Press Releases 2023
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Science for Development
CONTENTS PAGE

4
Full articles published in international press
January - December 2023

100
Radio, Television and streaming

101
ICGEB Web site news posts
January - December 2023

109
More on our Website
ICGEB Press & Media
https://www.icgeb.org/resources/media-press/
Dr Ramesh Venkata Sonti is the new Director of ICGEB

He succeeds Dr Dinakar M. Salunke who was at the helm for over six years.

By BioVoice News Desk · January 2, 2023

New Delhi: Renowned plant scientist, Prof. Ramesh Venkata Sonti has joined the International Centre for Genetic Engineering and Biotechnology (ICGEB) as the new Director on January 01, 2023. He succeeds Dr Dinakar M. Salunke who was at the helm for over six years.

Well known for his deep research in agriculture biotechnology, Dr Sonti’s research has focused on understanding plant-pathogen interactions using, as a model, rice and the bacterial pathogen, Xanthomonas oryzae pv. oryzae (Xoo). His work has led to the identification of novel Xoo virulence functions. These include: an adhesin like protein that plays an important role in attachment to and entry into rice leaves; an extra cellular signaling molecule that facilitates virulence by promoting iron uptake; a bacterial secretion system and its secreted proteins which are involved in degrading rice cell walls; lipopolysaccharide and extracellular polysaccharide; and a phytase like secreted protein.

Dr Sonti has led a team of scientists of CCMB and the Directorate of Rice Research, Hyderabad that together developed a rice variety called ‘Improved Samba Mahsuri’ which has been released for commercial cultivation. This variety is resistant to the serious bacterial blight disease that is caused by Xoo. He has been a Member of the International Organizing Committee for two International Conferences on bacterial blight of rice that have been held in Japan and China.

Dr Ramesh Sonti is a recipient of the SS Bhatnagar Prize in Biological Sciences and the National Bioscience Award for Career Development of the Department of Biotechnology. He
The UN Technology Bank (https://www.un.org/technologybank/), TWAS (https://twas.org/) and ICGEB (https://www.icgeb.org/) offer early-career scientists from the 46 least developed countries (https://www.un.org/ohrlls/content/profiles-ldcs) (LDCs), aged 45 or under, exchange visits of up to six months at the ICGEB laboratories in Trieste (https://www.icgeb.org/location/trieste/) (Italy), (https://www.icgeb.org/location/newdelhi/)

Trieste/Gebze – Scientific skills and personal engagement alone are not enough to develop a career in science, especially in developing countries. Assets to build high-quality education and achieve meaningful results include learning from experienced researchers to guide scientific growth and creating a collaborative network for long-term support and cooperation.
ICGEB Establishes Regional Research Centre In Kenya

By Anne Mwale and Elizabeth Simiyu

Kenya has been selected by the International Centre for Genetic Engineering and Biotechnology (ICGEB) Board of Governors to host its first Regional Research Centre (RRC) in Africa, to complement the one in China.

The board which runs 46 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India and Cape Town, South Africa has also approved the appointment of National Commission for Science, Technology and Innovation (NACOSTI) Director General Professor Walter Oyawa as ICGEB Governor for Kenya.
ICGEB Receives Grant to Strengthen and Expand Biosafety Systems in Subsaharan Africa

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TRIESTE, Italy – The International Centre for Genetic Engineering and Biotechnology (ICGEB) today announced a $3 million grant from the Bill & Melinda Gates Foundation to help support the development of effective safety and regulatory systems for biotechnology in Africa. The project will focus on improving training, information, and other support to regionally based specialists so African countries have the opportunity to safely access scientific advances.

To read the full press release, visit the ICGEB Web site.

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The ICGEB is a unique intergovernmental organisation initially established as a special project of UNIDO. Autonomous since 1994, it runs 46 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India and Cape Town, South Africa and forms an interactive network with over 65 Member States. It plays a key role in Biotechnology worldwide for excellence in Research, Training and Technology Transfer to industry to contribute in concrete terms to the achievement of sustainable global development and its operations are aligned to those of the United Nations System.

The ICGEB is dedicated to advanced research and training in molecular biology and biotechnology and advancing knowledge, applying the latest techniques in the fields of:

- biomedicine
- crop improvement
- environmental protection/remediation
- biopharmaceuticals, biopesticide and biofuel production

At present 700 people, from over 40 different countries, work at the ICGEB, of which almost 600 are scientific personnel, including research scientists, postdoctoral fellows, PhD students, research technicians.
Covid, negative test but deadly pneumonia: study investigates latent virus

They have the Covid test which has been negative for a number of days that can be close to a year, but nevertheless they suffer from potentially lethal pneumonia, very similar to that associated with an acute Sars-CoV-2 infection. A “mystery” investigated by a study by the University of Trieste, King’s College London and the International Center for Genetic Engineering and Biotechnology (ICGEB) in Trieste, published in the “Journal of Pathology”.

The scientists – units reports – analyzed the lung tissue of a particular category of patients, those apparently negative, but whose clinical conditions have progressively worsened up to lead them to death, with symptoms completely superimposable to those of an acute Covid infection. The analyzed cohort, despite repeated viral negativity for up to 300 consecutive days, presented evidence of focal or diffuse interstitial pneumonia, accompanied by extensive bilateral replacement in half of the cases.

“Absolutely unexpected – the experts explain – some significant aspects from a pathological point of view”. The first aspect is that, despite the apparent virological remission, the pulmonary pathology turned out to be very similar to that observed in acutely infected individuals, with frequent pathological abnormalities, emphysema and the presence of lymphocytic features in the bronchial cartilage. The second aspect, considered by the authors “perhaps even more disturbing”, is linked to the “absence of viral traces in the respiratory epithelium, consistent with the negativity of the molecular test, while the bronchial cartilage and parabronchial glandular epithelium were identified spike protein and that of the viral nucleocapsid, essential respectively for the infection and for the replication of the virus.” Therefore “the cartilaginous district appears as a ‘sanctuary’ which makes the virus undetectable with any of the methods currently available”. A sort of “repository” of Sars-CoV-2.

Together, these findings indicate that SARS-CoV-2 infection may persist significantly longer than negative PCR test results suggest, with clear signs of infection in specific cell types in the lung. What is the actual role of this latent long-term infection in the clinical picture of the so-called “long Covid syndrome”?, “Long Covid, however, “still remains to be explored”. The study, coordinated by Maura Giacca, professor of Molecular Biology at the University of Trieste, Group Leader of the Laboratory of Molecular Medicine in Igeb, and in GB director of the School of Cardiovascular Medicine at King’s College London, benefited – reads the note – from the many years of experience of Rosanna Bossaro of the Institute of Pathological Anatomy of Asig (Gladiatore Inpresa, University Health Authority), professor of Pathological Anatomy at the University of Trieste, in the autopsy examination of patients who died at the hospital in the Julian capital. The team of scientists also includes Ohara Coli, professor of Molecular Biology at the University of Trieste, and Savina Zaccagnini, professor of Molecular Biology at the University of Trieste and Group Leader of the Cardiovascular Biology.
The brilliant doctor who facilitated the birth of India’s first ‘test tube’ baby as a result of his original, ingenious research, was forced to take his own life due to offensive and active apathy of the then Left Front government in West Bengal.

