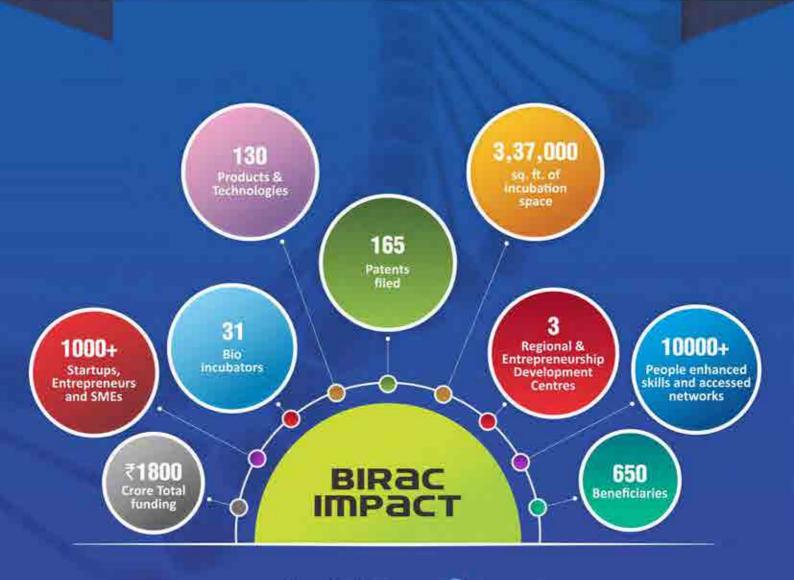
About BIRac



BIRAC is a not for profit section 8, schedule B, public sector enterprise, set up by Department of Biotechnology (DBT), under Ministry of Science & Technology, Government of India as an interface agency to strengthen and empower the emerging biotech enterprises to undertake strategic research and innovation, addressing high unmet need through development of affordable products and technologies.

BIRAC's aim is to play a transformative and catalytic role in nurturing Biotech Innovation Ecosystem in the country and building \$100 Billion bioeconomy by 2025.



Aligning Partnerships for National & Global Impact



Partnerships For Networks, Platforms & Markets Access

WISH-BIRAC-Lords Education and Health Society (LEHS), Through its WISH Initiative: Scaling Innovations through Testing Beds

BIRAC - Tekes Finland: Enhancing Competitiveness

BIRAC-TISS (Tata Institute of Social Sciences): Mentoring innovators and Assessing impact

BIRAC-ICMR (Indian Council of Medical research): Enhance Competitiveness of Biotech Startups

BIRAC AcE Fund Partners: Funding Oxygen for the Next Level

BIRAC-TIE (The Indus Entrepreneurs): Platform for Global Networking

BioCubaFarma: Transfer of technologies and commercialization of innovative healthcare products

BIRAC-ALEAP; BIRAC -TIE: Promote Women Entrepreneurship

Partnerships: Value Addition







BIG is flagship programme of BIRAC, which provides the right admixture of fuel and support to young startups and entrepreneurial individuals. BIG is the largest early stage biotech funding programme in India. Funding grant of upto INR 5 Million (USD 70,000 approx) to best in class innovative ideas to build and refine idea to proof-of-concept



