



**White Paper on
Pharmaceutical Research Institutes in India**

Expertise ► Collaboration ► Innovation ► Results

Pharmaceutical Research Institutes in India

Executive Summary

This paper provides the profiles of some of the leading medical and drug research institutes in India. Thirteen such institutes, including hospitals, educational institutes and research centres, have been profiled in this document:

No.	INSTITUTE	Location
1	All India Institute of Medical Sciences (AIIMS)	New Delhi
2	Christian Medical College (CMC)	Vellore
3	Center for DNA Fingerprinting and Diagnostics (CDFD)	Hyderabad
4	Institute of Genomics and Integrative Biology (IGIB)	Delhi
5	Institute of Microbial Technology (IMTECH)	Chandigarh
6	National Institute of Immunology (NII)	Delhi
7	National Institute of Malaria Research (NIMR)	Delhi
8	National Institute of Pharmaceutical Education and Research (NIPER)	SAS Nagar
9	Tata Memorial Centre, Advanced Centre for Treatment, Research & Education in Cancer (ACTREC)	Navi Mumbai
10	The Centre for Cellular and Molecular Biology (CCMB)	Hyderabad
11	The National Centre for Cell Science (NCCS)	Pune
12	The National Chemical Laboratory (NCL)	Pune
13	Tuberculosis Research Centre (TRC)	Chennai

The profiles of these institutes include areas of specialisation, staffing and facilities, national and international publications, patents filed and granted and other highlights of the institutes.

Among the diverse areas of research conducted in these institutes, nano-based drug delivery research, stem cell research, oncology, tuberculosis and HIV research, immunity and infection-related research, recombinant DNA technology for drug discovery, genomics and bio-informatics are noteworthy.

Funding for the research comes from a range of organisations such as the Department of Science and Technology and Department of Biotechnology, Govt. of India, WHO, Johns Hopkins University, Oxford University, GlaxoSmithKline and Pfizer. Further details have been provided within this document. Most of these institutes are interested in collaborative and sponsored research with pharmaceutical – examples of these have also been profiled.

TRC Chennai and CCMB Hyderabad have been chosen as Centres of Excellence by international agencies such as NIH. IMTECH Chandigarh houses Microbial Type Culture Collection & Gene Bank (MTCC), an affiliate member of the World Federation of Culture Collection (WFCC) and registered with World Data Centre for Micro-organisms.



Kinapse believes that interesting collaboration opportunities may exist in India for global pharmaceutical companies.

1.

Name

All India Institute of Medical Sciences (AIIMS), New Delhi.

Area of Specialisation

AIIMS performs investigations in neurosciences, genetics and computer simulations of hormone-receptor interactions. AIIMS also undertakes clinical and epidemiological studies on the prevention and treatment of national health problems. AIIMS is working on applying advanced techniques such as DNA recombinant technology, immunology and electron microscopy to study the common diseases in India such as leprosy, malaria, tuberculosis, diabetes, diarrhoea, hepatitis, fluorosis and iodine deficiency.

AIIMS also has large internationally funded programmes on goal-oriented research in reproduction aimed at widening the variety of acceptable contraceptives. It is a WHO Collaborating Centre for Research in Human Reproduction. The other centres in India collaborating with WHO for human reproduction are Institute for Research in Reproduction, Mumbai and Postgraduate Institute of Medical Education and Research Department of Obstetrics and Gynaecology, Chandigarh.

Staff Strength and Facilities

AIIMS has about 479 faculty members

Publications and Patents

Very extensive publications.

Highlights

AIIMS has marked a global first in pioneering stem cell medicine by the "injection method". The stem cell therapy was conducted over 18 months, from February 2003 to January 2005 on 33 heart patients, with the help of Positron Emission Tomography (PET) technique showing successful results. The study hasn't as yet been published in a medical journal.

AIIMS has developed a highly sensitive and specific ELISA system for detecting HIV antibodies. It costs less than half of the other common test kits, and has detected many early cases which the imported kits could not. AIIMS has been one of the Reference Centres for HIV/AIDS since 1986, and the National HIV Reference Centre since 1992.

AIIMS's Primate Implantation Biology Laboratory has been recognized as a non-US Centre for Contraceptive Research and Development Programme of the Andrew Mellon Foundation and is also one of the 13 such Centres in the world supported on a long-term basis by the Rockefeller Foundation.