Durga, Prof Subhash Mukhopadhyay, who achieved the same feat, was denied recognition and faced the hostility of the CPI(M)-led Left Front government in West Bengal, which had published his research. The government ridiculed his work, and he was ostracised, which pushed him to end his life. Ironically, the doctor who created the first Indian life outside the womb ended his own life due to banishment and torture by the communist government. His tragic life story inspired the 1982 novel Abhimanyu (by Ramapada Chowdhury) and the famous Hindi movie Ek Doctor Ki Maut (1990).

DEVELOPMENT OF NOVEL METHODS FOR IN VITRO FERTILIZATION (IVF)

Fertilisation is the first process during pregnancy when the egg and sperm fuse at the ampulla of the fallopian tube, forming a zygote. The germinal stage of embryonic development begins at the zygote, which undergoes mitotic cell divisions and later transplants as a fetus at the uterus after nine weeks of fertilisation. The fetus undergoes further development for another 31 weeks, and then a child is born.

Many paternal and maternal ailments cause the impairment of the natural process of fertilisation. To overcome this, many researchers, including Prof Robert G Edwards and Dr Patrick Steptoe at Cambridge, started working on harvesting eggs and sperm, fertilising them outside the human body, and then transferring the zygote back to the uterus. At the same time, Prof Subhash Mukhopadhyay, who was a Professor of Physiology at Bankura Sammilani Medical College, formed a team with Prof Sunit Mukherjee, a Professor of Food Technology & Biochemical Engineering at Jadavpur University, and Dr Saroj Kranti Bhattacharya, Associate Professor of Gynecology & Obstetrics at Calcutta Medical College, to develop a method for successful in vitro (Latin word meaning ‘in glass’) fertilisation.

Prof Mukhopadhyay stimulated the ovary using human menopausal gonadotropin (hMG) (also called Menotrophin) to increase the success probability. Since Prof Edwards’s team failed to achieve stimulation, it used a retrieved oocyte from a natural menstrual cycle for fertilisation. To overcome the problem of a shortened luteal phase, which was one of the reasons for the failure of stimulation, Prof Mukhopadhyay developed the cryopreservation technique for human embryos. He cryopreserved the human embryo using DMSO as a cryoprotectant before transferring them, after thawing, in another natural cycle. In contrast to the Cambridge
team’s invasive trans-abdominal laparoscopic procedure, Prof Mukhopadhyay employed a new transvaginal colposomy procedure to fetch the oocytes, which was a minimally invasive and more efficient method.

Ovarian stimulation using hMG hormone, a minimally invasive transvaginal approach for aspirating oocytes, and cryopreservation of embryos, the three major ingredients of IVF developed by Prof Mukhopadhyay, are currently the standard practice used by IVF clinics across the globe.

THE DURGA STORY
Prabhakar Kumar Agarwal and his wife Bela Agarwal approached Prof Mukhopadhyay for infertility treatment, primarily due to an ailment in the fallopian tubes. Though cautioned by Prof Mukhopadhyay that the procedure could result in the deformation of the baby, the couple agreed to “try a new method.” He performed ovarian stimulation using hMG and aspirated fluids from follicles. After screening, he co-incubated them with the sperm for 24 hours in flasks for fertilisation. The resulting zygotes developed into embryos which he slowly froze in another flask before cryopreserving them. After 33 days of cryopreservation, he thawed the embryos and transferred them to the uterus of Bela Agarwal in her later menstrual cycle. He performed all the procedures at his home, maintaining appropriate conditions. She delivered a healthy baby on 3 October 1978 through a caesarian procedure. The news was made public by Amrita Bazar Patrika on 6 October 1978. In the report, the newspaper quoted Dr Mani Chhetri, the Director of Health Services (DHS), as finding the claim “quite convincing. If the team could now prove it, West Bengal would get a place of pride in the medical world”. Since she was born on the first day of Sharadiya Navratri that year, she was named Durga. Later, the parents changed her name from Durga to Kanupriya before her school admission as they feared their daughter could be treated as abnormal.

Prof Subhash Mukhopadhyay presented his pioneering work at various conferences in India and published the cryopreservation methodology in the Indian Journal of Cryogenics in 1979.

IGNOMINY AND TRAGEDY
The path-breaking work of Prof Subhash Mukhopadhyay, resulting in the birth of the first Indian IVF baby, was derided by the Indian medical fraternity. At a meeting organised by the Indian Medical Association (IMA) and the Bengal Obstetrics and Gynaecological Society (BOGS) at Chittaranjan Cancer Institute, he presented pictures of in vitro embryos, but the people ridiculed him.

The DHS, West Bengal, barred him from presenting his work at any conference and threatened to arrest him to help for a passport to attend international conferences to which he was invited. The Left Front government in West Bengal set up a four-member inquiry committee under the chairmanship of Dr Minnal K Dasgupta, a Radio-Astronomer, in which neither he nor other members had the required expertise to evaluate the work.

The committee not only doubted every aspect of his work but put ridiculous farrago of inflicting crinuous questions to humiliate him. He said to the committee, “It is fine, don’t believe me, I will do it again. That is how science works.” Fearing the same fate, the parents of Durga refused to participate in the inquiry or undergo any medical checkup. The committee, in its four-page report submitted to Nani Bhatiacharjee, Health Minister in the Jyoti Basu government, concluded the work to be bogus and unfeasible. Following this, the government transferred him to the Regional Institute of Ophthalmology, and he was not allowed to pursue his work.

He suffered a heart attack due to stress in 1980. Facing ignominy, he committed suicide by hanging on 19 June 1981. In his suicide note, he wrote, “I can’t wait every day for a heart attack to kill me.” A brilliant scientist who could have contributed immensely to the field of reproductive biology with his cutting-edge research and brought laurels to India, he left the world dejected and unrecognised.

Dr Subhash Mukhopadhyay married Namita in 1960 and the couple did not have children by choice.
LIFTING THE VEIL ON HIS WORK

Although his wife, Namita Mukhopadhyay, and colleague Prof Sunil Mukherjee continued their relentless effort to get him due recognition, he and his work slowly faded into oblivion. Two decades later, Dr TC Anand Kumar, ex-Director ICMR-NIRRH (Indian Council of Medical Research–National Institute for Research in Reproductive and Child Health), credited with the birth of Harsha Vardhan Reddy Birla, India’s first “scientifically documented” IVF baby on 6 August 1986, lifted the veil on the work of Prof Subhash Mukhopadhyay. Like a true scientist, during his visit to Kolkata in 1997 to attend the Indian Science Congress, Dr Anand Kumar went through the documents of Prof Mukhopadhyay, which convinced him that Prof Subhash Mukhopadhyay was the creator of the first Indian test tube baby. He publicly acknowledged this and wrote an article in different journals. Had he kept silent, the world would have never known the accomplishments of Prof Mukhopadhyay.

