

**GOVERNMENT OF INDIA**  
**MINISTRY OF SCIENCE AND TECHNOLOGY**  
**DEPARTMENT OF BIOTECHNOLOGY**

**RAJYA SABHA**  
**STARRED QUESTION NO. 254**  
**ANSWERED ON 23.03.2023**

**Achievements under National Biopharma Mission**

**\*254. # Dr. Radha Mohan Das Agrawal:**

Will the Minister of **Science and Technology** be pleased to state:

- (a) the details of the programmes conducted by the Biotechnology Industry Research Assistance Council under the National Biopharma Mission along with the names of the institutes where these were conducted; and
- (b) the details of the achievements made therein?

**ANSWER**

**MINISTER OF STATE (INDEPENDENT CHARGE) OF**  
**SCIENCE AND TECHNOLOGY AND EARTH SCIENCES**  
**(DR. JITENDRA SINGH)**

(a) and (b): A statement is laid on the Table of the House.

**Statement referred to in reply to parts (a) and (b) in respect of Rajya Sabha Starred Question No. 254 for reply on 23.03.2023 regarding Achievements under National Biopharma Mission asked by Dr. Radha Mohan Das Agrawal.**

**(a) and (b) :** The National Biopharma Mission (NBM) is a Cabinet approved Program entitled Industry-Academia Collaborative Mission for Accelerating Discovery Research to Early Development for Biopharmaceuticals – “Innovate in India (i3) Empowering biotech entrepreneurs & accelerating inclusive innovation”; of the Department of Biotechnology (DBT), being implemented through Biotechnology Industry Research Assistance Council (BIRAC). This scientifically driven enterprise aims at developing an ecosystem for affordable product development and the programmes are being implemented under the following verticals:

1. Development of product leads for Vaccines, Biosimilars, Medical devices and Diagnostics that are relevant to the public health need by focussing on managed partnerships.

The Mission has been supporting the development of Vaccine candidates (15) for Cholera, Influenza, Dengue, Chikungunya, Pneumococcal disease, COVID-19 and related technologies (4); Biosimilar products and related technologies (21) for Diabetes, Rheumatological and ophthalmic diseases, Cancer; Medical Devices & Diagnostics (29) including devices for imaging, pumps for dialysis, endoscopes, bone implants, MRI scanners and diagnostics for COVID 19.

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

Support is being extended by the Mission for establishing shared infrastructure facilities (22) for Biopharmaceutical development, MedTech device development and Vaccine development. Establishment of hospital based and field site based Clinical Trial Networks (16) for trials of vaccines and bio-therapeutics and scientific research projects (17) are also being supported.

3. Develop human capital by providing specific trainings to address the critical skills gap.

Trainings have been imparted across the product development value chain in areas such as product development, intellectual property registration, technology transfer, regulatory standards and bioethics.

4. Establishment of Technology Transfer Offices

To help enhance industry academia inter-linkages and provide increased opportunities for academia, innovators and entrepreneurs, to translate knowledge into products and technologies, 7 Technology Transfer Offices are being supported.

The list of the institutions (academic/industry) supported under NBM is at Annexure 1.

The list of the key achievements made under NBM is at Annexure 2.

## List of the institutions (academic/industry) supported under NBM

## I(a). Vaccine Development and related Technologies

<b>S. No.</b>	<b>Organisation</b>
1.	Tergene Biotech (P) Limited, Chennai
2.	Mynvax Private limited, Bangalore
3.	Indian Immunologicals Limited, Hyderabad
4.	Sun Pharmaceuticals industries Limited (SPIL), Ahmedabad
5.	Sun Pharma Advanced Research Company Ltd (SPARC), Mumbai
6.	Translational Health Science and Technology Institute, Faridabad
7.	Bharat Immunologicals and Biologicals Corporation Limited (BIBCOL), UP
8.	Bharat Biotech Limited, Hyderabad
9.	Enzene Biosciences Ltd, Pune
10.	Serum Institute of India Private Limited, Pune
11.	Cadila Healthcare Limited, Ahmedabad
12.	National Institute of Immunology New Delhi
13.	Aurobindo Pharma Limited, Hyderabad
14.	Intas Pharmaceuticals Limited, Ahmedabad
15.	Biological E Limited, Hyderabad
16.	Seagull BioSolutions Pvt. Ltd, Pune
17.	Syngene International Limited, Bangalore
18.	Sahajanand Laser Technology Limited, Delhi
19.	Indian Institute of Science, Bangalore
20.	St Johns Hospital, Bangalore
21.	Epygen Biotech Private Limited, Maharashtra