BIG PARTNERS



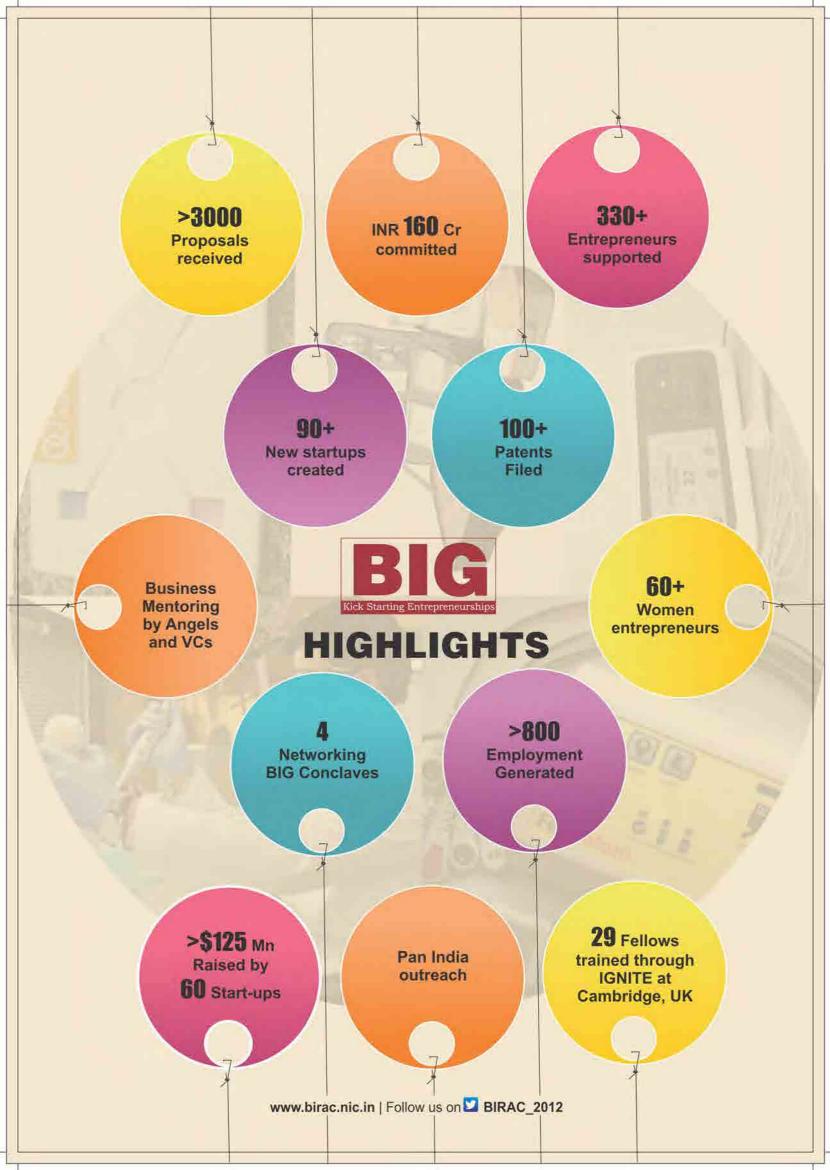












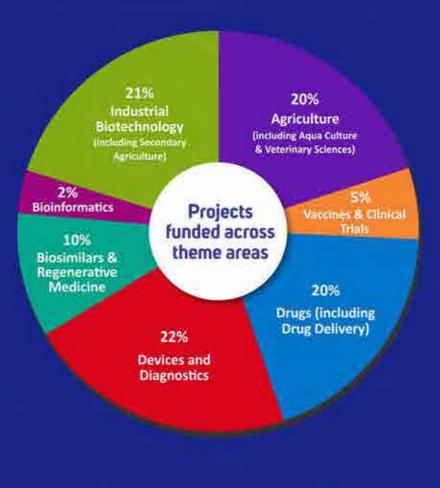


Small Business Innovation Research Initiative (SBIRI)

- Launched in 2005, Small Business Innovation Research Initiative (SBIRI), India's first PPP funding scheme facilitates early stage research undertaken by the industry in the field of biotechnology
- · Since its inception, the scheme has been instrumental in nurturing not only established companies, but also start-ups, and LLPs (either alone or in collaboration with academia) in the field of biotechnology
- The proposals are invited thrice a year across seven thematic areas that cover almost all areas of biotechnology research

Impact of SBIRI Scheme

| Projects received | 1548 |
|--|-----------------|
| Projects supported | 249 |
| Collaborative projects | 64 |
| Funds committed | ~ ₹257 crore |
| Employment generated | >250 |
| Women entrepreneurs supported | 25 |
| Follow on funding from BIG → SBIRI | 25 |
| Products/Technologies developed | 34 |
| Number of IP filed | 23 |



Biotechnology Industry Partnership Programme (BIPP)



