

Government of India
Ministry of Science and Technology
Department of Biotechnology

Monthly Cabinet Summary, December- 2018

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

1.1 Important policy decisions taken during the month:

- a) **Inter-Ministerial Cooperation for Promotion and Facilitation of Innovative Research on Phytopharmaceuticals:** The MoU amongst CSIR, DBT and ICMR has been signed for mutual collaboration to develop phytopharmaceutical products for therapeutic use following international standards and norms for establishing safety, quality, standardization and efficacy. The effort would be to take forward the leads already existing with CSIR, DBT and ICMR and develop specific collaborative projects in the domain aiming at rigorous modern scientific testing and development of standard products to maintain global competitiveness.
- b) **Inter-Ministerial Cooperation for Promotion and Facilitation to have a biotechnological intervention in AYUSH sector:** The MoU between Ministry of AYUSH and DBT was signed for mutual collaboration to explore the possibility of cooperation, convergence and synergy to boost innovative research on biotechnological intervention in AYUSH sector and to have a platform for exchange of information between both the Ministry of AYUSH and DBT.
- c) The first meeting of the Sub-Committee to work out general principles and data requirements for risk assessment on genome editing technologies, applications & regulations on Humans was held on 26.12.2018 and the Committee deliberated on the **draft document titled “Genome Editing: Regulatory Policy Framework and Risk assessment of Genome Edited (Products/Organisms)** and sought comments from experts for finalization of the document.

1.2 Major Achievements during the month:

- a) **National Workshops on “Regulatory Compliances For Accelerating Innovations”:** As per the recommendations of Niti Aayog to organize five National Workshops on “Regulatory Compliances For Accelerating Innovations”, the Department along with its Public Sector Unit, BIRAC organized first National Workshop to facilitating resolution of regulatory concern faced by innovators on 10th December, 2018 at International Centre For Genetic Engineering and Biotechnology (ICGEB), New Delhi. The workshop was organized in collaboration with Central Drugs Standards Control Organization (CDSCO) and Biotechnology Industry Research Assistance Council (BIRAC).
- b) **Meeting of the National Technical Advisory Group on Immunization:** The National Technical Advisory Group on Immunization (NTAGI) meeting was held on December 17, 2018 at Nirman Bhawan, New Delhi under the chairpersonship of Ms. Preeti Sudan, Secretary, Ministry of Health and Family Welfare (MoHFW) and co-chairpersonship of Dr. Renu Swarup, Secretary, Department of Biotechnology (DBT) and Prof. Balram Bhargava, Secretary, Department of Health Research (DHR) & DG-ICMR. The NTAGI discussed the points raised in its previous meeting including an update on the Typhoid Disease Surveillance, Typhoid Conjugate Vaccine, Cholera Disease Burden and on inactivated JE vaccines in India. The NTAGI was also updated the status on the indigenous Rotavirus Vaccines and on the leprosy disease burden for potential introduction of Leprosy Vaccines in National Leprosy Elimination Program of India. The NTAGI has constituted a Leprosy Working Group to review and communicate findings to STSC before consideration by NTAGI.
- c) **Meeting of Steering Committee of National Biopharma Mission:** The second meeting of the Steering Committee of the National Biopharma Mission (NBM), a Cabinet approved

programme of DBT, was held on 18th December, 2018 under the Chairpersonship of Secretary, DBT. Progress of NBM activities was discussed along with the strategies for newer technologies and the way forward for production.