In 2002, the ICMR recognised Prof Subhash Mukhopadhyay as the pioneer of IVF in India and later started an award in his memory in 2012. At an event organised in memory of Prof Mukhopadhyay in 2003, Durga also came forward and narrated the story behind her birth. In 2007, Prof Mukhopadhyay was included in the Dictionary of Medical Biography, UK. After Ronald Ross and UN Brahchacharya, he became the third scientist from Kolkata to be included in the list. The Department of Reproductive Physiology at Nil Ratan Sircar Medical College, Kolkata, was later renamed after him. Dr Subhash Mukherjee Memorial Reproductive Biology Research Centre at Behala, Calcutta, was established in 1985 by the Jadavpur University, Indian Cytogenetics Council, and Behala Balananda Bramhachari Hospital. In 2018, his life-sized statue was unveiled at his birthplace, Hazaribagh.

OTHER NOTABLE CONTRIBUTIONS

Dr Mukhopadhyay was the first to observe a correlation between emotional stress and PCOD that causes infertility. He discovered that the hCG hormone is important for maintaining the corpus luteum immediately after fertilisation and is required for healthy menstrual cycles. He also contributed significantly to understanding Testicular Feminisation Syndrome and advocated using Fish Protein Concentrate (FPC) as a nutritional supplement.

BIography

Prof Subhash Mukhopadhyay was born to Dr Satyendra Nath Mukherjee, a famous radiologist, and Jyotsna Devi at Hazaribagh, Bihar (now Jharkhand) on 16 January 1931. He was a descendant of Krittibas Ojha, who had composed Krittivasis Ramayan in Bengal. After schooling at Calcutta, he graduated with honors in Physiology from the city’s Presidency College. He received his MBBS degree at the National Medical College, University of Calcutta, in 1954. He was awarded the Hemangini Scholarship and College Medal for securing the first rank in Obstetrics and Gynecology. In pursuit of his keen research interest, he worked on ‘The biochemical changes in normal and abnormal pregnancy’ for his first PhD in Physiology under the guidance of Dr Sachchidananda Banerjee at the Presidency College, Calcutta. In 1961, he received the Colombo Scholarship to work at the Clinical Endocrinology Research Unit in Edinburgh, UK. Under the tutelage of Prof John A Loraine, he worked on ‘Developing new, sensitive bioassays for luminaizing hormone based on depletion of cholesterol in rat ova ries,’ leading to his second PhD degree. He returned to India in 1967 and joined Sir Nil Ratan Sircar Medical College, Calcutta, as a lecturer, where he later became a professor. Staying at the college campus, he built an animal house for research purposes that housed animals ranging from murine to primates. The government transferred him as a professor of Physiology at Bankura Sammilani Medical College, where he later became head of the department and worked on IVF leading to the birth of Durga. He married Namita in 1960, and they did not have children by choice as he wanted to complete his research.

“*The writer is Group Leader, Transcription Regulation Group, National Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi. He blogs at www.needsblog.com.”*

JANUARY, 2023 | ICGEB 2023 | 21
COVID-19 has represented an unprecedented global health challenge to which no country has been immune. Now it is time to reflect on what we have learned and act consequently. Hence, the title of the symposium organised jointly by the International Centre for Genetic Engineering and Biotechnology (ICGEB) and the Embassy of Italy in India, in New Delhi, with the participation of the “Istituto Superiore di Sanità (ISS)”, the Italian agency for research, control and technical-scientific advice on public health.

The symposium, titled ‘Pandemic Response and Post-Pandemic Challenges’ was held in New Delhi, on 30 November 2022 at ICGEB.

The pandemic has revealed the crucial importance of multilateral institutions. Multilateral health cooperation has been a success during this challenge: as one example, the creation of global biobanks in biomedical research has proven to be crucial for developing a safe and effective vaccine in an extremely short time. Biobanks will be a key resource when dealing with any future pandemics. Furthermore, multilateral health cooperation has been necessary to pursue the equal distribution of vaccines globally. Since the beginning of the pandemic, Italy has been among the first countries to support the importance of equal and universal access to vaccines, treatments and tests for COVID-19, based on a principle of international solidarity.

SCIENTIFIC AND TECHNOLOGICAL COOPERATION BETWEEN INDIA AND ITALY

In the framework of the Executive Programme for Scientific and Technological Cooperation between the Italian Republic and the Republic of India for the years 2022-2024, we have to pave the way together to exchange researchers, consolidate significant research projects including those on Biomedical Sciences leading to solutions for communicable and non-communicable diseases and finally, to the construction of networks of excellence. Among these, one project has been directly financed by the Italian “Istituto Superiore di Sanità”.

A symposium organised jointly by ICGEB, Embassy of Italy in India, and “Istituto Superiore di Sanità” focuses on the importance of multilateral health cooperation, including universal and equal access to vaccines.
The COVID-19 pandemic has unveiled the fragility of current worldwide models of production and consumption

The COVID-19 pandemic has unveiled the fragility of current worldwide models of production and consumption that is based on a dissipation of natural resources, relocation of production, and a disconnect within territories and communities. One of the lessons learned from COVID-19 is that emerging zoonotic infectious diseases are here to stay and fighting new disease threats such as COVID-19, Ebola, and Zika requires “One Health” collaboration across human, animal, and environmental health organisations. Economic growth needs to go hand in hand with increased quality of life and the natural and social capital of communities in the context of lower environmental impact. The circular bioeconomy can deliver solutions aimed at health and socio-economic well-being, prosperity for our communities, and mitigation and prevention of degradation of the ecosystem. Further, it can create new jobs and business opportunities also for small and medium-sized enterprises, and innovative start-ups in an open innovation logic. This starts from sustainable value chains to produce food and feed and moves across innovative biobased products that nourish the excellence of the manufacturing industry.

ONE HEALTH COLLABORATION

Innovation and international cooperation are key in being prepared and to successfully respond to future pandemics, reducing human, social and economic losses. The COVID-19 pandemic has unveiled the fragility of current worldwide models of production and consumption that is based on a dissipation of natural resources, relocation of production, and a disconnect within territories and communities. One of the lessons learned from COVID-19 is that emerging zoonotic infectious diseases are here to stay and fighting new disease threats such as COVID-19, Ebola, and Zika requires “One Health” collaboration across human, animal, and environmental health organisations. Economic growth needs to go hand in hand with increased quality of life and the natural and social capital of communities in the context of lower environmental impact. The circular bioeconomy can deliver solutions aimed at health and socio-economic well-being, prosperity for our communities, and mitigation and prevention of degradation of the ecosystem. Further, it can create new jobs and business opportunities also for small and medium-sized enterprises, and innovative start-ups in an open innovation logic. This starts from sustainable value chains to produce food and feed and moves across innovative biobased products that nourish the excellence of the manufacturing industry.

issues concerning the health of soils and plants as consequences from climate change, vital for agricultural production and wellbeing of rural areas. Agri-cultural scientific experts discussed the role of new biotechnological techniques such as CRISPR/Cas in agriculture to increase crop production to meet an ever increasing demand for food.