- The Biotechnology Industry Partnership Programme (BIPP), a public-private partnership scheme promotes innovative research for development of transformational technologies/ processes in the Biotech sector
- The scheme serves as a launch pad for scaling and commercializing high risk innovations through cost sharing (equal) between BIRAC and the industry
- There are 3 calls for proposals in a year with proposals being invited under 7 thematic areas including Vaccines and Clinical Trials, Drugs including drug delivery, Biosimilar and Stem Cells, Agriculture, Device and Diagnostics, Bioinformatics and Industrial Biotechnology
- In addition, Special Calls for proposals have been announced in past in the areas of Biosimilars, Antivirals, Affordable HealthCare Technologies and Products, Secondary Agriculture, Human Papilloma Virus (HPV), Biopharmaceuticals, Anti-snake venom and Industrial Enzymes





PROJECTS FUNDED ACROSS THEME AREAS

21.2% Industrial Biotechnology (including Secondary Agriculture)

11.8% Vaccines & Clinical Trials

15.0% Drugs (including Drug Delivery)

18.7% Devices and Diagnostics

13.0% Biosimilars & Regenerative Medicine

18.7% Agriculture (including Aqua Culture & Veterinary Sciences)

1.6% Bioinformatics



Promoting Academic Research Conversion to Enterprise (PACE)



The scheme has two components

Academic Innovation Research (AIR)

Promotes development of PoC for a process/product by academia with or without the involvement of industry

Contract Research Scheme (CRS)

Aims at validation of a process or prototype (developed by the academia) by the industrial partner

- · Funds are provided as grant in aid to academia as well the industrial partner.
- IP rights reside with academia and the industrial partner has first right of refusal for commercial exploitation

Impact of PACE scheme

Projects received: 628 Total Number of projects supported: 46

Collaborative projects : 37 Funds Committed: ₹ 56.99 Crore

Employment generated : 150 No. of technologies developed:

No. IP generated:



Non-enzymatic Elucometer



Ginger dry extract



Virus like particle vaccine against a fatal viral disease of dogs



Technology developed in the area of tea

TAKE YOUR INNOVATION FORWARD WITH







BIRAC-PATH Scheme offers a wide range of IP & Technology Management services such as Patent searches, Patent drafting, filing, Technology evaluation, marketing and facilitating technology Transfer. All BIRAC supported innovators are eligible to apply under BIRAC-PATH scheme.

BIRAC-PATH (Patenting & Technology Transfer for Harnessing Innovations) is to support BIRAC funded Biotech Start-ups, Innovators and SMEs

- To safeguard the Intellectual Property (IP) by providing the advisory and financial support
- To build a pipeline of translational technologies emerging from BIRAC supported projects for technology transfer and commercialization

BIRAC as Facilitator under SIPP (start-ups Intellectual Property Protection) Scheme of DIPP, Govt. of India, for Indian Biotech Start-up to provide

 General advisory on different IPRs • Information of Protecting and promoting IPRs in other countries • Assistance in filling and disposal of the IP applications related to patents



Transformation through Social Innovation







- Launched under the aegis of Department of Biotechnology, Ministry of Science & Technology, Government of India, SPARSH programme aims at finding innovative solutions to society's most pressing social problems by developing various Products and Technologies in the area of Biotechnology
- So far, six calls have been announced on socially significant themes such as Maternal and Child Health, Ageing and Health, Soil and Plant Health and Waste to Value
- Financial support is provided in the form of Grant-in-Aid to Companies/Startups/Limited Liability Partnership (LLP) and Academic Institutions (in collaboration with Companies)

Projects supported -46 Women Entrepreneurs supported -10

IPs generated -3 Funds Committed -Rs. 20.14 Cr Employment generated -120

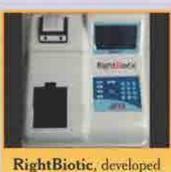
Some of the Products/Technologies developed under the scheme



SAANS developed by
Coeo Labs Pvt Ltd is a
Continuous Positive
Airway Pressure
(CPAP) device for new
born and infants



Rhino Digester is a robust, compact and cost-effective appliance for decentralized waste processing developed by Flycatcher Technologies LLP



by Xcellence in Bio
Innovations and
Technologies Pvt Ltd
is a point of care
device for detection of
antibiotic sensitivity
of uropathogens



Neurosynaptic
Communications Pot
Ltd has developed
ReMeDi-Nova-A CE
Certified affordable
Wireless Diagnostic
Technology with low
energy Bluetooth enabled
kit - for 35 different point
of care tests



Social Innovation Immersion Program (SIIP)

SIIP is BIRAC's Social Innovation fellowship/award program aimed at creating a pool of biotech "Social Innovators" who can identify and then bridge the needs & gaps within communities.