- d) **Meeting of FIRST HUB:** The 4th meeting of FIRST HUB, a Facilitation Cell for the Start-ups/ innovators to address their queries related to regulation, investment etc. was held. This was organised with BIRAC with participation of DCGI, BIS, ICMR and DBT.
- e) **Indo-Swiss Collaboration in Biotechnology (ISCB) Symposium** on “Enhancing the farm income through biotechnological innovations and socio-economic research in India” was organised jointly by DBT and Swiss Development Co-operation, Federal Department of Foreign Affairs on 3rd–4th December 2018 at National Agriculture Science Centre, New Delhi as part of "Indo-Swiss Collaboration in Biotechnology that started in 1974, and entered its new phase in 1997. Symposium was inaugurated by Chief Guest, Dr. Renu Swarup, Secretary, and Department of Biotechnology. Mrs. Tamara Mona, Minister and Deputy Head of Mission, The Embassy of Switzerland in India and Dr. A.K. Singh, DDG, ICAR, were Guest of Honour. Symposium was attended by hundred participants from both the Indian and Swiss side. The collaboration in its last two decade achieved scientific excellence with *17 Patents, 443 articles & scientific publications* and *transfer of 4 technologies* through non-exclusive licensing agreements with Indian companies and public institutes for final steps of product development for *bio-fertilizer, chickpeas (Cry and ASAL technologies) and bio-pesticide*.
- f) Under the Mission Programme on **Biotech-Krishi Innovation Science Application Network** (Biotech-KISAN), a special call for proposals for establishing Biotech-KISAN Hubs in four agro-climatic zones in the country: i) Eastern Plateau & Hills ii) Gujarat Plain & Hills iii) Western Dry Region iv) Islands was announced. Objective of the programme is linking available science and technology to the farm by first understanding the problem of the local farmer and provide solutions to those problems, working together, in close conjunction, of scientists and farmers to improve the working conditions of small and marginal farmers, especially the woman farmers for better agriculture productivity through scientific intervention and evolving best farming practices in the Indian context.
- g) The Department has constituted 8 Institutional Biosafety Committees during the period under report.
- h) Comments of the Department were communicated to DSIR (Department of Scientific & Industrial Research) on 3 applications received for in-house R&D recognition.
- i) Comments of the Department were communicated to Directorate General of Foreign Trade (DGFT) on 2 applications received on fixation of Inputs/ output norms.
- j) The Department has recommended 2 patent applications for prior art search and 3 patents for maintenance, to the empanelled patent attorneys.

1.3 Public Sector Units of of the Department of Biotechnology:

- BIRAC and Nesta, UK jointly organized a two day residential accelerator programme from 10th-11th December, 2018 at SINE, IIT Mumbai. The Programme was meant for the Indian teams competing for the Longitude Prize and provided the participants insights into clinical utility, clinical validation and regulatory filing in Indian and UK settings, costing-pricing issues, help to become Industry ready and pitching guidance by business, technical, regulatory and clinical experts. The final day (12th December) had pitching sessions by 7 team and 3 teams were awarded Boost Grant of up to £100,000 sponsored by BIRAC. The winners included Module Innovations, NanoDx, Omix& Spotsense.
- BIRAC launched 2nd Call for Proposals inviting Private Funds to apply under AcE Fund. Biotechnology Innovation Fund–AcE (Accelerating Entrepreneurs) Fund is an equity "Fund

of Fund" 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

- BIRAC participated and facilitated participation of startups (including Flycatcher Technologies, Sascan Meditech and Aindra Systems) in SLUSH 2018 at Helsinki, Finland. SLUSH is a start-up and tech event, organized annually by a community of entrepreneurs, investors, students, and festival organizers. The very core of SLUSH is to facilitate founder and investor meetings and to build a world-wide start-up community.

1.4 Autonomous Institutions of the Department of Biotechnology:

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

- Following public lectures/ conferences/workshops and events were organised during the month:
 - Dr. Ranjan Sen, Chief, Laboratory of Molecular Biology and Immunology Biomedical Research Center, National Institutes of Health/National Institute on Aging, Baltimore gave a lecture on "Kinetic patterning of NF- κ B-dependent gene expression".
 - Dr Madhu Dixit, THSTI National Chair gave a talk on "Molecular mechanisms involved in ROS generation and microbial killing by neutrophils".
- CDFD received 9 cases for DNA Fingerprinting services, 204 samples for genetic diagnostic services and received 2 Basmati Rice sample for adulteration analysis.
- 5 papers were published in peer reviewed journals.