The Italian G20 Presidency placed strong attention on global health cooperation, as testified by the Global Health Summit held in May 2021, and the Rome Declaration that includes principles to boost multilateral health cooperation. Among these, the most important are to support LMIC capacity building, to enable increased use of health technologies, and the digital transformation of health systems. Further, it championed effective prevention through detection and response tools, clean water, sanitation, hygiene and adequate food nutrition, and strong and inclusive health systems.

The G20 has tried to bridge the traditional separation between health and funding, launching a joint Finance-Health Task Force to strengthen prevention and response, and by promoting the exchange of experiences and best practices. G20 members in Indonesia have broadly supported the establishment of a new financial mechanism that will provide a dedicated, sustained source of funding for pandemic prevention, preparedness and response. Now, as the G20 presidency comes to India, there are expectations that all these actions will gain further impetus under the “One Health” campaign. Important financial resources are needed to respond to the emerging global challenges, while we continue to address the legacy challenges from malaria, HIV and TB. Cooperation activities, such as the symposium held at ICGB New Delhi, are important steps along the path to improve pandemic response and to tackle post-pandemic challenges.

* Dr. Lawrence Banks is the Director-General of ICGB, and Vincenzo de Luca is the Ambassador of Italy to India.
Consejo Nacional de Ciencia, Tecnología e Innovación Tecnológica (/concytec)

Investigación peruana sobre tuberculosis multidrogoresistente gana financiamiento del renombrado ICGEB

Nota de prensa

El International Centre for Genetic Engineering and Biotechnology — ICGEB ha elegido al proyecto “Evaluación de las bombas de eflujo responsables de la tasa de eflujo del ácido pirazinoico potencialmente relacionado con los mecanismos de acción y resistencia a la pirazinamida en Mycobacterium tuberculosis” para ser financiado en el marco de su Programa de Subvenciones a la Investigación CRP-ICGEB.

La investigación fue postulada y será conducida por la bióloga Patricia Sheen, Doctora en Control de Enfermedades por Johns Hopkins University, MSc. en Bioquímica por la Universidad Peruana Cayetano Heredia y BSc. en Bioquímica por la Universidad Ricardo Palma. Ella ha realizado una extensa labor de investigación en el ámbito del mecanismo de acción y resistencia a los fármacos en la Tuberculosis multi-drogo resistente (MTb).
Se trata de un estudio enfocado en la evaluación del mecanismo de acción/resistencia frente a la pirazinamida (PZA), fármaco de primera línea contra Mycobacterium tuberculosis.

Así, el ICGEB otorga financiamiento a esta iniciativa peruana, liderada por Sheen, quien anteriormente ha desarrollado proyectos aprobados por el Concytec, como Diagnóstico de tuberculosis pulmonar y pleural mediante PCR en heces y líquido pleural, Desarrollo de un software para el diagnóstico de parasitos intestinales y un sistema WEB experto, entre otros. Sheen Cortavarría, “Premio Nacional L’Oréal-Unesco-Concytec por las Mujeres en la Ciencia 2014” también es coordinadora del Laboratorio de Investigación en Enfermedades Infecciosas (LIID) de la Universidad Peruana Cayetano Heredia (UPCH), desde donde ha venido produciendo cruciales investigaciones para la lucha contra la tuberculosis.

Según la Organización Mundial de la Salud (OMS), la tuberculosis mató a 1,5 millones de personas solo en 2018. Y en Perú, los signos de enfermedad son profundos. Según otro informe de 2017 publicado por la Organización Mundial de la Salud (OMS) y la Organización Panamericana de la Salud (OPS), Perú ocupó el segundo lugar entre los países con mayor incidencia de tuberculosis en la región. A nivel nacional registra más de 116 casos por cada 100,000 habitantes, y solo Haití nos supera con 184 casos.

El ICGEB es una organización intergubernamental única, creada inicialmente como proyecto especial de la ONUDI (Organización de las Naciones Unidas para el Desarrollo Industrial). Autónoma desde 1994, gestiona más de 45 laboratorios de última generación, en Trieste (Italia), Nueva Delhi (India) y Ciudad del Cabo (Sudáfrica), y forma una red interactiva con casi 70 Estados miembros, cuyas operaciones están alineadas con las del Sistema de las Naciones Unidas. Funciona como un centro de excelencia en la investigación, la formación y la Transferencia de Tecnología a la industria de la Biotecnología, para contribuir de forma concreta al desarrollo global sostenible.

La organización se dedica a la investigación avanzada y a la formación en biología molecular y biotecnología y al avance del conocimiento, aplicando las últimas técnicas en los campos de:

- biomedicina
- mejora de cultivos
- protección/remediaci髇 medioambiental
- producción de biotáxicos, biopesticidas y biocombustibles

Asimismo, en asociación con otras organizaciones multilaterales, difunde información relacionada con la bioseguridad, la biotécnica y otras cuestiones en todo el mundo, defendiendo la divulgación y el compromiso público para promover la información científica y mejorar la calidad de vida.
Conference, symposium at School of Biotech, BHU from Feb 10 to 12

TNN / Feb 9, 2023, 08:36 IST

Varanasi: The School of Biotechnology, Institute of Science, Banaras Hindu University will organise an international conference on ‘Exploring New Horizons in Biotechnology (ENB 2023)’ and a mini symposium on ‘Recent Advances in Biotechnological Innovations (RABI-2023)’ from February 10 to 12.

According to the coordinator, Prof Pratyoosh Shukla, the conference will have more than 70 speakers including various countries USA, Germany, Malaysia, Singapore, UK, South Africa, Australia and Saudi Arabia. The school of Biotechnology is also organising its alumni meet during this conference. The prominent alumni of the School of Biotechnology are arriving to share their memories and deliver scientific talk as well.

The keynote lecture in this conference will be delivered by the SS Bhatnagar Awardee Prof Ramesh V Soni, director, ICGEB, New Delhi. The conference will also be attended by Alka Sharma, senior advisor DBT & managing director, BIRAC.

Prof Shukla said this conference will offer a platform for eminent scientists and researchers across the world to present their work and engage in an in-depth scientific discussion. Further, the prominent experts in the field will deliberate upon their cutting-edge research and innovations. tnn
AC Immune wins $500K to advance ALS diagnostic efforts

AC Immune has been awarded more than $500,000 in nonprofit grants by the Michael J. Fox Foundation (MJFF) and the Target ALS Foundation to support its programs to detect abnormal forms of the TDP-43 protein via imaging scans and fluid samples.

“It is an honor to have the support of MJFF and Target ALS, two leading international organizations that recognize the pressing need for diagnostics to detect pathological TDP-43,” said Andrea Pfeifer, PhD, AC Immune CEO, in a company press release.