SIIP IMPLEMENTATION PARTNER

Social Innovators

SIIP Knowledge Partner



Start

Grant

Clinical

nmersion



Kick Turb



Networking opportunity

Access to Tinkering

labs

Application for Grant

SPITTLE



"MCH", "Waste to value" and "Ageing & Health" centres created

13 SIIP fellows graduated & 20 are engaged

Follow on funding received by 8 SIIP

13 prototypes developed



A novel smart blood bag monitoring solution for safe and reliable blood transfusion

neonatal sepsis

FEW PROTOTYPES DEVELOPED

Low cost and rapid point-of-

care diagnostic for detecting



A prototype for measuring uterine contractions



A diagnostic kit for detection of pregnancyinduced hypertensive disorder-Pre eclampsia

Maternal & Child Health (MCH)

Mentoring

Waste to Value

Ageing & Health



fellows























BioNEST

BIRAC has supported 31 Incubators under BioNEST Scheme- "Bioincubators Nurturing Entrepreneurship" for Scaling Technologies". BioNEST nurtures Biotech entrepreneurial ecosystem through creation of high end infrastructure on pan India basis. In these Bioincubators, startups access incubation, technical, marketing and business mentoring support.



World class Intrastructure & laboratories for startuns





Technical and Business Mentoring

Entrepreneurship development

Addressing **Unmet Needs**

Global Competitiveness

Training programs in emerging Technologies



Accelerating Innovations and discoveries



Legal and IP support

Faculty entrepreneurship



Innovative Products Technologies



Industry & academia interactions



FACILITIES













31 Bioincubators



213 Cr amount committed for BioNEST



3,37,000 sq. ft. area for Bioincubation



1,60,000 sq. ft. equipped with High end Instrumentation



355 Incubatees supported



137 Jobs created under BioNEST



767 Jobs created by the incubatees



367 Products/Technologies in pipeline



600+ mentors pool (Business, IP, regulators etc.)

















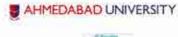


































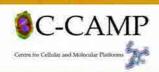




BIRAC REGIONAL CENTRES







BIRAC Regional Entrepreneurship Centre (BREC)

National Life Science Entrepreneurship Awareness Programmes

BREC Since Jan 2017

e Jan 2017

Meet The

Investors Series

National Blotech Entrepreneurship Challenge (NBEC) 2.0 Launched

Entrapreneurship Development Boot Camps (with International Faculty) Entrepreneurship Development Workshops

Geographies covered include Gangtok, Guwahati, Vellore, Bangalore, Hyderabad, Delhi,

Mumbai, Ahmedabad, Chennai, Rajasthan

OBJECTIVES

- Foster and facilitate bioentrepreneurship
- Create and inculcate a spirit of bio- entrepreneurship
- Facilitate and catalyse the journey of biotech ideas towards commercialization
- Enable and empower bio- entrepreneurs through business and technology advice and mentorship





BIRAC Regional Bio-Innovation Center



BIRAC Regional BioInnovation Centre (BRBC)

Initiated: March 2018

BRBC is mandated to be a high quality national resource center to support and promote innovation and entrepreneurship in Life Sciences.

→ Services offered →

Venture Mentoring Service

Streamlined online mentor network for effective match making between entrepreneurs and mentors

Venture Base Camps

Focused theme based camps to facilitate product commercialization

Regulatory Information & Facilitation Center

Seamless personalized approach for understanding regulatory approval processes for biotech products

BioIncubation Practice School

Experiential learning to empower BioIncubation Managers to set up and run BioIncubators







BIRAC Regional Innovation Centre (BRIC)

BRIC IMPACT

- Extensive outreach to approx 700 innovators directly and 1500 innovators indirectly
- Surveys & Interviews to seek opinion of about 150 key opinion Leaders (KOL) through surveys and interviews
- 30 workshops on IP, regulatory & technology management
- 30 networking platforms provide
- 4 16 tech-showcases for entrepreneurs
- Over 150 IP reports prepared for start-ups, individuals and academia.