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

- A 'Workshop on Whole Genome Sequence Analysis' with a special focus on human diseases was jointly organized by the Accelerator program for Discovery in Brain disorders using Stem cells (ADBS) program and the Institute of Bioinformatics and Applied Biotechnology (IBAB) from December 05th – 07th, 2018. ADBS is a collaborative DBT funded program between inStem, NCBS and NIMHANS, Bangalore. Eighteen participants were chosen from amongst 138 applications received from early-career scientists from across the country.
- The Bangalore Life Science Cluster, in partnership with Mandram, hosted a public event, 'Traditional knowledge meets modern science' on 15th December 2018 as part of the Jigyasa Project, to expand the communication of science in vernacular languages. Dr. Dhandapany Perundurai, a faculty in the cardiovascular biology and disease (CCBD) theme at inStem spoke on 'Genetic conditions and Lifestyle' at the public event.
- Two research articles on enhancement of gut barrier integrity by a microbial metabolite and chemical fuel-driven living and transient supramolecular polymerization were published.

c) National Agri-Food Biotechnology

- A team of scientist and delegation from Canada visited NABI on 4th Dec and had discussion with NABI scientists so as to identify common research themes to explore for the possibility of having collaborative projects.
- Four research articles were accepted for publication. One of the important accepted works describes the role of candidate bZIP proteins in amylose biosynthesis in wheat by performing genome survey and transcriptome analysis.

d) National Institute of Animal Biotechnology (NIAB), Hyderabad:

- A research article on Peptides in Preclinical and Clinical Cancer Diagnosis and Therapy, was published.
- Following public lectures/ conferences/workshops and events were organised during the month:
 - Dr. Pankaj Suman delivered a guest lecture on "Recent advances in animal biotechnology to improve reproductive efficiency and production" at College of Veterinary and Animal Sciences, Parbhani, Maharashtra on the occasion of Agricultural Education day and the Foundation day of MAFSU, Nagpur

- Dr. H.B.D. Prasad Rao delivered invited talk entitled “Coordinate Regulation of Chromosome Length and Recombination by SUMO” during International conference on Genome architecture and cell fate regulation held at University of Hyderabad
- Dr. Nagendra Hegde delivered a lead lecture on antimicrobial resistance: chicken or egg? chaired a session at the 59th Annual Conference of Association of Microbiologists of India and International Symposium on Host Pathogen Interactions, at University of Hyderabad.
- Dr. Syed M. Faisal delivered talk on Leptospirosis: A neglected zoonosis at Government Medical college, Kozikhode and Malankara Orthodox Cristian Medical College, Kolenchery, Kerala

e) National Institute of Immunology, New Delhi:

- Twelve research articles were published during the month.
- An Indian patent on “A method of mimicking benefits of dietary restriction by transiently upregulating ER stress response” with application no 201811047507 has been filed.
- Two Material Transfer Agreements (MTA) were signed with (i) American Type Culture Collection (ii) International Medical University to procure biological material for carrying out biological research experiments.
- For promoting exchange of ideas, dissemination of information and explore collaborations, following seminars by faculty of various scientific organizations were arranged:
 - Dr. Upendar Manne, Professor of Pathology & Surgery, Wallace Tumor Institute, University of Alabama, Birmingham delivered a lecture on "Molecular Biomarkers of Colorectal Cancer: Translational Opportunities" on 06/12/18.
 - Dr. Andrei Budanov, Ussher Assistant Professor, School of Biochemistry and Immunology, Trinity Biomedical Science, Institute Trinity College, Dublin delivered a lecture on "Sestrins – the guardians of well-being" on 13/12/18.
 - A health education lecture on breast cancer awareness was delivered by Dr Piyush Bajpai from Medical Oncology of Human care Medical Charitable trust from Manipal Hospital, New Delhi on 13/12/18.
 - Prof. David Baker, University of Washington, Raman Chair Professor Indian Academy of Sciences delivered a lecture on “The Coming of Age of De Novo Protein Design” on 24/12/18.
 - Prof. Hannele Ruohola-Baker, University of Washington delivered a lecture on “Metabolic enzyme NNMT regulates the first critical PRC2 activity in embryonic lineage” on 24/12/18.

