therapeutic Life Style Changes for Management of Chronic Health Problems (November 2006).

Training courses in Disease Diagnostics:

Thirteen National level short term training courses on ELISA and other immunodiagnostic techniques with special reference to tropical diseases have been successfully conducted with the support of Department of Biotechnology, Ministry of Science & Technology, New Delhi and JBTDRC in 1987, 1989, 1991, 1993, 1995 1996, 2001, 2002, 2003, 2004, 2005, 2006 and 2007.

Awards:

Amrut Modi award	1986
Kurup award (SBC)	1991
Awadesh Saran Oration award (ACBI)	1992
Dr. B. C. Roy award (MCI)	1994
GS Seth Medical College &	2004
KEM Hospital Oration award (ACBI)	

1980: 10th year Assessment

The evaluation committee 1980 is particularly impressed with the Biochemistry department, where a considerable amount of research activity of a very high standard in the field of immunology of filariasis is being carried out. This work is probably the best in the field in the country and will easily measure upto international standards. This department has demonstrated that the rural location of the institute is no deterrent to the development of scientific excellence.

(Excerpt from a report of 10 years' evaluation committee consisting of Dr. K. L. Wig, Dr. C. Gopalan & Dr. H. I. Jhala, 1980).

1995: 25th year Assessment

'Department of Biochemistry is actively involved in research. In this department research on the diagnostic techniques for filariasis has been going on for several years and has received due recognition from national and international organizations. The filarial research in this department stands out prominently.

(Excerpt from a report of 25 years' evaluation committee consisting of Prof. P. N. Chhuttani, Prof. B. K. Anand, Prof. B. N. Tandon & Prof. K. S. Chugh, 1995)

1998: An Assessment by Institute Development Committee

This Dept. has developed filariasis kit after two decades of excellent work in immunological diagnosis of filariasis and getting enquiries from endemic areas for the test kits.

(Excerpt from development committee meeting minutes in 1998, consisting of Prof. Dave, Prof. J. L. Gupta, Prof. Manu Kothari, Dr. Ashok Vaidya & Dr. G. M. Taori)

Current Research Projects:

S. No.	Title	Agency	Grant (lakhs)
1.	Bioinformatics Centre under BTISnet Programme	DBT	13.27
2.	Tropical Disease Research	KHS	3.00
3.	Establishment of Repository for filarial parasites and reagents	DBT	76.00
4.	FIST Programme to strengthen research & postgraduate teaching in the department	DST	1.82
5.	Isolation and evaluation of recombinant filarial antigens of diagnostic importance	ICMR	3.53
6.	DBT Programme support for production of diagnostics and development of prophylactics for neglected infectious diseases with filariasis as a model	DBT	3.47