CULSTERS COVERED:

Southern Clusters:

Myderabad , Bengaluru ,Chennai & Vellore, Thiruvananthapuram, Kochi

Western Clusters:

Mumbai, Pune, Ahmedabad , Bhubaneswar, Vizag., Bhopal & Indore





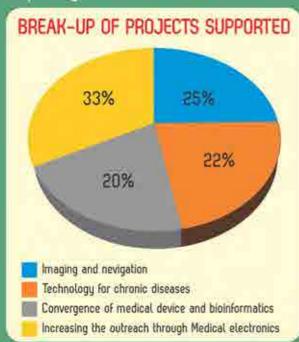


INDUSTRY INNOVATION PROGRAMME ON MEDICAL ELECTRONICS (IIPME)

Aim is to support cutting edge technologies in multi-disciplinary areas of Medical Electronics

FOCUS ON

- · Imaging and navigation
 - Improvements in minimally invasive techniques and therapy delivery
- Technologies for chronic diseases
 - Cost effective and accurate chronic disease management with focus on disease states, such as obesity and diabetes
- · Convergence of medical device and bioinformatics
 - Results in early and faster diagnosis, better prognosis, and tailored therapy
- Increasing the outreach through Medical electronics
 - Innovative service models, portable home based packaged medical electronics, community health programs



Highlights

- Number of calls-2 (2015 & 2016)
- Number of proposals received-288
- Projects supported-36
- Total Funding Committed- INR 15.48 Cr
- Products commercially launched-1
- Validated Technologies/Products-6
- IP filed on supported technologies-2
- Total Manpower Supported- 140

Few Technologies/Products supported



Neonatal bearing screening devic



Artificial Langrix



Mon-invisive opto-glucometre



Hand-cranked Defibritiator



X-ray to 3D software



Hexapod Patient Couch



Laparoscopy Surgical Training Simulator



Secondary Agriculture Entrepreneurial Network (SAEN) in Punjab



Focus

To Support Industry and Promote Start-Ups in Agri-Food Sector in Punjab

PARTNERS:

- Punjab State Council For Science and Technology (PSCST)
- Central of Innovative & Applied Bio Processing (CIAB)
- National Agri-Food Biotechnology Institute (NABI)
- Bio-NEST Punjab University (Bio-NEST-PU)





OBJECTIVES:

- Technology Mapping & IP Landscaping of Research leads from R&D Institutions/Organizations
- Assessment of unmet needs of Agri / Food industry & Development of Technological Solutions to Address
 the same.
- Pre-commercial Validation/Scale up / Demonstration / Commercialization of R&D leads through proposed Early Translation Accelerator.
- Creating The Pipeline of Incubatees and Entrepreneurs.
- Capacity Building for Entrepreneurship Development

KEY FEATURES

- . Mapping of Potential R&D Leads
- Early Translation Accelerator to Validate Technologies having commercial Potential
- IP Inventory of Innovations from Punjab
- Agri-Food Innovation Fellowships
- Technology Showcasing
- Annual Punjab Start up Fest
- Web Portal & knowledge Bulletin

- · Support System For Existing Industrial Units
 - Solutions for Addressing Unmet Technology Needs
 - Networking with Centers of Excellence
 - Capacity Building on:
 - · Protection of Intellectual Property Rights
 - Funding options available with Govt Agencies
- Support System for Start-ups
 - Incubation Space
 - Mentorship
 - Instrumentation Support
 - Access to Funding by BIRAC under Focused Secondary Agriculture Call for State of Punjab

Supported by









Centre of Innovative & Applied Bioprocessing



www.birac.nic.in | Fellowps on BIRAC 2012

GRAND CHALLENGES INDIA



Grand Challenges India (GCI) is the flagship program of the partnership of the Department of Biotechnology, Government of India, BIRAC, and the Bill & Melinda Gates Foundation, managed by the Program Management Unit at BIRAC. In 2016, the PMU-BIRAC was joined by the Wellcome Trust.