Issues remain over autonomy - the AIIMS director and the AIIMS president (the health minister of India) are at loggerheads over the issue of its autonomy. The Delhi High Court is seeking to resolve the dispute.

2.

Name

Christian Medical College (CMC), Vellore, Tamil Nadu

Area of Specialisation

CMC is a 106-year old institution that has medical, nursing and paramedical courses apart from having a 2100-bed tertiary-care hospital and a 200-acre medical college campus.

National and international funding agencies currently support research in fields including population studies on growth and development, basic science research in organ transplantation, HIV-AIDS, invasive bacterial infections, diarrhoeal disease, haematological malignancies, bone marrow transplantation, and rehabilitation of spinal cord injuries.

Staff Strength and Facilities

CMC Vellore has approximately 700 doctors.

In July 2005, IDTRC (*Infectious Disease Training and Research Center*) and BMPiIL (*Professor Benjamin M. Pulimood Infection and Immunity Laboratory*) were operationalised. These facilities are the first of their kind in South Asia. IDTRC will be involved in the training of national and international physicians in Infectious Diseases, HIV Medicine, Tropical Diseases, Healthcare Epidemiology and quality improvement services. BMPiIL will have facilities to conduct anti-infective research, study antimicrobial pharmacokinetics, monitor patient immune status, establish rapid diagnosis of emerging infectious diseases, and track pathogens responsible for causing hospital infections. Supporters include: National AIDS Control Organization (NACO), WHO, Haukeland University, Norway, Sexual Health Resources Center, Friends of Vellore, USA and UK, CIPLA Ltd, Pfizer Ltd, and others.

Department of Biotechnology, Govt. of India, and CMC have joined hands to set up the “CMC-DBT Centre for Stem Cell Research” at Vellore. Funded by the Department of Biotechnology, the centre aims to promote basic and translational stem cell research. A technology has been established for collection, purification and haplo-identical haematopoietic stem cell transplantation. Similar studies are also being conducted at the National Centre for Cell Science (NCCS), Pune and the Indian Institute of Science (IISc.), Bangalore.

Publications and Patents

Not researched.

Highlights

During 2004, 82 new projects were approved by the Research committee for onward transmission to external funding agencies such as Indian Council of Medical Research, Department of Science and Technology, Department of Biotechnology, Johns Hopkins University, Oxford University, Fogarty, GlaxoSmithKline, Pfizer, WHO, Council of Scientific and Research, INCLIN, etc. The CMC Fluid Research grants, besides supporting 351 ongoing research projects, sanctioned Rs.2.4 million for 92 new research projects during the year.

The Department of Biotechnology under Ministry of Science & Technology is the nodal funding agency for supporting the stem cell R& D programme. About £1 million has been spent on stem cell research in India in the last two years. It has been decided to promote city clusters programmes in the country, initially in Delhi, Vellore, Hyderabad, Pune and Bangalore. The aim of the clusters is to share information, explore collaboration with clinicians and discuss emerging policy issues. A virtual network of centres is also under consideration.

In June 2004, CMC signed a MOU (Memorandum of Understanding) with the National University of Singapore (NUS). The MOU focuses on collaborative research; student, clinical and academic exchanges; and joint seminars.

CMC's Endocrinology Department is the first medical college in India to receive a World Diabetes Foundation (WDF) grant, to train a team of Doctors, Nurse Educators.

3.

Name

Center for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad.

Area of Specialisation

CDFD is an autonomous institution supported by the Department of Biotechnology (DBT), Govt. of India. CDFD is engaged in providing services and carrying out basic and applied research in Bacterial Genetics, Bioinformatics, Cancer Biology, Computational Biology, Computational and Functional Genomics, Immunology, Mammalian Genetics, Molecular Cell Biology, Molecular Genetics, Molecular Oncology, Molecular Virology, Structural Biology and Transcription.

CDFD's major focus areas include DNA fingerprinting, diagnostics, genome analysis and cytogenetic, bio-chemical and molecular diagnosis.

Staff Strength and Facilities

There are presently around fifteen groups working on diverse research areas in CDFD.

CDFD is equipped with state-of-the-art instrumentation and computing infrastructure to facilitate working in frontier areas of life sciences research.

