

Government of India
Ministry of Science and Technology
Department of Biotechnology

Monthly Cabinet Summary, November- 2018

1. Important policy decisions taken and major achievements during the month:

- i. The Department of Biotechnology (DBT) under the Ministry of Science and Technology, in collaboration with the Wellcome Trust, is supporting a three-tier fellowship programme on biomedical research at post-doctoral level. *The President of India, Shri Ram Nath Kovind*, graced the event organized at Vigyan Bhavan, New Delhi to celebrate *DBT-India Alliance 10 years of joint partnership*. Speaking on the occasion he emphasized that the DBT-India Alliance for the next phase should set its priorities for research in environment, lifestyle diseases, infectious diseases and diseases of the brain.
- ii. Recognizing innovation as the cornerstone of the collaboration the *Department of Biotechnology, Ministry of Science & Technology, Govt. of India has signed MoU with Innovaatioahoituskeskus Business Finland (Business Finland)* to cooperate based on their mutual interest with Biotechnology Industry Research Assistance Council (BIRAC), the Public Sector Enterprise of the Department of Biotechnology (DBT), for funding and implementing ambitious industry-led innovative and transnational projects within the broad scope of research and innovation in the areas Mission Innovation, Biofuture platform: biofuels, bioenergy and biomass based products, Environmental and energy applications of biotechnology ,Business development of start-up and growth companies, Education technologies and games in life sciences and other fields of life science industry.
- iii. **Under the India-UK Cancer Research Initiative**, the Department of Biotechnology has announced an ambitious 5-year bilateral collaborative research initiative with Cancer Research UK (CRUK) that will focus on affordability of cancer prevention and care, and the potential to make significant progress against cancer consequences. Both CRUK and the DBT will invest £5m (~47 Crores INR) each in this initiative. This initiative will bring together leading Indian and UK experts to identify a core set of research challenges under the theme “affordable approaches to cancer”, and provide funding to both develop new research alliances and undertake impactful research for affordable solution for cancer treatment.
- iv. Follow-up meeting on ‘*SUGAM Portal and Drug Regulatory Process*’ was held at NITI Aayog under the Chairmanship of Dr. Vinod K. Paul, Member, NITI Aayog on 7th June, 2018. The Department has planned to organize Five National Workshops on facilitating resolution of regulatory concern faced by innovators. In these workshops the regulator will reach out to innovators to help them resolve their regulatory issues and hand-hold them to get market authorization. These workshops will be organized in collaboration with Central Drugs Standards Control Organization (CDSCO) and Biotechnology Industry Research Assistance Council (BIRAC). The First Workshop in this series is scheduled to be held on 10th December, 2018 at New Delhi.
- v. The *Second meeting of the Scientific Sub-Committee (SSC – NTBN) under the National Technical Board on Nutrition (NTBN)* held on 11th October, 2018 under the Co-Chairmanship of Secretary DBT and Secretary DHR. The committee recommended the constitution of a small group to review the proposal presented by National Institute of Nutrition Hyderabad on “*Evaluation of Poshan Abhiyan*” to aid in the preparation of DPR for submission to M/o WCD. As a follow-up to this recommendation, a meeting was organised by ICMR under the Chairmanship of Prof. M.K.Bhan on 17 November 2018 and the committee recommended the

constitution of a working group for finalization of the study protocol. DBT and ICMR are making joint efforts to take this proposal forward.

- vi. The Department of Biotechnology has announced ***India-EU joint call for proposal under Horizon 2020*** (biggest EU Research and Innovation programme). The goal is to ensure that the collaboration produces world-class science and technology, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering solutions to big challenges facing our society. The calls have been announced in three broad areas viz. Health, Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bio-economy and Biotechnology.
- vii. The Department has implemented an Indo-Japan collaborative project on “Accelerating the application of stem cell technology in human disease” where Centre for iPS Cell Research and Application (CiRA), Kyoto University, Japan is an international partner. One of the aims of this programme is to build human resource capacity in our country for the application of modern stem cell technology in the study of human disease. For this a comprehensive training programme has been developed to train the Indian students and young faculty in induced pluripotent stem cell technology at CiRA, Kyoto University, Japan. The programme is very popular and receives a large number of applications every year. This year eight selected Indian researchers successfully completed a one-week training programme on induced pluripotent cell technology at CiRA, Kyoto University, Japan, in the month of November 2018.