GCI was launched with the aim of directing funding and research, and encouraging innovation to address some of the greatest public health and development challenges that India faces today. Programs under GCI and the PMU-BIRAC fall under a diverse set of themes, all of which ultimately lead to the overall goal of improving public health.



These include maternal and child health, infectious diseases, vaccines, agricultural development, food and nutrition, sanitation and hygiene among others.

What began as a suite of 3 programs till 2015, is now a flourishing partnership which implements and manages nearly 15 programs, across 7 themes.

Program
Management
Unit at BIRAC
(PMU-BIRAC)

The PMU-BIRAC is the implementing agency of the Grand Challenges India partnership of the Department of Biotechnology, BIRAC, the Bill & Melinda Gates Foundation and the Wellcome Trust.

PMU-BIRAC is responsible for executing, managing, and providing technical and financial oversight of collaboratively funded projects and initiatives under the Grand Challenges India program, as well as other individually funded programs. In 2016, Wellcome Trust UK joined this partnership and PMU-BIRAC provides technical and management support to the Innovator Awards of the Trust.

This platform also brings together global funders with national stakeholders to a single platform, with not only the aim of leveraging funding from these bodies to address some of the greatest challenges we face today, but to also promote best practices, share knowledge among partners, by bringing in international expertise into the country.

PMU-BIRAC is housed at the Biotechnology Industry Research Assistance Council (BIRAC), in New Delhi and is currently a team of nine.













Open Calls

All Children Thriving (ACT) aimed at investigating novel cost-effective measurement tools and mechanisms to combat unhealthy birth, growth and development. By creating and measuring integrated solutions for healthy birth and development, the call aimed at ensuring that babies not only survive, but are put on a trajectory to thrive.

Immunization Data: Innovating for Action (IDIA) focuses on encouraging innovation in the collection and management of immunization data in India to address challenges in data collection, analysis and use that are being faced today. This field-and information technology-based call is unique in that it is partnered technically by the Ministry of Health and Family Welfare, the Department of Health Research and the Indian Council of Medical Research.

The Antimicrobial Resistance (AMR) call focuses on encouraging innovation to address AMR in India, through three country-specific mandates: surveillance, infection prevention and control and effluent treatment to reduce the spread of antibiotics in the environment. This global call was run with Grand Challenges partners from Brazil, Africa and South Africa, who implemented country-specific calls:

Grand Challenges Explorations-India (GCE- India) call, implemented by IKP Knowledge Park and managed by PMU-BIRAC, is a twice-yearly run call on multiple mandates. This call specifically focuses on out-of-the-box and very early stage ideas and provides seed funds to researchers to test their concept and generate evidence which can then be taken to larger funding programs.

Knowledge Integration (ki) Data Challenge encourages development and testing of innovative data analytic approaches to tackle the burden of maternal and child health problems in India through already available data in the country. This call seeks collaborations between academics and data scientists to answer some of the important questions through data analysis.

Specialised Programs

Healthy Birth, Growth and Development knowledge integration India (HBGDki-India) aims at creating a knowledge compendium to analyse factors that affect pre-term birth, growth faltering and neurocognitive development in children. This is done by collecting, collating and analysing a variety of data from India and analysing it in relation to data from abroad on a common platform to understand the important patterns, trends and issues to better target research and policy.

Knowledge Integration and Translational Platform (KnIT) is a unique India-specific knowledge synthesis platform that focuses on answering important questions in maternal and child health and nutrition to better develop health policy and identify research gaps. It does so by using Indian data and evidence to aid in the development of evidence-based policy at the state and central level.

The Sentinels experiment sources innovations in India by identifying sentinels sites for new ideas to address global health challenges by creating networks in key institutions, and regions.

Wellcome Trust Innovator Awards are managed in India by the PMU-BIRAC on behalf of the Wellcome Trust. The unit also managed the Affordable Healthcare in India awards on behalf of the Trust till 2016.

Programs Under Development

The Nutrition Sensitive Agriculture program focuses on leveraging India's resources in development of appropriate smallholder-farmer-oriented agricultural technologies and models to support the upgrade of local agriculture technology and target the linkage between agriculture, nutrition and health which would lead to the improvement in health of women and children.