f) National Institute of Plant Genome Research, New Delhi:

- Scientists have published 5 research/review articles during this period. These included articles on genomics approach for enhancing the seed yield, quality and productivity in chickpea, regulatory networks involved in seed storage protein synthesis and accumulation in chickpea, understanding resistance mechanism against rice blast disease, the efficacy of chlorogenic acid as anti-herbivore defense molecule in plants, biotechnological approaches to reduce the oxalate content of plant tissues and influence of nitrate nutrition in hypoxia condition in Arabidopsis.
- Following public lectures/ conferences/workshops and events were organised during the month:
 - NIPGR has organized scientific lectures on (i) ‘Extracting information on iron regulation by coexpression networks’ and (ii) ‘Exploring the hidden half’ by renowned scientists from University of Nottingham, UK and Heinrich Heine University Düsseldorf, Germany,
 - Further, two days national workshop on ‘Data Curation and Data Development’ was organised to train the researchers on NSG data analysis, data curation and database development.

g) National Centre for Cell Science (NCCS), Pune:

- During the month, 5 research articles were published in reputed journals. These included articles on (i) Proteogenomic analysis of Burkholderia species strains to cope with uranium stress, (ii) Biology and therapeutic implications of breast cancer stem cells, (iii) understanding of molecular approaches in cancer chemoresistance with focus on multiple myeloma (iv) immune cell signaling, (v) artemisinin resistance in eastern India, (vi) estrogen-dependent suppression of osteoclast differentiation mediators of tumor suppressive in glioblastoma (vi) factors mediating pluripotent state of embryonic stem cells, (vii) regulation of breast cancer cell tumorigenesis, and (viii) Volatilomic insight of head and neck.

h) Regional Centre for Biotechnology (RCB), Faridabad

- Three research articles were published in during the month. These included articles on understanding replication of Japanese Encephalitis Virus and neuronal death, and factors promoting rapid replication of Dengue and Japanese encephalitis viruses
- The 1st RCB Mass Spectrometry & Proteomics Workshop was held at the Regional Centre for Biotechnology from December 17th to December 20th, 2019. The meeting was attended by 17 participants from different institutes/universities within India and the instructors included 12 seminar speakers and 5 technical instructors.

i) RGCB, Thiruvantapuram:

- During the month 4 research articles were published on (i) Transcriptome-based mining and expression profiling of *Pythium* responsive transcription factors in *Zingiber* sp. (ii) Transcriptional analysis and histochemistry reveal a dominant role for cell wall signaling in mediating *Pythium myriotylum* resistance in *Zingiber zerumbet*. (iii) A guide to total quality management system (TQMS) in molecular diagnostics from experiences in seeking accreditation and implementation, and (iv) Direct one step-one tube multiplex PCR technique detects type 1 dengue virus in *Aedes albopictus* in certain eco zones of Kerala and confirm Trans-ovarian transmission of the virus and (v) A curated resource for phosphosite-specific signature analysis.

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

- MOU between THSTI and AIIMS for AIIMS-THSTI collaborative platform was signed 3rd December 2018 for the purpose of bridging the clinician-scientist gap. The mission of collaborative platform is to promote a systematic organized approach to solve the unmet challenges in medical practice and health services by engaging experts from multiple disciplines both within and outside the scope of a problem.
- MOU between CDSA, Forum for Ethics Review Committees in India, and PATH CDSA, FERCI and PATH was signed for development of Clinical Research Advancement towards Excellence (CReATE), a software suite of five digital tools to create a sustainable integrated electronic research application system that will empower medical / research institutions to enhance management of their research ethics review process, facilitate a common review process for multi-center research and empower researchers to improve quality of research proposals.
- Two research articles on Serum Protein Signature of Coronary Artery Disease in Type 2 Diabetes Mellitus characterization of Dengue virus clinical isolates from pediatric patients in New Delhi were published.

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
4126	562

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	88

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. 7,75,919/- was made through GeM portal.