The National Genomics and Transcriptomics Facility (NGTF) is a Biotechnology services core group set up in August, 2002, providing on demand services in the areas of automated DNA sequencing, Genotyping and Real time PCR. NGTF has initiated services in the area of cDNA microarrays, mainly for Tuberculosis and cancer.

The genetic diagnostic laboratory at CDFD provides genetic diagnostic services, carries out research work on molecular pathophysiology of neural tube defects, homocysteine metabolism in health and disease and role of genetic factors in male infertility.

Publications and Patents

CDFD lists 58 publications in 2004-2005 alone.

Highlights

Bioinformatics at CDFD is the national node for European Molecular Biology network and for Asia Pacific Bioinformatics Network for India. This centre is also recognized as Sun Microsystems Centre of Excellence in Medical Bioinformatics. The research interests of this centre include:

- Genome analysis, Functional Genomics & Systems Biology
- Data mining and analysis of DNA Micro array, Proteomics and Clinical data
- Analysis of Protein sequence, structure, motion and evolution
- Molecular interactions and Drug Design
- Development of Computational Tools and Databases for Biologists

Along with L V Prasad Eye Institute and Hyderabad Eye Research Foundation, CDFD has been looking at the molecular basis of primary congenital glaucoma, which, if not treated, leads to childhood blindness. CDFD is an intellectual partner in the global effort to sequence and map the silkworm genome and has provided molecular markers (micro-satellite markers) to generate a physical map - the first step in genome sequencing.

CDFD is networking with hospitals, tuberculosis centres and tuberculosis research institutes within and outside the country to set up a National Epidemiological Databank of Mycobacterium tuberculosis genotypes based on whole genome fingerprinting of clinical isolates of tuberculosis, perfected at CDFD.

4.

Name

Institute of Genomics and Integrative Biology (IGIB), Delhi.

Area of Specialisation

IGIB, a premier laboratory under the Council of Scientific and Industrial Research (CSIR), carries out R&D activities in areas such as allergy and infectious diseases, molecular pathogenesis and recombinant DNA technology with focus on Genomics and Bio-informatics.

Discovery and collaborative research is conducted in allergy and infectious disease, genomics and molecular medicine, genomics and molecular medicine, genome informatics, proteomics & structural biology, comparative genomics & gene expression profiling, bioactive molecules & technology development.

Staff Strength and Facilities

IGIB has a 43 strong team of scientists and 131 researchers (November 2005).

Partnering with Hewlett-Packard (HP) has helped IGIB to achieve further advancements in research, speedy progress in the discovery of new drug target and predictive medicines for complex disorders. This partnership has also helped IGIB to manage large volumes of data created by computational analysis. HP's Unified Cluster Portfolio provides a common implementation across multiple operating systems.

Publications and Patents

IGIB lists 130 publications in 2004-05. It has 23 patents granted in India and 31 in foreign countries from 2000 to 2006.

Highlights

IGIB has partnered with several academic and health institutions for collaborative research. Some of these are AP Chest Hospital, Hyderabad (for allergy), Sir Ganga Ram Hospital, New Delhi (for diabetes, neurological disorders and asthma), Nicholas Piramal India Limited, Mumbai, Sita Ram Bhartiya Institute of Science & Research, New Delhi, IIT, Delhi and Institute of Medical Microbiology and Immunology University of Aarhus, Denmark.

5.

Name

Institute of Microbial Technology (IMTECH), Chandigarh.

Area of Specialisation

IMTECH is a premier biology institution that carries out integrated research & development in the emerging areas of biotechnology and microbiology. IMTECH specialises in fermentation technology and applied microbiology, cell biology and immunology, molecular biology and molecular genetics, protein science and engineering.

Staff Strength and Facilities

IMTECH has 47 researchers/ scientists.

Microbial Type Culture Collection & Gene Bank (MTCC), a national facility, established in 1986, is housed at IMTECH. MTCC is an affiliate member of the World Federation of Culture Collection (WFCC) and is registered with World Data Centre for Micro-organisms. Its main objectives are to act as a depository to supply authentic microbial cultures and related services to scientists in research institutions, universities and industries. MTCC has five sections, namely, actinomycetes, bacteria, fungi, yeasts and plasmids and together holds nearly five thousand cultures in its collection.

