

Government of India
Ministry of Science and Technology
Department of Biotechnology

Monthly Cabinet Summary, October - 2018

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

- i. The four-day long mega science expo, the **4th India International Science Festival (IISF)** was held in Lucknow from 5th to 8th October 2018. IISF-2018 witnessed a vast gathering of more than 10 lakh people and more than 22 thousand registrations, the highest in its four-year history making it the largest festival of its kind in Asia. IISF which was inaugurated by the President of India Shri Ram Nath Kovind and saw a confluence of Scientists, researchers, students, farmers and people from a wide spectrum discussing, debating, and witnessing how science and technology are shaping New India. IISF-2018 with its focal theme “Science for Transformation” had more than 23 special events in its 4th edition. IISF-2018 also saw two major Guinness World Records being made, one of which was a World Record successful attempt to “isolate DNA” by 550 students from class 8th to 10th standard. Union Minister Shri Nitin Gadkari who was the chief guest at the valedictory function launched a website dedicated exclusively to science in India.
- ii. Considering AMR as a National priority, under National Action Plan endorsed by Govt. of India, the Department has initiated a major **Mission program on Antimicrobial Resistance** in October, 2018 with the vision to develop indigenous and cost-effective therapies against AMR; categorization of AMR-specific pathogen priority list of India; establishment of Bio-repository for AMR-specific pathogens; and development of rapid and cost-effective diagnostic kits to identify AMR-specific pathogens. Under this Mission program, the Department has notified National Centre for Microbial Resource (NCMR), National Centre of Cell Sciences, Pune to function as Bio-repository for resistant microbes/infective agents (Bacteria and Fungi)” and to carry out collection, storage, maintenance, preservation and characterization of these microbes across the country. Further, in a process to fulfill the ambition of this program, the department in collaboration with Biotechnology Industry Research Assistance Council (BIRAC) has announced a joint Call on 1st October, 2018 in the area of development of new antibiotics and alternatives to antibiotics to counter AMR.
- iii. An Memorandum of Understanding was signed between the Department and The Energy and Research Institute (TERI) on 31st October 2018 for setting up of **DBT–TERI Centre for Integrated Production of Advanced Biofuels and Bio commodities**. This is the DBT’s fifth Centre of Excellence in Bioenergy. The centre has been established in collaboration with Agricultural Research Institute, New Delhi, Indian Institute of Technology-Guwahati, Transtech Green Power Limited, Jaipur and ONGC Energy Centre, Delhi NCR. The centre focus on the unique concept of integrated production of advanced biofuels and bio-commodities based on the multidisciplinary research expertise of TERI including previous success in establishing photo bioreactor of 10,000 litre capacities for round the year production of high lipid containing algal strain, pilot scale (1500 litre) scale biohydrogen production through dark fermentation process and pyrolytic bio-oil production.
- iv. The Department announced the programme on “**Accelerate Translational Grant for Commercialization (ATGC)**” to translate research leads beyond early stage validation and encourage academia to develop technology/product & processes. The programme aims to support proposals aiming at late stage validation, to accelerate translation of laboratory research beyond early stage validation and to bridge the innovation gap through partnerships and to provide support systems. The scheme invites proposals under two components (a) Academic Lead Translation (ALT) and (b) Academic Industry Translational Research (AITR).

- v. During the 168th meeting of Review Committee of Genetic Manipulation (RCGM) 92 applications were considered and appropriate decisions were taken.
- vi. The Department has constituted 15 Institutional Biosafety Committees during the period under report.
- vii. Comments were communicated to DSIR on 4 applications received for recognition of their R&D units.
- viii. The Department has recommended one patent application for prior art search and one patent for maintenance, to the empanelled patent attorneys.

xvi. Autonomous Institutions of the Department of Biotechnology:

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

- During the month of October, 2018, CDFD has received 10 cases for DNA Fingerprinting services and 234 samples for genetic diagnostic services and 3 Basmati Rice sample for adulteration analysis.
- A Public Lecture by Prof D Balasubramanian, LVPEI, Hyderabad as part of 4th IISF-2018 was held in CDFD.
- Dr Sorab Dalal, Senior Scientist, ACTREC, Mumbai gave a lecture on “LCN2 could be a potential therapeutic target in multiple tumor types”.
- Two scientists were elected as fellows of the National Academy of Sciences, India (NASI) and one was elected as fellow of A.P. Akademi of Sciences-FAPAS for the year 2018.
- A student was selected to participate in the CiRA special training course on “Generation and maintenance of human iPS cells” at Center for iPS Cell Research and Research and Application Kyoto University, JAPAN.
- In October, 2018, 6 papers were published in peer reviewed journals.

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

- CIAB participated and showcased its research technologies in 4th India International Science Festival (IISF) 2018 in Lucknow. CIAB has also participated in various activities of IISF-2018 such as Mega Science, Technology and Industry Expo, Outreach programme, Women Scientists’ & Entrepreneur Conclave (WSE), Young Scientists’ Conference (YSC), etc.
- Two Research articles were accepted for publication on development of novel base metal-containing catalysts and a novel approach to produce glucose from the supernatant obtained upon the dilute acid pre-treatment of rice straw.

c. Institute of Life Sciences, Bhubaneswar :

Along the line of work on chronic myeloid leukemia, the institute has shown:

- that BCR-ABL targets miR-223 and that result in the activation of MEF2C and PTBP2 in chronic myeloid leukemia,
- that JAK inhibitors along with TKIs can eradicate CML lineage negative cells
- the functional identification of mRNA-miRNA regulatory network(s) present in chronic myeloid leukemia stem and progenitor cells.

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

- inStem participated in the 4th IISF, 2018 at Lucknow where a kiosk was hosted by the institute. Hundreds of people of different age-groups visited the kiosk and learnt about different thematic areas of research pursued at inStem. Multiple posters of core and collaborative activities at inStem and its partnering institutions NIMHANS, CMC-Vellore amongst others, as well demonstrations and interactive spaces showcasing regeneration were some of the aspects at the inStem kiosk.
- The inaugural symposium of a new centre at inStem (TIGS-CI), a partnership between the Tata Institute of Genetics and Society, India and inStem was organized on October 24th and 25th 2018. Titled 'New Tools and Technologies for Health and Agriculture', the symposium hosted scientists from India, USA and UK as well, and ~100 students and postdocs from institutes in the country.
- Two articles from inStem focusing on prevention of pesticide-induced neuronal dysfunction/mortality and regulation of ribosomal RNA methylation were accepted for publication.

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

- Multiple MOUs dealing with the licensing of anthocyanin biofortified coloured wheat with antioxidants were signed with companies like M/s Puddings & Pies, Mohali, Punjab; M/s Bishwanath Agrawal, Purnea, Bihar; M/s Premier (India) Seed Company.
- Two publications were accepted for publication. The first publication deals with providing insight for the role of specific bZIP proteins in amylose biosynthesis in wheat using TILLING population. The other publication deals with studies on targeting bZIP53 involved in stress response and seed maturation in *Arabidopsis thaliana*.

f. National Institute of Immunology, New Delhi:

- During the reporting month, an US patent "A novel conjugate for vaccination against Typhoid comprising chemical conjugate of VI polysaccharide and Flagellin, a process for producing the same and a composition comprising the conjugate" has been filed.
- NII has signed two 'Material Transfer Agreements' (MTA) with Addgene (USA) to procure biological materials for carrying out particular biological research experiments.
- Six research articles have been published in reputed journals.
- NII celebrated celebrating its 32nd Foundation Day on 03/10/18. On this occasion, the foundation day lecture was arranged on "Engineering if Life". It was delivered by Prof. Purnendu Ghosh, Executive Director from Birla Institute of Scientific Research Jaipur, Rajasthan.
- During the reporting month, the scientific staff and students of the institute attended and showcased their work in the 4th IISF in Lucknow.
- The following seminars by faculty of various scientific organizations were arranged:
 - Dr. Dipyaman Ganguly, MBBS, PhD, Senior Scientist and Swarnajayanti Fellow from IICB-Translational Research Unit of Excellence (IICB-TRUE), Kolkata delivered a lecture on "A pathogenetic continuum for systemic autoimmunities and metabolic syndrome: role of type I interferons".
 - Dr Dipayan Rudra, Academy of Immunology and Microbiology (AIM)/ POSTECH Campus, Institute for Basic Science (IBS), South Korea delivered a lecture on "Immunological Tolerance and Regulatory T-cells".

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

- Institute scientists have published eight research articles in international peer reviewed journals. This includes a study that provides insights into novel physiological roles of OsGDPD2 in low Pi acclimation in rice. In another study, intron-spliced hairpin RNAi based strategy for low glucosinolate lines in polyploid *Brassica juncea* has been standardised. To facilitate identification of virus-derived small interfering RNAs (vsiRNAs) in plants, a manually curated plant-exclusive database 'PVsiRNAdb' has been developed. Two review articles have been published on the quest on sugar metabolic alterations that influence plant-pathogen interactions and on understanding the role of Nitrate, NO and ROS signaling in stem cell homeostasis.
- The Institute organized an Open Day/Public Outreach Day on 26th October 2018. In this event, more than eleven hundred students from thirty different schools encompassing both government & private and three colleges participated along with their teachers. In this event, NIPGR community presented 31 posters and 18 exhibits on plant science.
- The DBT-UKRI-NIPGR "Women in Leadership" discussion meeting was organised on October 24, 2018, as a part event of UKRI INDIA Launch and Tenth Anniversary Celebrations of Indo-UK Research and Innovation Funding.
- Furthermore, two scientists of the Institute, have been elected as Fellow each of the Indian National Science Academy (INSA) and the National Academy of Sciences, India (NASI). One of the Ph.D. Students has received "Newton-Bhaba Ph.D. placement fellowship" for completing part of her Ph.D. in the UK.

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

- During the month seven research articles were published. These included articles on (i) development of bacterial consortia for the remediation of e-waste, (ii) mechanism of regulation of actin polymerization, (iii) microvesicles boosted engraftment potential of Hematopoietic Stem Cells, (iv) oncogenic function of noncoding RNA, (v) a novel strategy toward development of breast cancer early diagnosis biomarker signature, (vi) Prediction and identification of novel sRNAs involved in *Agrobacterium* strains, and studies on diversity of Yeasts and Molds in Traditionally Prepared Dried Starters for the Production of Indian Alcoholic Beverages.

i. National Institute of Animal Biotechnology (NIAB), Hyderabad:

- Four articles were published during the month. These included articles on the role of DNA break repair in oocyte quality control, a Real-Time PCR based assay for analysing clinical samples of Bovine theileriosis, synthesis and antiviral study of novel benzamide derivatives, and immuno-informatics analysis to identify novel vaccine candidates and design of a multi-epitope based vaccine candidate against *Theileria* parasites.
- Dr. Amit Goyal delivered a lecture on "Current approaches and advancements in novel drug delivery system" at MPCST sponsored National seminar at IES group of institution at Bhopal.
- Dr. Pankaj Suman delivered a lecture on "Doubling farmers income through technological breakthrough in goat rearing" in the one day brainstorming workshop on "Enhancing farmers' income through animal husbandry using biotechnological tools" organised by DBT and NDDB at NDDB Anand.

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

ii. **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
3124	415

7. **Status of Public Grievances:**

No. of Public Grievances redressed during the month	No. of Public Grievances pending at the end of the month
27	79

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. 2,67,636/- was made through GeM portal.