viii. Public Sector Units of of the Department of Biotechnology:

- The first ***review meeting for 'Secondary Agriculture Entrepreneurial Network'*** was organized on 29th November, 2018. The Network is coordinated by Punjab State Council for Science & Technology (PSCST) and the partners are National Agri-food Biotechnology Institute (NABI), Center of Innovative and Applied Bioprocessing (CIAB) and BioNest-Punjab University. The major achievements were a) two stakeholder meetings were organized and gap identification has been done in the area of Fruits and vegetables b) Optimization of four of the technologies have been done and c) Five of the incubatees have been identified in the area of secondary agriculture and funding was recommended to develop proof of concept for their ideas.
- ***Third meeting of FIRST HUB was conducted on 2nd November 2018 at BIRAC:*** FIRST HUB was created through recommendation from NITI Aayog to address the queries of Start – ups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc. Till date, three monthly meetings were conducted and more than sixty queries were addressed related to domains of Regulatory pathways, testing and standardization, funding opportunities and Intellectual Property.
- ***BIRAC launched 2nd edition of WInER Awards:*** 2nd edition of BIRAC-TiE Women In Entrepreneurial Research (WInER) Award was announced by Secretary, DBT and Chairperson, BIRAC during the TiE Global Summit 2018, held on 29th November. The award is focused at supporting women entrepreneurs in biotech sector and provides a seed fund of INR 5 lakh to 15 early winners, followed by a weeklong accelerator programme for the awardees to select 3-4 winners for 25 lakh award.
- ***Hands on training workshop was organized at C-CAMP during 13th-16th November:*** The workshop was organized in collaboration with GE Healthcare on '*Principles of downstream techniques and Biacore*'. There were 12 participants from academia and industry. The faculty was from NCBS, C-CAMP and GE Healthcare. The visit of GE healthcare was organized on last day and the content was well received.

- **Hands on training workshop was organized at ICT, Mumbai during 29th-30th November:** The workshop was organized in the area of Biosimilar characterization and there were more than 70 participants from academia and industry. The training was on techniques relevant to up-stream and down-stream processing of the biosimilars as well as regulatory aspects. In continuation of the same, Entrepreneurship day was organized by ICT, Mumbai on 1st December.
- **BIRAC pavilion at the Bangalore Technology Summit 2018:** BIRAC participated in the 21st edition of Karnataka State flagship Information Technology and Biotechnology event, Bengaluru Tech Summit on 29th Nov 2018 at the Bengaluru Palace. The conference had attracted over 10000 visitors, 200+ visionary speakers, 200+ startups and global leaders from 11 countries.
- **BIRAC Participated in IUFOST conference at Mumbai** during 23rd-27th October, 2018 where BIRAC activities were presented. BIRAC showcased its various programs and initiatives. Many Academia and Industries showed keen interest in the area of Food Bio processing and explored the plethora of areas which BIRAC could fund. One of BIRAC supported companies “**S4S Technologies**” showcased its product which is Solar powered- electricity free- dehydrator that uses conduction – convection – radiation – all modes of heat transfer to deliver the world’s highest drying efficiency.

v. Autonomous Institutions of the Department of Biotechnology:

a. Centre for DNA Fingerprinting and Diagnostics, (CDFD), Hyderabad:

- CDFD has received 10 cases for DNA Fingerprinting services and 210 samples for genetic diagnostic services.
- Three papers were published in peer reviewed journals.

b. Center of Innovative and Applied Bioprocessing (CIAB), Mohali :

- Center of Innovative and Applied Bioprocessing (CIAB), Mohali has filed a ***patent on simple and one-pot processes to develop polypyrrolic compounds*** in scalable manner and development of their nano formulations through encapsulation or conjugation forming photosynthetic nanopigments for light harvesting applications.
- An article has been accepted for publication on effect of high pressure processing (HPP) on microbial safety, physicochemical properties, and bioactive compounds of whey-based sweet lime (whey-lime) beverage. HPP processing was found to be an immensely potential technology for the production of high quality whey lime beverage over heat treatment.

c. Institute of Life Sciences, Bhubaneswar :