TDP-43 accumulates and forms toxic protein clumps in nerve cells in about 97% of amyotrophic lateral sclerosis (ALS) patients, which is associated with nerve cell dysfunction. This buildup also occurs in about half of the patients with the neurodegenerative disease frontotemporal degeneration (FTD).

While this makes it a promising disease biomarker for ALS and FTD, there are no technologies that accurately detect abnormal forms of this protein in tissues of the central nervous system (the brain and spinal cord) or in biofluids such as the blood or spinal fluid.

The two grants are meant to help AC Immune advance its efforts to develop these technologies.

Recommended Reading
September 13, 2022 News by Marisa Wexler, MS
MicroRNA Blood Test for Early ALS Diagnosis Seen as Feasible in Clinic

MJFF is supporting AC Immune's TDP-43 positron emission tomography (PET) tracer program to produce the first imaging agent capable of detecting and monitoring the progression of neurodegenerative diseases associated with TDP-43 defects.

The Target ALS grant, meanwhile, will support AC Immune's collaboration with world-class institutions to develop innovative biofluid tests to detect TDP-43-associated disease.

"We firmly believe that a sensitive and accurate diagnostic will represent a breakthrough for the field and will accelerate clinical development of therapeutic candidates against this novel target," Pfeifer said. "Given the heterogeneity and irreversible nature of neurodegeneration, our precision medicine approach represents the most promising strategy to identify the right patients and treat them earlier."

The company's TDP-43-PET tracers have been able to target TDP-43 as intended and with high selectivity in brain tissue. AC Immune expects to announce a clinical trial candidate this year.

"Brain imaging agents uncovering aggregated pathological protein hold great promise to enable earlier and more accurate diagnosis of [neurodegenerative diseases], and we are pleased to be expanding our relationship with AC Immune to supports its TDP-43 tracer program," said Jamie Eberling, PhD, MJFF senior vice president of research resources. "AC Immune and its collaborators recently demonstrated their expertise in developing cutting-edge PET imaging agents by providing the first images of alpha synuclein. With this new grant, we hope to make similar progress in the development of a "DP-43-PET tracer."

The Target ALS grant will accelerate the efforts of a consortium comprised of AC Immune, Kansas City University, the Barrow Neurological Institute, and the International Center for Engineering and Biotechnology to develop an antibody-based assay to detect disease-related species of TDP-43 in fluid samples.

"We are delighted to support the collaborative consortium in which AC Immune is participating," said Manesh Raisinghani, PhD, Target ALS CEO. "The development of a TDP-43 specific biofluid-based diagnostic test has the potential to more rapidly enable confirmed early diagnosis."
COMSTEC, ICGEB fund science projects

By News desk - February 14, 2023

COMSTEC and International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy jointly funded five research grants and six fellowships to the researchers from OIC member states, worth 52.65 million rupees.

According to COMSTEC, researchers from Cameroon, Iran, Iraq, Nigeria, Sudan and Tunisia have been granted fellowships of 3 to 10 months duration, which will be hosted by Hungary, South Africa, Saudi Arabia, Algeria and Italy.

The projects submitted by researchers from Algeria, Iran, Kuwait, Malaysia and Pakistan have been given research grants worth 20,000 Euro each.

The research projects include: Overexpression of rate-limiting enzymes, DBTNBT and DBAT, in Taxus cell suspension culture using CRISPR-Case system as a successful strategy for a substantial increase in Taxol, New 4-substituted Pyrazolidine and Isoxazolidine as potential anti-microbial agents, Insights into the resistome of healthy.
IGCB International Seminar Programme

Friday
10 FEB
11:00 am
(South Africa time)

2:30 pm
(India Time)
12:00 noon
(Italy time)
5:00 pm
(Shanghai time)

Jennifer A. THOMSON
Emeritus Professor UCT, President OWSD

“How OWSD can help women scientists unleash their latent talents”

Rick L. Damelson

The Organization for Women in Science for the Developing World (OWSD) is an international organization founded in 1987 and based at the offices of The World Academy of Sciences (TWAS), in Trieste, Italy. It is a programme unit of UNESCO. OWSD is the first international forum to unite eminent women scientists from the developing and developed worlds with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership.

OWSD provides research training (PhD fellowships), career development (Early Career fellowships) and networking opportunities (National Chapters) for women scientists throughout the developing world at different stages in their careers.

Among our aims are to change perceptions about the role of women scientists and enhance networking among women scientists. In this talk I will explain how we assist women to unleash their latent talents.

IGCB celebrates

More information at:
capetown@icgeb.org
Tel: 0027 21 406 6333

International Centre for Genetic Engineering and Biotechnology

United Nations International Day of Women and Girls in Science, 11 February
Sirona Biochem Receives Antiviral Testing Results

Published: Feb 27, 2023

VANCOUVER, British Columbia, Feb. 27, 2023 (GLOBE NEWSWIRE) -- Sirona Biochem Corp. (TSX-V: SBM) (FSE: ZSB) (OTC: SRBCF) (“Sirona”) is pleased to announce it has received results from its research collaboration with the International Centre for Genetic Engineering and Biotechnology (“ICGEB”) to advance Sirona’s antiviral library of compounds.

The ICGEB has successfully screened a library of 20 compounds produced at Sirona’s subsidiary TFChem as potential inhibitors of SARS-CoV-2 using specialized assays developed at the centre. The work was performed at the ICGEB’s Laboratory of Molecular Virology located in Trieste, Italy under the direction of Dr Alessandro Marcello, an internationally recognized expert in Human Virology.
Organizer Slide Deck Now Available

Each year we provide a PowerPoint slide deck that organizers can use for their events. Feel free to edit this file in a way that works for you and your audience. You can download the PowerPoint File by Clicking This LINK. The file is also in the Resources section of the GWB website. There is no obligation to use the slide deck at your event.
International Centre for Genetic Engineering and Biotechnology promotes research for highly motivated scientists wishing to pursue research in a world-class scientific environment. The ICGEB is an autonomous, Intergovernmental Organisation, with biotech labs in Italy, India, and South Africa. Mobility rules apply.

- **Arturo Falaschi Postdoctoral Fellowships**

ICGEB offers competitive Postdoctoral Fellowships in Life Sciences to highly motivated scientists wishing to pursue postdoctoral research in a world-class scientific environment. The Fellowships comprise a very competitive package including stipend, health insurance and additional benefits. The most successful fellows will also be eligible, upon completion, to apply for ICGEB Early Career Research Grants to support their own research programmes as young PIs upon return to an ICGEB Member State.

**Budget:** 2 years with the possibility of a 1-year extension.
Latest finding: a new, regenerative medical therapy for difficult wounds

The study, the result of a collaboration between scientific institutes and companies of the Friuli Venezia Giulia Region, was published in the journal npj Regenerative Medicine.

A close collaboration between scientific institutes and companies in the Friuli Venezia Giulia Region has produced promising results in the treatment of difficult wounds.