Biochemical Engineering Research & Process Development Centre (BERPDC) is one of India's largest and most sophisticated centres for research in technology development, process optimization and scale-up in the field of Biochemical Engineering, housed in IMTECH. The Centre also provides facilities for evaluation and bench marking of any indigenous or imported fermentation process know-how. BERPDC undertakes the following: Strain Improvement, Feasibility Studies of Fermentation Processes, Media and Process Optimization, Fermentation Scale-up, Downstream Processing.

The Bioinformatics Centre (BIC) at the IMTECH, Chandigarh, is one of nine centres created under the program Biotechnology Information Systems (BTIS) by department of biotechnology (DBT), Govt. of India. This centre is actively involved in developing software packages in different fields of biosciences and making them available to the public.

Publications and Patents

IMTECH has released over 75 research publications in 2005 and 2006. So far 20 and 14 patents, abroad and in India respectively, have been granted to IMTECH.

Highlights

MTCC is recognised by WIPO (Geneva) as an International Depository Authority, the first in India, 7th in Asia and 34 in the world to acquire this status. Under the Budapest Treaty, deposit of micro organisms in MTCC will be recognised to fulfil the requirement of patent procedure in 55 countries.

Ranbaxy, Dabur India Limited, Cadila Pharmaceutical Labs, Panacea Biotech and Morepen Labs are a few of the companies that have used Contract Research/ Consultancy/ Process Development facilities in IMTECH.

IMTECH also has global collaborations with organisations in the USA, Switzerland, France, Spain and Poland for specific projects.

6.

Name

National Institute of Immunology (NII), Delhi.

Area of Specialisation

The National Institute of Immunology (NII) is an autonomous institution supported by the Department of Biotechnology, Govt. of India. The Institute is committed to advanced research addressing the basic mechanisms involved in body defence, host-pathogen interactions and related areas with a view to contribute to the creation of an internationally competitive intellectual knowledge base. To this end, the Institute follows a two-pronged strategy of linking rigorous fundamental research with the pragmatic pursuit of emerging application possibilities in entrepreneurial partnerships.

The major areas of research at NII are Immunity and Infection, Gene Regulation, Molecular Design and Reproduction and Development.

Staff Strength and Facilities

The Bioinformatics Centre (BIC) at NII has been set up by the Department of Biotechnology as one of the ten Distributed Information Centres under the Biotechnology Information System (BTIS) program. Apart from carrying out research in computational and structural biology, the Centre also serves as an information source in the field of molecular biology and immunology for researchers all over the country. BIC, NII has acquired a number of computerized databases and software applications to cater to the requirements in the field of molecular biology and immunology.

NII receives an annual funding to the tune of Rs. 8-9 crores (~£1 million) from the government. On specific projects, it also seeks national and international competitive funding.

Publications and Patents

A total of 59 peer-reviewed and 18 review/ proceedings papers have been published. Eight patents have been filed in India and Patent Cooperation Treaty (PCT) countries. 29 patents were granted abroad from 1988 to 2003 and 16 patents granted in India from 2000 to 2005.

Highlights

NII has identified five key genes that enable Mycobacterium tuberculosis to acquire the iron it needs to grow and promote the infection in humans. Experts say targeting genes within this cluster would help evolve better drugs to cure TB, which affects 15.4 million people worldwide.

7.

Name

National Institute of Malaria Research (NIMR), Delhi

Area of Specialisation

NIMR is one of the institutes of the Indian Council of Medical Research, an autonomous body under Ministry of Health & Family Welfare, Govt. of India. The primary task of the Institute is to find short term and long term solutions to the problems of malaria through basic, applied and operational field research.

Major areas of research carried out over the years by MRC include mosquito fauna surveys, development of simple identification keys for adults and larvae, development of genetic maps using phenotypic and biochemical markers for important malaria vectors, cytotaxonomic studies for the identification of species complexes, laboratory and field studies to examine the biological variations among sibling species, development of molecular identification techniques for sibling species, monitoring of insecticide resistance through space and time, evaluation of new insecticides and biological control agents for vector control and reduction in malaria, evaluation of herbal products as mosquito repellents and larvicides, GIS and RS as tools to map the distribution and breeding site delineation of malaria vectors, etc.

The Centre has collaborations with the R&D industry in evaluating new drugs, insecticides and other tools.

Staff Strength and Facilities

NIMR has over 50 scientists.