- Collaborations with two Biotech companies have been established to develop low-cost, ultra-sensitive, molecular diagnostic tools for malaria. In one such collaboration, researchers have identified identical multi-repeat sequences (IMRS) in the parasite genome capable of giving 100 times better sensitivity than 18SrRNA that has been routinely used in malaria diagnosis. This can have a greater impact on malaria elimination and eradication strategies in terms of identifying asymptomatic carriers with sub-microscopic parasitemia that are generally below the detection threshold of routine PCR diagnosis.

d. Institute for Stem Cell Science and Regenerative Medicine (inStem):

- A research article on Infectivity of adeno-associated virus serotypes in mouse testis was published.
- A hands-on training workshop at the CiRA (Center for iPS Cell Research and Application, Kyoto University, Japan) was sponsored under the aegis of the Indo-Japan ADDBS (Accelerator program for Discovery in Brain disorders using Stem cells) programme from

November 7th to 13th and November 14th to 20th, 2018. Eight early career researchers from different institutes across the country were selected from 68 applicants.

- The Bangalore Life Sciences Cluster (of which inStem is a part), celebrated Science Day on November 16th, 2018. Different research groups at inStem and from NCBS and CCAMP showcased their work to the lay public in the form of posters, exhibits and scientific demonstrations. More than 1000 people of different age groups visited the Bangalore Life Sciences Cluster to learn more about the research performed on the campus.

e. National Agri-Food Biotechnology Institute (NABI), Mohali:

- One process patent for the production of composite films and coating emulsions based on wheat straw arabinoxylan and oat bran β -glucan-stearic acid ester (Indian patent application No: [201811032781](#)) was filed. This invention involves improved method for the extraction of arabinoxylan from wheat straw and stearic acid derivatization (esterification) of oat bran β -glucan.
- Researchers at NABI have developed an efficient protocol for somatic embryogenesis and recovery of genetic transformants of banana cultivar Grand Naine. The optimized efficient protocols pave the way to generate a high number of transgenic lines with desirable traits in important commercial banana cultivar Grand Naine.
- NABI-CIAB organised two day young scientist symposium "Chintan 2018". The symposium consisted of five scientific sessions dealing with plant biotechnology, genomics, post harvest technology, functional food and bioprocessing.

f. National Institute of Immunology, New Delhi:

- Institute's efforts to do high quality basic research have resulted in 6 publications in reputed journals.
- During the reporting period a *European patent* (Application Number 17788946.6) on "*Typhoid vaccine comprising Chemical Conjugate of VI Polysaccharide and Flagellin, A Process for Producing the same and A Composition Comprising the Conjugate*" was filed.
- For promoting exchange of ideas, dissemination of information and explore collaborations, following seminars were arranged:
 - Dr. Vinesh Vinayachandran, Research Scientist at School of Public Health, John Hopkins University, Baltimore USA delivered a talk on "Poised epigenome".
 - Dr. Shubhankar Dolai, University of Toronto, Canada delivered a lecture on "Role of SNARE-mediated Exocytosis and Autophagy in Pathogenesis of Pancreatitis".
 - Dr. Santiswarup Singha, University of Calgary, Canada delivered a lecture on "Nanomedicine for Autoimmune Diseases and Cancer".
 - Prof. Rafi Ahmed, Emory Vaccine Centre, Atlanta, USA delivered a lecture on "T Cell Exhaustion and PD-1 Immunotherapy".
 - Prof. Michael McHeyzer-Williams, Dept of Immunology and Microbiology, Scripps Research, California Campus delivered a lecture on "Understanding B cell memory-one cell at a time".

g. National Institute of Plant Genome Research, New Delhi:

- In total, during this month, NIPGR scientists have published three articles in reputed journals. These include articles on (i) studies on nodule development for improving biological nitrogen fixation in the crop legume chickpea, (ii) identification of mutants for improving the seed size in chickpea cultivars via whole genome resequencing and (iii) role of neomycin in understanding JA-induced responses across the plant kingdom.
- NIPGR joined hands with Shiv Nadar University (SNU), IIT Delhi and the Inter University Accelerator Centre (IUAC) to organize the first Delhi Youth Science Camp for high school children on 15th November 2018.
- NIPGR, on the occasion of its Foundation Day, has organized a public lectures on (i) "Science, the Scientific Method & Romance with Bioentrepreneurship" (i) 'The GMO Wars: What do we do when scientists and citizens deeply disagree?' and (ii) 'Ultrafast Structural changes in Photosynthetic Reaction Centres' by renowned scientists.