## I(b). Biosimilars

<b>S. No.</b>	<b>Organisation</b>
1.	Vitane Biologics Pvt. Ltd., Telangana
2.	Serum Institute India Pvt. Ltd., Pune
3.	BIBCOL, UP
4.	National Institute of Immunology (NII), Delhi
5.	Stelis Biopharma Pvt Ltd, Bengaluru
6.	Levim Biotech LLP, Chennai
7.	Lupin Limited Biotech Division, Mumbai
8.	Lazuline Biotech Pvt. Ltd, Hyderabad
9.	Enzene Bioscience Pvt. Ltd., Pune
10.	GeNext Genomics Pvt. Ltd. , Nagpur
11.	Vellore Institute of Technology, Vellore
12.	Indian Institute of Technology (IIT), Delhi

13.	National Chemical Laboratory (CSIR-NCL), Pune
14.	Virchow Biotech Private Limited, Hyderabad
15.	Bioklone Biotech Private Limited, Chennai
16.	University of Delhi South Campus (UDSC)
17.	Gennova Biopharmaceutical Limited, Pune
18.	Cadila Healthcare Limited, Ahmedabad
19.	Mazumdar Shaw Medical Foundation, Bengaluru
20.	Tata Memorial Centre, Mumbai
21.	Indian Institute of Technology (IIT), Bombay

I(c). Medical Devices and Diagnostics

<b>S. No.</b>	<b>Organisation</b>
1.	Panacea Medical Technologies (P) Limited, Karnataka
2.	Huwel Life Sciences Private Limited, Hyderabad
3.	OrthoCrafts Innovations Pvt. Ltd, Pune
4.	Renalyx Health systems Pvt. Ltd, Bengaluru
5.	PES University, Bangalore
6.	Healthcare Technology Innovation Center (HTIC) IIT-Madras
7.	Voxelgrids, Bengaluru
8.	Univlabs, Gurugram
9.	Irrilic Pvt Lts, Bengaluru
10.	CMR Institute of Technology, Bengaluru
11.	Mylab Discovery Solutions Pvt. Ltd., Gurugram
12.	ubio Biotechnology Systems Pvt
13.	Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram
14.	SciGenom Labs Private Limited, Kerala
15.	Yaathum Biotech Private Limited, Chennai
16.	SHC Shine biotech Pvt. Ltd, Faridabad
17.	Denovo Biolabs Pvt Ltd, Bengaluru
18.	National Institute of High Security Animal Diseases, Bhopal
19.	Achira Labs Pvt. Ltd, Bengaluru
20.	Levram Life sciences Private Limited, Silvassa
21.	Guru Gobind Singh Indraprastha University, Delhi
22.	Indian Institute of Technology, Delhi
23.	Medsorce Ozone Biomedicals Pvt. Ltd., Faridabad
24.	JC OrthoHeal PVT LTD, Surendranagar, Gujarat
25.	VPHORE labs Private Limited, Bengaluru
26.	Vasmed Health Sciences Pvt Ltd, Bengaluru
27.	InnAccel Private Limited, Bengaluru
28.	Datt Medi products Limited, Delhi
29.	Inochi Care Private Limited, New Delhi
30.	TTK Healthcare Limited, Chennai
31.	Intessence Solutions Private Limited, Bengaluru
32.	PathShodh Healthcare Private Limited, Bengaluru
33.	CareNow Medical Pvt Ltd, Muthugoundan Pudur, TN

34.	Carditek Medical Devices Pvt. Ltd., Bengaluru
35.	Amrita Vishva Vidyapeetham, Kochi

#### II(a). Shared Facilities

S. No.	Institutions
1.	Shilpa Medicare Biologics, Raichur
2.	Syngene International Limited, Bengaluru
3.	Interactive Research School for Health Affair(IRSHA), Pune
4.	Kalinga Institute of Medical Sciences (KIMS), Bhubneshwar
5.	Indian Institute of Technology (IIT), Kanpur
6.	Palamuar BioSciences, Telangana
7.	Society for Applied Microwave Electronics Engineering & Research, Mumbai
8.	Yenepoya University, Mangalore
9.	Netra Accelerator
10.	Gramudyog Siksha Mandole, Aurangabad
11.	Centre for Cellular and Molecular Platform (C –CAMP), Bangalore
12.	Entrepreneurship Development Centre, Pune
13.	Indian Institute of Chemical Technology, Hyderabad
14.	Institute of Microbial Technology (IMTECH), Chandigarh
15.	MJ Biopharma, Pune
16.	National Centre for Cell Science (NCCS), Pune
17.	GENNOVA Biopharmaceuticals Ltd, Pune
18.	Huwel Lifesciences Private Limited, Hyderabad
19.	National Institute of Animal Biotechnology, Hyderabad
20.	Andhra Pradesh Med Tech Zone, Visakhapatnam
21.	Intas Pharmaceuticals Limited, Ahmedabad
22.	Himedia Laboratories Pvt Ltd, Mumbai
23.	Syngene International Limited, Bengaluru