Publications and Patents

NIMR listed over 79 publications in 2001-2002.

Highlights

Over 70 extramural, collaborative and sponsored research projects have been undertaken by NIMR. Some of the collaborating international organisations/ bodies are Cooperative American Relief Everywhere, Department for International Development, U.K., International Centre for Genetic Engineering & Biotechnology, Swedish International Development Agency, United Nations Development Programme, and World Health Organization.

8.

Name

National Institute of Pharmaceutical Education and Research (NIPER), Punjab.

Area of Specialisation

National Institute of Pharmaceutical Education and Research (NIPER) is an autonomous body set up under the aegis of Ministry of Chemicals and Fertilizers, Government of India. The Institute aims to provide leadership in pharmaceutical sciences and related areas not only within the country, but also to the countries in South East Asia, South Asia and Africa. NIPER is a member of Association of Indian Universities and Association of Commonwealth Universities. The Government of India has declared NIPER as an 'Institute of National Importance'.

Staff Strength and Facilities

NIPER has strength of 33 scientists.

NIPER has a central animal facility, national bioavailability centre, pharmacological and toxicological screening facilities, computer aided drug design laboratory, peptide synthesis and research laboratory and combi chem research laboratory.

NIPER has subscribed to the Scientific and Technical Information Network (STN), a leading and comprehensive scientific online information service giving access to over 200 scientific and technical databases of chemistry, pharmaceutical sciences and biotechnology.

Publications and Patents

NIPER lists over 150 publications in 2005 and 54 patents in all.

Highlights

NIPER started work in the area of nanotechnology, specifically its application in drug delivery in late 2003. In May 2006, NIPER set up a dedicated Centre for Pharmaceutical Nanotechnology for carrying out nano based drug delivery research in the country. The centre has been accredited by WHO and is one of the two centres in the world for conducting bioequivalence studies of the fixed dose combinations of anti-tubercular drugs. The centre, in close collaboration with hospitals around Chandigarh, is also involved in conducting pharmacokinetics studies in patient population.

In December 2001, Ranbaxy Laboratories Limited (RLL) signed an agreement with NIPER for a collaborative research project on "solubility, permeability enhancement studies".

9.

Name

Tata Memorial Centre, Advanced Centre for Treatment, Research & Education in Cancer (ACTREC), Mumbai

Area of Specialisation

The Advanced Centre for Treatment, Research and Education in Cancer (ACTREC) is a new state-of-the-art R&D satellite of the Tata Memorial Centre (TMC) established by the Department of Atomic Energy to focus on research into cancers relevant to India and South Asia.

Therapeutic divisions at ACTREC include Surgical Oncology and Radiation Oncology.

ACTREC has two wings: a basic research wing, CRI, and a clinical research wing, CRC. Research at CRI is broadly grouped under Biochemistry & Cell Biology, Chemical Carcinogenesis, Chemotherapy, Genetic Engineering, Immunology, Neuro-oncology, Tobacco Carcinogenesis and Virology. CRC offers a 50 bed research hospital which is fully equipped with state-of-the-art diagnostic & therapeutic facilities.

On-going research studies at ARTREC focus on human cancers relevant to the Indian subcontinent, and address basic research queries using animal models and cells in tissue culture.

Staff Strength and Facilities

The hospital at ACTREC is fully equipped with all required diagnostic and therapeutic facilities.

Infrastructure facilities include Animal House, Administration, Anti Cancer Drug Screening, Bioinformatics, Common Facilities, Common Instruments Room, DNA Sequencing & Mutation Analysis, EBV / Cell Immortalisation, Electron Microscope, Expression Profiling, Flow Cytometry, Histology, Laser Confocal Microscope, Library, Photography, Science Communication & Professional Education (SCoPE).

The Centre is committed to carry out clinical trails under GCP conditions, including Phase I / II trials for investigational new drugs. In addition, the Centre specialises in Cancer Genetics including counselling and genetic testing and Molecular Pathology.

Publications and Patents

Patents include

- An alternate method for synthesis of methotrexate
- Isolation of topoisomerase inhibitor podophyllotoxin
- A 2kb-nucleotide sequence specific for the early detection of oral cancer.

Highlights

The Tata Memorial Centre in Mumbai has won the 2006 global award as the "Outstanding Cancer Organisation" for its excellence in cancer control within and beyond India's borders.