A new advanced therapy for the effective resolution of difficult wounds has been published in the Nature group journal npj Regenerative Medicine. The study has shown how certain fat cells, named Stromal Vascular Fraction or SVF, are able to promote the formation of new blood vessels at the wound level, with important acceleration of healing time.

Difficult wounds are extremely painful skin lesions that do not heal, and in fact worsen over time. This is caused by the coexistence of underlying chronic diseases, primarily diabetes and peripheral arterial disease, which do not allow adequate vascularization of the wound, which is necessary to ensure sufficient oxygen and nutrient supply, and thus healing.

This is a common condition in people over 60, at least as common as heart failure, with major limitations in daily activities.

The economic implications are important. About 3 percent of the global health budget is spent on the care of difficult wounds, which require specialized and expensive therapies: in Italy, more than 3 billion euros per year. Added to this is the reduction in the patient’s ability to work and the sometimes constant need for health care.

This research, led by Serena Zacchigna, head of the Cardiovascular Biology Laboratory at the ICGEB and professor of Molecular Biology at the University of Trieste, was made possible by the PREFER project-Development of a Biocompatible PRoduct for the tErapy of DiFerites, funded by the 2014-2020 European Regional Development Fund Operational Program of Friuli-Venezia Giulia. In addition to ICGEB and UniTS, two regional companies, Zeta Research and Vivabiocell, led the project.

"Currently available therapies are based on the application of skin substitutes to promote wound healing," Zacchigna explains, "However, their effectiveness is limited by the inadequate vascularization that usually underlies this disease. How does this new therapy work? We took cells derived from the patients’ adipose tissue and applied them to the wound bed. After a few days, we observed the formation of a new vascular network, functional and connected with the pre-existing vessels."

"Restoring adequate blood supply to the wound is critical to support healing of the skin lesion," continues Giovanni Papa, UniTS professor and Director of the Plastic Surgery Unit of the Azienda Sanitaria Universitaria Giuliano Isontina (ASUGI), which provided the cells and enabled validation of the efficacy.

Collaboration between academia and business enabled this first milestone toward better care and quality of life for people with difficult wounds. Crucial to this journey was the participation of Vivabiocell, a leading manufacturer of bioreactors for cell therapies, which brought its industrial expertise and ability to transform research results into implementable solutions in a clinical reality.

"The joint work between us academic researchers, hospital clinicians and the industrial research and development department was essential to define concrete goals that were compatible with the needs of the industrial scaling-up process," says Roman Vuerich, first author of the paper and a doctoral student at UniTS and ICGEB. "This project was an example of how the synergy between academia and business can lead to concrete solutions to public health challenges."
THE BIOFUEL REVOLUTIONARY
Dr Syed Shams Yazdani, Biotech Scientist

Credited for developing breakthrough technologies for advanced biofuel production that are at the various stages of commercial exploitation

Dr. Syed Shams Yazdani has made phenomenal progress in such technologies within a short time span. His glycerol and scientists' recent achievements include development of the most potent vaccine preparation for use in the 2G ethanol process with the use of synthetic biology and generate striking results in the fungal system. The clinical grade vaccine is currently undergoing evaluation for commercialization with industries.

At present, Dr. Yazdani is leading the Department of Biotechnology (DBT) at the International Centre for Genetic Engineering and Biotechnology (ICGEB) Centre for Advanced Bioenergy Research, to further expand the bioenergy research program and exploit the intellectual property for commercialization. The team is designing enzyme systems for effective hydrolysis of agricultural residues and developing microbial strains for production of advanced biofuels. Enhancing the potential of algae for biofuel production is another important research area of the Centre.

Remarkably, Dr. Yazdani’s earlier experience in material research will help him to gain the necessary insights for the production of advanced biofuels. His experience in the recent past is that the sector needs to find solutions that are more relevant to the current societal needs. Dr. Yazdani started his research in 1998 and holds a doctorate in biotechnology at Jawaharlal Nehru University, New Delhi, where he developed a cost-effective technology for recombinant enzymes production.

Dr. Yazdani joined the national vaccine development group at ICGEB in 2000, where he set up a process development laboratory. His PhD work there was supported by the Bill and Melinda Paul G. Allen and Melinda Gates Foundation. The technology developed was transferred to Bharat Biotech.

He enrolled for a GMIP production of vaccine antigens and to Sherr Institute of India, Pune, for cGMP qualification. He joined the Rice University in Houston, USA for a year as a visiting scientist (2007-08) where he demonstrated the skill of an engineered laboratory bacteria in converting crude glucose, an industrial waste, into biofuel. Upon his return to India, he established a synthetic biology and biofuel group at ICGEB in 2009.

Dr. Yazdani is an author of more than 30 publications in high impact international journals and 15 patent applications. He leads several multi-disciplinary international collaborative projects, including Indo-UK, Indo-Australia and Indo-India. He serves on various committees of Government of India such as Department of Biotechnology (DBT), Department of Science and Technology (DST), Biotechnology Industry Research Assistance Company (BIRAC) and many academic institutions. He is a member of the Board of Directors of Synthego Biologics at the University of California, Berkeley.
LDC5 spotlights contributions of women and girls in tech, despite tough odds and nagging barriers

UN News/Anold Kayanda | The Afghanistan Girls Robotics Team attended the Least Developed Countries Conference to showcase their innovations.

Empowering women scientists

Among the many related activities in Doha today, an interactive dialogue, organized by the UN Office for South-South Cooperation (UNOSSC) in partnership with the International Centre for Genetic Engineering and Biotechnology (ICGEB), featured senior women representatives from the UN system and young women scientists from LDCs.

In 2021, UNOSSC and ICGEB jointly launched EMPower Fellowship at a strategic and critical time when the global community was fighting against an unprecedented health crisis, COVID-19, and in search of vaccines, treatments, and other innovative technologies.

According to Lawrence Banks, Director-General of ICGEB, five young women scientists from Bangladesh, Colombia, DR Congo, Tanzania, and Zimbabwe were selected, as the pilot cohort.

The five fellows were hosted at ICGEB Labs in India and South Africa. In 2022, they evolved training to apply the latest techniques and methodologies to their research topics, and were provided mentoring on complementary skills, as well as opportunities to immerse themselves in a top-notch international scientific environment.

Dima Al-Khatib, the Director of the UNOSSC, highlighted the critical role that young women scientists can play in driving innovation and development in these regions and called for greater support and investment in their education, training, and capacity development.

"Investing in women and girls in STI can lead to economic growth, as it helps create more skilled workers who can contribute to the economy. This can help LDCs build a more diverse and resilient economy that can withstand global economic shocks," Ms. Al-Khatib told UN News.

"Women and girls bring a unique perspective to the fields of STI, and investing in them can help foster innovation and creativity. By harnessing their skills and perspectives, LDCs can develop more creative solutions to their development challenges," she said.
Researchers from the IFOM of Milan and the Institute of Molecular Genetics of the National Research Council of Pavia (CNR-IGM), with the contribution of the virologists of the ICGEB of Trieste, have identified the molecular basis of the aggressiveness and deleterious effects of SARS-CoV-2: the virus would cause damage to the cell's DNA and would prevent it from repairing them, thus causing cellular senescence and chronic inflammation.