#### II(b).Scientific Research

S. No.	Organisation
1.	International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi
2.	Translational Health Science and Technology Institute (THSTI), Faridabad
3.	Christian Medical College (CMC), Vellore
4.	All India Institute of Medical Sciences, New Delhi
5.	Indian Institute of Technology, Delhi
6.	National Institute of Immunology, New Delhi
7.	Clinical Development Services Agency, Faridabad
8.	Manipal Academy of Higher Education, Karnataka

9.	Institute of Life Sciences (ILS), Bhubaneswar
10.	Topiwala National Medical College & B. Y. L. Nair Charitable Hospital Mumbai
11.	Postgraduate Institute of Medical Education and Research (PGIMER) Chandigarh
12.	All India Institute of Medical Sciences (AIIMS) Bhubaneswar
13.	Oncosimis Biotech Pvt Ltd, Hyderabad
14.	Tranalab Private Limited, Bengaluru
15.	OmniBrx Biotechnologies Pvt Ltd, Ahmedabad
16.	Theragen Biologics Private Limited, Chennai
17.	Levim Biotech, Chennai
18.	Indian Immunologicals Limited, Hyderabad
19.	CSIR-National Chemical Laboratory, Pune
20.	Vcare Biolabs Private Limited, Hyderabad
21.	Lab Iconics Technologies, Hyderabad
22.	VaxFarm Life Sciences LLP
23.	All India Institute of Medical Sciences (AIIMS), Delhi
24.	Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh
25.	Regional Centre of Bio-technology(RCB), Faridabad
26.	OmniBrx Biotechnologies Pvt Ltd.,
27.	Regional Medical Research Center, Bhubneshwar
28.	ICMR- National Institute of Malaria Research, New Delhi
29.	Multi Vaccines Development Program, New Delhi
30.	Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry
31.	Cadila Healthcare Ltd., Ahmedabad
32.	Sanjay Gandhi Postgraduate Institute of Medical Science, Lucknow
33.	Shiv Nadar University, Chennai
34.	Indian Institute of Chemical Biology, Kolkata
35.	Institute of Microbial Technology, Chandigarh

#### II(c).Clinical Trial Networks

<b>S. No.</b>	<b>Organisation</b>
1.	Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry
2.	Institute of Medical Sciences and Sum Hospital, Bhubaneswar
3.	All India Institute of Medical Sciences (AIIMS) Rishikesh
4.	Christian Medical College (CMC), Ludhiana
5.	Meenakshi Mission Hospital and Research Center, Madurai
6.	Amala Cancer Hospital Society, Thrissur
7.	Gokula Education Foundation, Bengaluru
8.	Victoria Hospital Bangalore Medical College and Research Institute, Karnataka

9.	North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Shillong
10.	Institute of Post Graduate Medical Education and Research, Kolkata
11.	Sri Guru Ram Das University of Health Sciences, Amritsar
12.	NIMS Medicity, Kerala
13.	SRM Institutes for Medical Science, Chennai
14.	Medanta Institute of Education and Research, Gurgaon
15.	Mahatma Gandhi Institute of Medical Sciences, Maharashtra
16.	Centre For Arthritis & Rheumatism Excellence, Cochin
17.	St John's National Academy of Health Sciences, Bengaluru
18.	Kusum Dhirajlal Hospital, Ahmedabad
19.	Post Graduate Institute of Medical Education & Research, Chandigarh
20.	Amrita Institute of Medical Sciences, Kochi
21.	Regional Institute of Ophthalmology IGIMS, Patna
22.	Regional Institute of Ophthalmology, Kerala
23.	Sankara Deva Nethralaya, Guwahati
24.	Shri SadguruSeva Sangh Trust, Chitrakoot, MP
25.	Adityajyot Eye Hospital Private Limited, Mumbai
26.	Society for Health Allied Research and Education, Hyderabad
27.	Christian Medical College, Vellore
28.	ICMR- National Institute of Epidemiology, Chennai
29.	The INCLEN Trust International, Delhi
30.	Pondicherry Institute of Medical Sciences
31.	Maulana Azad Medical College, Delhi
32.	Society for Applied Studies, Delhi
33.	ICMR-Regional Medical Research Center, Bhubaneswar
34.	Andhra Medical College, Visakhapatnam
35.	Tata Memorial Centre, Mumbai
36.	Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Mumbai
37.	Dr. Bhubaneswar Borooah Cancer Institute (BBCI), Guwahati
38.	Homi Bhabha Cancer Hospital, Varanasi
39.	The Cancer Institute, Chennai
40.	Malabar Cancer Centre, Kerala
41.	Max Super Specialty Hospital, New Delhi
42.	Northeastern Indira Gandhi Regional Institute of Health and Medical Sciences (NEIGRIHMS), Shillong
43.	Regional Cancer Centre, Thiruvananthapuram
44.	Cachar Cancer Hospital, Silchar