A national facility for screening anticancer drugs using a panel of human malignant cell lines has recently been established at ACTREC. This facility also undertakes in vivo drug testing using murine tumours and human tumour xenografts in mice.

The Centre was the first to develop transgenic mice. Further studies have revealed that this mouse model, carrying a gene for a growth factor modulator, can serve as a good animal model for squamous cell carcinoma.

Other studies involve cultivation of Indian isolates of HIV-1 and HIV-2, and in-depth study of HIV-2 biology with a view to develop a retroviral vector for gene transfer. A sero-diagnostic Western blot kit for HIV-1 and HIV-2 has been developed with support from Department of Biotechnology (DBT) and industry partner.

10.

Name

The Centre for Cellular and Molecular Biology (CCMB), Hyderabad.

Area of Specialisation

The ongoing research programs at the CCMB are in three major categories - basic research in the frontier areas of modern biology, research relevant to societal needs and application-oriented research towards commercialisation. These include the areas of biomedicine & diagnostics, evolution & development, gene regulation in prokaryotes and eukaryotes, host-parasite interactions, membrane biology, protein structure, bioinformatics, functional genomics, theoretical biology, etc.

CCMB uses recombinant DNA technology for drug discovery through transgenic and gene knock-out animal model. CCMB offers to support Pharmaceutical companies in drug discovery programs using the transgenic fruit fly model and gene knock-out mice model.

Staff Strength and Facilities

CCMB has more than 30 scientists/researchers.

CCMB houses a Bioinformatics Centre (BIC), sponsored by Dept. of Biotechnology, Govt. of India, to serve as a part of national network providing biological information by accessing several scientific databases from India and abroad, through the National Informatics Centre (NIC), New Delhi.

CCMB has the following facilities: Confocal Microscopy, Automated DNA Sequencer, Digital Imaging, and Interactive Graphics Molecular Modelling Facility.

Publications and Patents

Responsible for 1200 research papers and 15 patents (from 1998 to 2005) in India and abroad, CCMB played a key role in development of India's first recombinant DNA-based vaccine.

Highlights

CCMB has been chosen as a Centre of Excellence by UNESCO Global Network for Molecular and Cell Biology (MCBN) and has been designated as a South Centre for Excellence for Research and Training by the Third World Academy of Sciences (TWAS), Italy. Many international and national awards have come to CCMB including the CSIR Technology Award (twice) and FICCI Award for outstanding achievements in Science & Technology.

CCMB has collaborated with the international agencies such as the Imperial Cancer Research Fund (UK), Volkswagen Foundation (Germany), India Japan Science Council and the University of Ryukyus, Okinawa (Japan), National Institutes of Health (USA) and Centre Nationale de la Recherche Scientifique (CNRS) and the Pasteur Institute (France).

CCMB has undertaken a collaborative research projects with Shantha Biotechnics, Hyderabad, Dr Reddy's Research Foundation, Hyderabad, Bangalore Genei, Bangalore, EID Parry, Chennai, Dabur Research Foundation, Delhi and Biological Evans, Hyderabad.

CCMB has ongoing projects currently being funded by the following International agencies: Human Frontier Science Program Organization (HFSP), Indo-French Centre for the Promotion of Advanced Research (IFCPAR), Indo-Japanese Society for Promotion of Science (I-ISPS) and National Institute of Health (NIH).

11.

Name

The National Centre for Cell Science (NCCS), Pune

Area of Specialisation

NCCS provides basic research in the areas of cancer biology, cell biology, signal transduction, diabetes, insect molecular biology, immunology, genomics and proteomics.

Staff Strength and Facilities

NCCS has 26 Scientists and over 70 Research Fellows.

Facilities at NCCS include Experimental Animal Facility, Fluorescence Activated Cell Sorter (FACS), Confocal Laser Scanning Microscope (CLSM), and Automated DNA Sequence Analyzers

Publications and Patents

NCCS lists over 80 publications 2004 onwards.

Highlights

The National animal cell repository at National Centre for Cell Science is the only repository that houses human and animal cells in India. The NCCS repository serves to receive, identify, maintain, store, cultivate and supply animal and human cell lines and hybridomas.

During the year 2000 – 2001, the cell repository of NCCS supplied 515 cell cultures comprising of 148 different cell types to 102 research organizations in the country. The repository has initiated programs to develop, immortalise and characterize cell lines from different tissue/tumour types.