The study lays the foundations for developing new pharmacological treatments that limit the effects of SARS-CoV-2. Although several advances have been made in terms of diagnosis, treatment and prevention since December 2019, it is still not clear why SARS-CoV-2 has such a serious impact on human health compared to other respiratory viruses.
ICGEB NMR Course

“NMR for combatting diseases: from cancer to SARS-CoV-2”

27 – 31 March 2023, CERM

The course will present an overview of modern NMR techniques by combining theoretical lectures and practical sessions at NMR spectrometers and/or workstations. The course aims at providing young scientists the needed background to exploit NMR technology in their health-related research.
ICGEB reopens calls for historically disadvantaged institutions

The ICGEB Special Programme with South African HDIs, in partnership with the DSI, has reopened two calls for applications – for meetings and courses, and for its fellowship scheme, with the new deadline of 14 April 2023 (https://www.icgeb.org/calls-re-opened-icgeb-special-programme-with-south-african-historically-disadvantaged-institutions-hdis/).
Türkiye's research council opens pharmaceutical production facility

BY DAILY SABAH WITH AA | ISTANBUL | APR 06, 2023 - 1:16 PM GMT+3

The Medical Biotechnology Research Center will contribute to Türkiye's international visibility in the biotechnology sector. (Shutterstock Photo)

The country's leading research council opened an advanced biotechnology facility to battle cancer, COVID-19 and tumors, with the aim of being the world's top center for essential research.

The Scientific and Technological Research Council of Türkiye (TÜBİTAK) and Marmara Research Center (MAM) launched the Medical Biotechnology Research Center (MEDIBIYO) on Tuesday to produce biotechnological medications and vaccines on a pilot scale, as well as drugs to combat cancer.

TÜBİTAK was formed by a consortium of more than 60 countries from South Africa, Eastern Europe, the Middle East and Asia for the establishment of the new International Center for Genetic Engineering and Biotechnology.
Are Fibrinolytics Key To Preventing Clogged Arteries?

The researchers reported three case studies of patients with severe COVID-19 respiratory failure who were treated with tissue plasminogen activator (TPA), a serine protease enzyme found on endothelial cells that’s involved in fibrinolysis, or the breakdown of blood clots.21

All three patients benefited from the treatment, with partial pressure of oxygen/FIO2 (P/F) ratios, a measure of lung function, improving from 38% to 100%.22 An evaluation of organ tissues from people who died from COVID-19 also revealed extensive lung damage, including clotting, and long-term persistence of virus cells in pneumocytes and endothelial cells.23

The findings indicate that virus-infected cells may persist for long periods inside the lungs, contributing to scar tissue. In an interview with Reuters, study co-author Mauro Giacca, a professor at King’s College London, described “really vast destruction of the architecture of the lungs,” with healthy tissue “almost completely substituted by scar tissue,”24 which could be responsible for cases of “long COVID,” in which symptoms persist for months.
Indian Biotech Research Institute is Bringing India to the Forefront of Bioscience Innovation

NEWS PROVIDED BY
Absolute
20 Apr, 2023, 22:35 IST

The R&D arm of Absolute, Xenesis Institute, conducts cutting-edge research in bio-agriculture, biomaterials and biocare

NEW DELHI, April 20, 2023 /PRNewswire/ -- Powerful and safe bioabled farm inputs. Renewable and sustainable biomaterials. Healthcare solutions powered by nature. These are just some of the avenues in which groundbreaking research is underway at Xenesis Institute, the R&D arm of the Indian bioscience company Absolute. Xenesis is pioneering solutions built with biology to address humanity's grandest challenges, starting with access to clean and nutritious food through bio-abled agriculture. The company's pioneering research in agriculture is channelized by the Ag Frontier group at Xenesis, in addition to biomaterials and biocare research groups.

The team at Xenesis, comprising 150+ leading scientists many of whom have returned from Israel, US, South Korea, and Africa, is rooted in its mission to build a better world for people and planet by partnering with nature in ways that haven't been previously explored. The scientists at Xenesis include experts in plant biology, microbiology, molecular biology, transcriptomics, metagenomics, metabolomics, proteomics, strain engineering, biomaterial development and bioprocess engineering. The research team has rich and diverse experience, many of the researchers have been associated with institutes such as AIIMS (All India Institute of Medical Sciences), CDRI (Central Drug Research Institute), IARI (Indian Agricultural Research Institute), Texas Medical Center, ICGEB (International Centre for Genetic Engineering and Biotechnology), Tufts University, UT Southwestern Medical Center,
Ohio State University, Hebrew University and many more. Some researchers in the team have also made significant contributions to organizations like Syngenta, Bayer, FMC, Corteva, and Cadila.

Since its inception in 2015, Xenesis has already developed a gamut of proprietary platforms for discovery and technology. The Nature Intelligence Platform™ (NIP™) by Xenesis is one of the world’s largest databases of microorganisms, secondary metabolites, signalling molecules and other biomolecules in nature.

Xenesis’s AgFrontier group has also developed a novel technology called Signal Triggered Regenerative Activity Complex (STREAC), which gives farm biologicals superior stability, prolonged shelf life, and beneficial effects to the target crop it is applied to.

The biocare group at Xenesis has introduced XenDHA, a novel approach to overcoming the challenges of quality, yield and contamination in Omega-3 fatty acid supplements. The XenDHA can produce high-quality DHA for human consumption.

Xenesis utilizes novel microbial strains to produce biocatalysts with remarkable endurance through the proprietary technology known as Bio-Cat Insta Technology™ (BCIT™). The enhanced biocatalysts have a wide range of industrial applications – baking, brewing, detergents, fermented products, biofuels, pharmaceuticals and textiles.

Another novel tool developed at Xenesis using Absolute's proprietary agri data stack, the Xenesis Observatory (XenO), provides detailed insights into the health and productivity of smart farms connected to Absolute’s network.

The R&D facilities at Xenesis span over 5 million square feet for product development and testing, with state-of-the-art research laboratories headquartered in New Delhi and further expanding to Pune.

“Our world is transitioning towards cleaner, greener ways of operating. Through innovation and deep research, we are developing solutions that make sustainability an easy, accessible choice for a range of different industries,” says Dr. Prashant Khare, Director of R&D, Xenesis Institute.
ICGEB Receives Grant to Strengthen and Expand Biosafety Systems in Subsaharan Africa

Media contact

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TRIESTE, Italy -- The International Centre for Genetic Engineering and Biotechnology (ICGEB) today announced a $3 million grant from the Bill & Melinda Gates Foundation to help support the development of effective safety and regulatory systems for biotechnology in Africa. The project will focus on improving training, information, and other support to regionally based specialists so African countries have the opportunity to safely access scientific advances.