IV(a). Technology Transfer Offices

S. No.	Organisation
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1.	Foundation for Innovation and Technology Transfer (FITT), Delhi
2.	Entrepreneurship Development Centre EDC, Pune
3.	IKP Knowledge Park, Hyderabad
4.	Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar
5.	Centre for Cellular and Molecular Platform (C –CAMP), Bangalore
6.	Biotech Consortium India Limited, Delhi
7.	Sree Chitra Tirunal Institute for Medical Sciences & Technology, Trivandrum



Details of achievements made under National Biopharma Mission

1. Development of product leads for Vaccines, Biosimilars and Medical Devices & Diagnostics

Vaccines:

- Candidates supported for the preclinical/clinical development of Pneumococcal, Dengue, Chikungunya, Influenza and COVID-19 vaccines.
- 02 Covid-19 Vaccines supported for Preclinical and early clinical development were advanced to Clinical Trials (ZyCoV D and Corbevax) with further support through Mission Covid Suraksha (MCS) received EUA (Emergency Use Authorization)
- Pneumococcal vaccine candidate completed Phase -3 Clinical trial and received market authorization.
- Chikungunya candidate vaccine, Phase - 2 Trial enrollment completed.

Biosimilars:

Some of the therapeutic molecules supported by the mission are as follows:

- Human Serum Albumin, Herceptin, Insulin Glargine, Liraglutide, Ranibizumab, rHU Biosimilar Lispro, Ustekinumab, and Aflibercept. The mission is also supporting development of clones namely Ramucirumab, Golimumab and Factor VIII.
- Pegylated interferon, a biotherapeutic was launched for COVID-19, Phase-2 trial was supported under NBM.
- Phase - 3 clinical trial successfully completed for biosimilar Liraglutide for Type - 2 diabetes and applied for market authorization to CDSCO.
- Phase - 3 Clinical trial initiated for biosimilar Aflibercept for age related macular degeneration.
- Phase -1/2 trial initiated for the first indigenously developed CAR-T therapy for cancer.

Medical Devices and Diagnostics:

- NBM supported development of RT PCR kits, ELISA Kits, Ventilators, Viral Transport Media.
- Completely indigenous MRI machine scanners developed by Voxelgrids Innovations Pvt. Ltd, undergoing clinical validation.
- Advanced Multi spectral Flexible Video Endoscope, a next generation, flexible video endoscopy system with multi spectral imaging and intelligent image fusion techniques for multi modal tissue visualization for improved diagnosis has been developed by IIT Madras.

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

i. Shared infrastructure facilities supported under the Mission include- 2 Good Clinical Lab Practices (GCLP) labs for vaccine immunogenicity evaluation, 3 Good Laboratory Practices (GLP) labs for Analytical testing of Biosimilars, 03 Good Manufacturing Practices (cGMP) manufacturing and Process Development labs, 01 preclinical device testing, 04 ISO certified Medical Device prototype testing, 02 Medical Device and Diagnostic manufacturing units, 02 facilities for medical device safety testing, 01 Media development facility, 2 Lentivirus manufacturing facility, 02 cell line repository.

ii. Scientific Research for building a consortium of partners for development of innovative technologies and platforms.

Under this component Translational Research Consortia has been set up for Dengue, Chikungunya, Hepatitis E virus. Indigenous Bioreactor, Laboratory Information Management System have been launched. Patents (05) and publications (06) are tangible outcomes.

iii. Clinical Trial Networks linked to network of clinical trial experts and sites for conducting standardized and reliable clinical trials, have been established. 5 Hospital networks, comprising 36 hospitals, and 11 field sites are supported for conduct of clinical trials for biologics, vaccines, drugs and devices.

3. Develop human capital by providing specific trainings to address the critical skills gap for product development. 6747 people have been trained.

4. Technology Transfer Offices: 07 TTOs established in various geographical regions of the country.

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