**Department of Biotechnology and its Research Institution’s Accelerate development of COVID-19 Vaccines, Therapeutics and Diagnostics**

* ***Low cost Diagnostic Assays, RNA Extraction kit and VTM***
* ***Animal Models for preclinical studies of vaccine candidate development***

The Department of Biotechnology (DBT) and its 16 Research Institutes are working relentlessly to mitigate COVID-19 crisis and are deeply engaged in multifaceted R & D for offering potential COVID-19 solutions.

**Development of in-house diagnostic assays**

DBT-AIs (Autonomous Institutions) have focussed their research efforts on the development of indigenous diagnostic tests to achieve self-sufficiency.

* A low-cost colorimetric PCR based assaytechnology andan aptamer-based SARS-CoV-2antigen detection technology developed by DBT-THSTI, were transferred to Genei and Molbio Diagnostics Pvt. Limited, respectively.
* In-house IgG ELISA technology by DBT-THSTI was also transferred to XCyton Diagnostics Limited.
* DBT-RGCB along with POCT services, New Delhi developed a low-cost viral transport medium and RNA extraction kit that is ready for commercial use.

To facilitate access to clinical and virus samples by researchers, startups and industry. Biorepositories established at DBT-THSTI, Faridabad, DBT-RCB, Faridabad, DBT-ILS, Bhubaneshwar, DBT-InStem, Bengaluru, DBT-NCCS, Pune and DBT facility at ILBS New Delhi are fully functional. Sharing of Biospecimens accelerates COVID-19 related research towards development of kits, therapeutics and vaccines. DBT-THSTI has distributed over 2500 sample aliquots in response to requests from industry, start-ups and academia.

DBT- AIs as COVID-19 diagnostic kit validation centres for RTPCR, Antibody and Antigen tests are now providing panels to industry, startups and academia for the in-house kit testing before validation.

DBT-THSTI has also established panels of positive sera from symptomatic patients who tested positive for SARS-CoV-2 infection. These panels will find utility in validation of diagnostic kits.DBT-THSTI has validated rapid IgG/IgM and rapid IgG card tests for SARS-CoV-2 using these panel of sera.

**Research resources – for facilitating start up and industrial research**

DBT institutes are developing research resources such as indigenous animal models, viral spike proteins, receptor binding domain peptides, pseudoviruses, clinical immunological assays and antibodies for research for sharing with industry and academia. DBT-THSTI Faridabad has established a Hamster infection model for evaluation of antivirals, therapeutics and vaccines. DBT-ILS, Bhubaneshwar has successfully established 17 *in vitro*cultures of SARS-CoV-2 using vero cell lines, which, is an important resource for anti-viral testing and validation of antiviral products.

**#DBT-India Fights COVID**by developing indigenous solutions towards realisation of our goal of an ‘Atmanirbhar Bharat’.

***(For Further Information: Contact Communication Cell of DBT/BIRAC  @DBTIndia @BIRAC\_2012***

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Press Information Bureau, 16 July 2020