The Med-tech Challenge is a unique call that will focus on providing innovators with the tools and skills to take their innovation to the market. The program will bring together innovators, mentors, business development experts and professionals who will train and support them to create viable business development plans and the best of these will be supported through the Accelerator Grants.

Graduated Programs

The Achieving Healthy Growth through Agriculture and Nutrition (AGN) call and the Reinvent the Toilet Challenge (RTTC) call, launched in 2013 and 2014 respectively, completed the respective program periods in 2017. AGN supported 5 projects and RTTC supported 6 projects and successful projects from both these programs are under consideration for translation to scale grants and other opportunities to build on the work done during these projects.

For further details contact Mission Director, PMU-BIRAC: mdpmubmgf.birac@nic.in







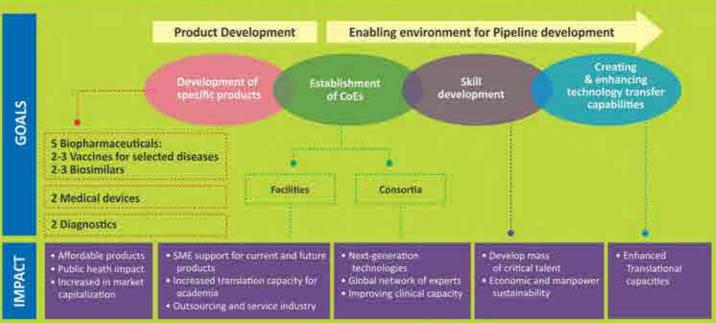
NATIONAL BIOPHARMA MISSION



VISION: To enable and nurture an ecosystem for preparing India's technological and product development capabilities in biopharmaceuticals to a level that will be globally competitive over the next decade, and transform the health standards of India's population.

Biotechnology Industry Research Assistance Council (BIRAC) is the implementing agency for Department of Biotechnology (DBT), Ministry of Science & Technology Biopharma Mission programme entitled: "Industry-Academia Collaborative Mission for Accelerating Discovery Research to Early Development for Biopharmaceuticals - "Innovate In India (13) Empowering biotech entrepreneurs & accelerating inclusive innovation". The National Biopharma Mission (NBM) was approved by the Cabinet in May 2017 at a total cost of US\$250 million for five years with 50% funding through World Bank loan agreement for flexible financing arrangements.

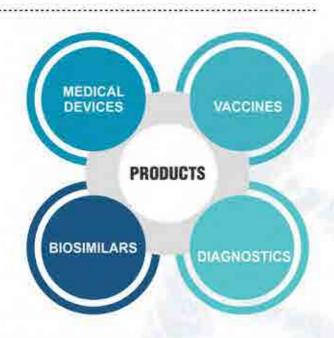
Aim: . Boost the growth of domestic biopharma industry by accelerating the translation of research concepts into viable products and supporting clinical validation . Enable sustainable networks for collaborations between industry and academia and support entrepreneurial ecosystem . Strengthen translational capability of academic researchers . Empower bioentrepreneurs and SMEs . Elevate the innovation quotient of the industry



MISSION: Making India a hub for design and development of novel, affordable and effective biopharmaceutical products and solutions. The focus of the mission is:

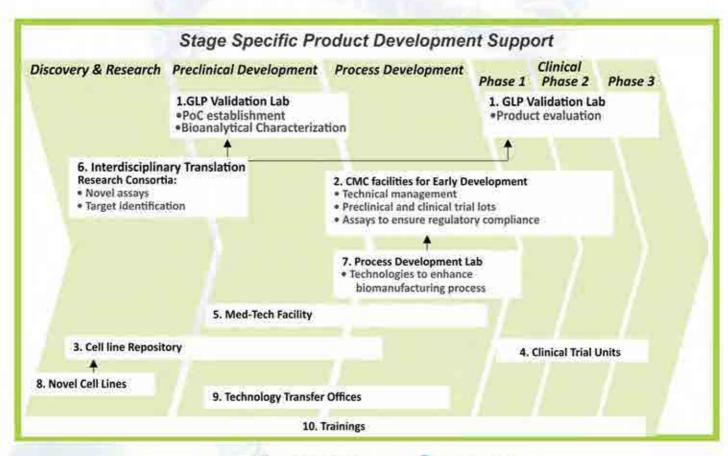
Development of product leads that are relevant to the public health need in vaccines, biosimilars and medical devices & diagnostics.