h. National Centre for Cell Science (NCCS), Pune:

- Seven research articles were published during the period. These included articles on (i) involvement of a subtilisin-kexin in hepatocellular carcinoma associated hypercholesterolemia, (ii) metabolic regulation of infection and inflammation, (iii) evidence of artemisinin-resistant *Plasmodium falciparum* malaria in Eastern India, (iii) Multidisciplinary involvement and potential of thermophiles, (iv) Description of two new species of Aliinostoc and one new species of Desmonostoc from India, (v) improved recovery after cryopreservation by trehalose and (v) studies on microbes that inhibit favour dysgenic diversity in oxalatestone disease.

i. Regional Centre for Biotechnology (RCB), Faridabad

- A mini-symposium was organized on March 24, 2018 at the end of the ‘First RCB Bioimaging School’. The mini symposium was designed to facilitate scientific exchange between researchers of the Biomedical Research Institute (BRI), AIST Japan and RCB, Faridabad to promote scientific collaboration.
- A research article on artificial micro RNA-mediated inhibition of Japanese Encephalitis virus replication in neural cells was published.

j. Translational Health Science and Technology Institute (THSTI), Faridabad

- Five scientific research articles were published during the year. This included articles on (i) improvement of Diabetic Heart Health through molecular approaches, (ii) effect of insufficient vitamin D on coronary artery diseases in people with Diabetes, (iii) molecular studies in *Mycobacterium tuberculosis*, (iv) importance of CitE in establishing infection in macrophages and (v) detection of uncommon enteric bacterial pathogens from acute diarrheal specimens.
- Following conferences/symposia/workshops were held at THSTI:
 - THSTI hosted the 45th Annual Meeting of the Indian Immunology Society from 1-3 November, 2018. The theme of Immunocon 2018 was Immunotherapy and Advances in Immunology.
 - Under the NCR Biotech Science Cluster Seminar Series held on November 19, 2108 three lectures were organized on the theme Diagnostics: Recent Advances and Perspectives
 - The International Vaccine Institute (IVI) and the Translational Health Science and Technology Institute (THSTI) of India organized a joint symposium at IVI headquarters in Seoul, Korea on November 22. More than ten speakers, including four from THSTI and other participants from the Korea Health Industry Development Institute (KHIDI) and India’s Department of Biotechnology (DBT), participated in the one-day symposium to share an overview of current research and development projects at THSTI and IVI, as well as to discuss common interests while exploring collaboration opportunities.

2. Important policy matters held up on account of prolonged inter-ministerial consultations: NIL

3. Compliance of Cabinet/Cabinet Committee decision:

No. of COS decisions pending for compliance	Proposed action plan/time lines for compliance of COS decisions	Remarks
NIL	NA	NA

4. No. of cases of ‘sanction for prosecution’ pending for more than three months: NIL

5. Particulars of cases in which there has been a departure from the Transaction of Business Rules or established policy of the Government: NIL

6. Status of implementation of e-Governance:

Total No. of files	Total No. of e-files
3520	515

7. Status of Public Grievances:

No. of Public Grievances redressed during the month	No. of Public Grievances pending at the end of the month
29	82

8. Information on the specific steps taken by the Ministry/ Department for utilization of the Space, Technology based tools and application in Governance and Development: NIL

9. (i) Confirmation that the incumbency details of all posts in the Ministry/Department and its organizations falling under the purview of the ACC have been updated on AVMS: It is confirmed that the incumbency details of the posts in the Ministry/ Department and its organizations following under the purview of the ACC have been updated on AVMS and are placed at Annexure-1.

(ii) Status regarding compliance of the directions of ACC: It is also confirmed that the directions of ACC are complied with.

(iii) Status of cases where recommendations from PESB have been received but the proposals are yet to be submitted to the ACC Secretariat: Nil

(iv) Status of Government e-Marketplace (GeM) usage: A procurement incurring expenditure of **Rs. 2,73,597/-** was made through GeM portal.