NCCS has active collaborations with international institutions like London School of Hygiene and Tropical Medicine; Medical Research Laboratory, University of Hull, UK; Department of Molecular Genetics, Albert Einstein College of Medicine, Bronx, NY, USA.

12.

Name

The National Chemical Laboratory (NCL), Pune

Area of Specialisation

NCL is an interdisciplinary research centre with interest in polymer science, organic chemistry, catalysis, materials chemistry, chemical engineering, biochemical sciences and process development.

The following is a list of important resource centres created and maintained at NCL: Catalyst Pilot Plant, Center for Materials Characterization, Combi Chem-Bio Resource Center, National Collection of Industrial Micro-organisms, Central NMR Facility, Library, Digital Information Resource Center, and Research Support Services. Further details about the centres and the facilities therein can be found at NCL website.

Staff Strength and Facilities

NCL has 200 scientific staff.

The facilities at NCL include pilot plants, sophisticated instruments, information infrastructure, workshop & glass blowing.

Publications and Patents

NCL publishes the second largest number of papers in chemical sciences in India (~ 430) and files a large number of patents, in India (~60) and abroad (~60).

Highlights

In April 2005, Ranbaxy Laboratories Ltd (Ranbaxy) entered into a collaborative agreement with the National Chemical Laboratories (NCL), Pune and the Department of Science & Technology (DST) in the area of New Drug Discovery to synthesize novel anti-infective drugs. A joint research committee, comprising members from all the partnering organisations has been set up to monitor and direct the course of the research.

13.

Name

Tuberculosis Research Centre (TRC), Chennai.

Area of Specialisation

TRC is one of the International Centres for Excellence in Research (ICER), funded by NIAID/ NIH U.S.A. The centre recently established a HIV Vaccine Trial Centre funded by IAVI, New York.

The Laboratory of Parasitic Diseases of NIAID/NIH, USA under its intramural programme is supporting the development of ICER in partnership with leading laboratories of the world with an objective of Promoting collaborative research in infectious and allergic diseases between the ICMR and the NIH in particular and other Indian and international scientists in general.

Staff Strength and Facilities

TRC has 40-50 scientists/ researchers.

In February 2006, a new HIV vaccine trial centre and patient care facility with an investment of USD 2.5 million has been developed at the Tuberculosis Research Centre (TRC), Chennai. The centre will develop a Modified Vaccine Ankara – II to protect people not infected by HIV from contracting HIV/AIDS. This vaccine will target the HIV-I subtype C, the most predominant HIV variety in India.

Publications and Patents

TRC lists over 650 publications as of July 2005.

Highlights

More recently, in view of the close interaction between the two diseases, tuberculosis and HIV, TRC has also actively involved itself with research into HIV. TRC is one of the premier institutes of ICMR with excellent human resources to carry out research in a multi-disciplinary approach. TRC complements the National AIDS Control Programme by contributing to national efforts for preventing and controlling HIV/AIDS in the country and providing care and support to people living with HIV/AIDS. TRC is the trial site for the Phase I preventive AIDS vaccine trial in India.

Summary of Kinapse services

Kinapse provides specialist services to life sciences R&D organisations, with specific expertise in:

- R&D process and organisation design
- Resource planning and management
- Performance management including performance scorecards and benchmarking
- Change and programme management
- Product, Market and Company research and analysis.



Our business consulting professionals blend extensive consulting experience with senior R&D management experience.

Our onshore-offshore operating model allows us to bring together the very best people in virtual teams, who are passionately committed to the success of their clients. Our lean operations in Europe, and staff located in the Kinapse Offshore Delivery Centre in Delhi enable us to deliver highest value services at unbeatable blended fee rates for R&D consulting.

In addition, Kinapse provides a suite of specialist information processing services including, clinical trial publishing, clinical data analysis, regulatory licence maintenance and scientific communications.

The Kinapse team has worked for the following major Pharmaceutical R&D Companies and related organisations: Amgen, AstraZeneca, Bayer, Bristol-Myers Squibb, CMR International, EMEA, Genentech, GlaxoWellcome, GlaxoSmithKline, Johnson & Johnson, MHRA, Novartis, Pfizer, Roche, Schering AG, SmithKline Beecham and Wyeth.

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