Establishing and strengthening shared infrastructure facilities for product development and validation.





- Developing human capital by providing specific trainings to address the critical skills gap across the product development value chain.
- Creating and enhancing technology transfer and intellectual property management capacities and capabilities.





FIRST HUB



Facilitation of Innovation and Regulation for Start-ups and Innovators



To promote government initiatives on Start-up India & Make in India, BIRAC a Public Sector Undertaking of Department of Biotechnology, Gol has set up a Facilitation unit which will act as FIRST HUB to address the queries of Start-ups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc.



Representions from DBT, BIRAC, ICMR, NIB, CDSCO and other relevant government. organisation will be available for taking queries.

Facilitation will be provided in the following areas:



Regulatory pathways and Regulation



Funding opportunities















First Hub will be open on every first Friday of the Month at BIRAC office from 3:00 pm to 5:00 pm.

Prior appointment is essential as only 5-6 Innovator slots are available. Submit specific queries through online portal available at www.birac.nic.in









PROMOTING MAKE IN INDIA



BIRAC has collaborated with Kalam Institute of Health Technology (KIHT) to facilitate Start-ups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc. in Testing and Standardisation of Medical Devices.



KIHT has empanelled a set of Laboratories which help in testing to comply with applicable standards.

Standards that can be tested:

- Electromagnetic Interference (IEC 60601 series)
- Electromagnetic Compatibility (IEC 60601-1-2 series)
- Electrical safety testing
- Biocompatibility (ISO 10993)
- GMP (ISO 13485)
- Software testing (IEC 62304)
- Material testing (Relevant ASTM Standards)
- Radiation protection (IEC 60601-1-3)

Additional Services:

- Rapid Prototyping
- Health Technology Assessment
- NIPUN Certificate application

Cost will vary depending on parameters, such as:

- Duration of Testing
- Testing Chamber Configuration
- No. of units required to be tested

Testing charges are subsidized for BIRAC referred start-ups to an extent of 40%-70%

For getting reference through BIRAC & availing the subsidized cost e-request may be sent to Sonia Gandhi, Senior Manager-Investments, BIRAC at sgandhi-birac@nic.in















Capital assistance to startups through **BIRAC** supported incubators

Rs 100-200 Lakhs

SEED Fund given to each Partner Incubator for investment in start-ups

SEED Fund Partner Incubators

SEED Fund Sanctioned

Eligibility criteria for Partner Incubators:

- Incubator should have been supported through BIRAC's BioNEST scheme
 - Incubator should be operational since last three years, with at least 5 resident start-ups in Biotech/ Med-tech/Life sciences
 - · Incubator should have in-house capacity in incubating & mentoring early stage Biotech/ Life Sciences start-ups
 - Incubator should have established IP&TT facilitation services for start-ups
 - Incubator must have prior experience in management of early stage funding schemes or other grants

BIRAC in partnership with BioNEST incubators, has created a SEED fund of upto Rs 30 lakhs for equity investment

in potential start-ups

SEED Fund is to help cover the first Valley of Death for Startups and help them to become Investible



Biotechnology Innovation Fund - AcE (Accelerating Entrepreneurs) is an equity based "Fund of Funds" exclusively for Biotech Start-ups. AcE daughter funds are SEBI registered private funds to invest equity in start-ups for providing the risk capital to undertake innovation, research and product development



Overall Framework:

- The AcE Fund shall make a maximum capital commitment of up to Rs 30 crores or 30% of the total aggregate capital commitment amount (i.e. fund corpus) in each AcE daughter Fund
- The assistance to a start-up will be up to INR 7 crores against equity
- The AcE daughter fund shall invest at least twice the amount contributed by BIRAC's AcE Fund into Biotech/ Life Sciences sector start-ups