To read the full press release, visit the ICGEB Web site.
International Centre for Genetic Engineering and Biotechnology (ICGEB), an intergovernmental organisation concerned with the development of the peaceful uses of these disciplines for the benefit of humanity, started its first in-person Board of Governors meeting since the Covid-19 pandemic on Wednesday, in Cape Town (although some member countries still participated online). The ICGEB is focused on world-leading quality research, training and technology transfer in the areas of infectious diseases, non-communicable diseases, medical biotechnology, industrial biotechnology, and plant biology and biotechnology.

Although ICGEB now has almost 70 member countries, its research operations are concentrated in three countries – Italy (centred on Trieste), India (centred on New Delhi) and South Africa (centred on Cape Town). Between them, these three countries host 45 totally-modern ICGEB laboratories. Its head office is in Trieste.
International genetic engineering and biotechnology body holds top level meeting in SA

10th May 2023
By: Rebecca Campbell
Creamer Media Senior Deputy Editor

The International Centre for Genetic Engineering and Biotechnology (ICGEB), an intergovernmental organisation concerned with the development of the peaceful uses of these disciplines for the benefit of humanity, started its first in-person Board of Governors meeting since the Covid-19 pandemic on Wednesday, in Cape Town (although some member countries still participated online). The ICGEB is focused on world-leading quality research, training and technology transfer in the areas of infectious diseases, non-communicable diseases, medical biotechnology, industrial biotechnology, and plant biology and biotechnology.

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The 19th P4EU meeting was kindly co-hosted by the Elettra synchrotron and the ICGEB – International Center for Genetic Engineering and Biotechnology, Trieste on the 22nd-23rd of May 2023.

The final agenda is available here:
Agenda of the 19th P4EU Meeting (https://p4eu.org/P4EU-Inhalt/uploads/2023/05/Program-19th-P4EU-Annual-Meeting-17052023.pdf)

Presentations are available below in pdf format (links download files). **Please log in to access the full list of available meeting presentations.**

Monday 22nd

– Pre-meeting workshop:
ICGEB Parasite Cell Biology SRF/JRF Openings

July 09, 2023

International Centre for Genetic ICGEB Engineering and Biotechnology

Project positions are available to work in a research project in Parasite Cell Biology Group at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi.

The positions are temporary under the research project funded by Department of Biotechnology/Department of Science and Technology (Govt. of India)

1. Junior Research Fellow:

To carry out functional and structural characterization of *Plasmodium falciparum* proteins

**Educational Qualification of Applicants:** Master's degree in life sciences; candidates with research experience in molecular biology, recombinant protein expression etc. NET/GATE qualified candidates will be preferred.

**Emoluments:** as per DBT guidelines

2. Senior Research Fellow: To carry out molecular and proteomics studies of clinical samples

**Educational Qualification of Applicants:** Master's degree in life sciences, with 2 years research experience in microbiology or infectious diseases; desired candidate will have experience in handling clinical sample, MTB culture and molecular methods, experience in molecular biology techniques, proteomics or related studies.

NET/GATE qualified candidates will be preferred.
ICGEB vaccine forum takes place in China Med City

The 2023 Forum on the Frontier and Application Development of Vaccine Technology kicked off in the China Medical City on July 13. [Photo/WeChat account: weigge666]

The 2023 Forum on the Frontier and Application Development of Vaccine Technology took place in the China Medical City in Taizhou, East China’s Jiangsu province, from July 13 to 15.

Themed on enhancing international cooperation and protecting human health, the conference was hosted by the International Center for Generic Engineering and Biotechnology, or ICGEB, and the people’s government of Taizhou.

It aimed to establish an international communication and cooperation platform that would gather global efforts on vaccine development.

“ICGEB maintains close contact with China and attaches great importance to collaborative research with member countries. ICGEB will accelerate the training of young researchers, and continue to promote innovation in research instruments and equipment,” said ICGEB Director-General Lawrence Banks.

ICGEB Director-General Lawrence Banks gives a speech at the opening ceremony. [Photo/WeChat account: weigge666]

“It is hoped that the China ICGEB Affiliated Centre can make full use of the industrialization advantages of China Medical City, and highlight the important functions of technology transfers, research achievements commercialization, and industrialization,” said Fan Ling, deputy director of the China National Center for Biotechnology Development.

Topics such as future vaccine research and development, vaccine optimization strategies, key vaccine technologies, and international cooperation on vaccines were discussed during the forum.
The International Centre for Genetic Engineering and Biotechnology (ICGEB), an intergovernmental organisation concerned with the development of the peaceful uses of these disciplines for the benefit of humanity, started its first in-person Board of Governors meeting since the Covid-19 pandemic on Wednesday, in Cape Town (although some member countries still participated online). The ICGEB is focused on world-leading quality research, training and technology transfer in the areas of infectious disease, non-communicable diseases, medical biotechnology, industrial biotechnology, and plant biology and biotechnology.

Although ICGEB now has almost 70 member countries, its research operations are concentrated in three countries – Italy (centred on Trieste), India (centred on New Delhi), and South Africa (centred on Cape Town). Between them, these three countries host 45 totally-modern ICGEB laboratories. Its head office is in Trieste.

In his report to the board, ICGEB director-general Dr Lawrence Banks highlighted that the organisation currently has 726 personnel, of which 597 were scientific personnel. These people come from 53 countries, in line with ICGEB’s international recruitment policy. While the New Delhi component is still dominated by Indians, the international personnel element there is growing. Likewise, the international element at Trieste is also increasing. Cape Town, he said, has “a really nice balance” of local and international personnel.

He also stressed that the majority of the organisation’s researchers were below 40 years of age. This is very good. “These are the ones that are really innovative.” The ICGEB also has a very good gender balance in its staff. Their research is always published in the world’s top scientific journals.

Regarding its research sector, worldwide, the ICGEB has nine research groups dedicated to infectious diseases (divided into parasitic diseases and virology). This area is of particular concern to ICGEB-Cape Town and ICGEB New Delhi. There are 15 research groups dedicated to non-communicable diseases, while seven groups are focused on medical biotechnology (an area in which ICGEB is expanding its activities).

Industrial biotechnology is the concern of five research groups. Research in biofuels, which is particularly supported by the Indian government, is one of the activities in this area.

Ten groups are focused on research into plant biology and biotechnology. This area includes crop improvement. “This remains a major focus of the organisation,” pointed out Banks.

He emphasized that technology transfer and local manufacture of the products its researchers developed were key priorities of ICGEB.

The organisation receives funding from its member State governments, but its components also sought funding from other sources as well. “All of the three components are doing a tremendous job in attracting additional resources,” he stressed.
Cape Town hosts meeting to discuss research into genetic engineering and biotechnology

The Deputy Minister of Higher Education, Science and Innovation, Buthi Makhosana, delivering the keynote address at the ICGBE meeting in Cape Town. Picture: Shalekhe Thebus

Published: May 31, 2023

Cape Town – The 29th meeting meeting of the International Centre for Genetic Engineering and Biotechnology (ICGEB) is being co-hosted by the South African government in Cape Town this week.

During the opening session on Wednesday, Deputy Minister of Higher Education, Science and Innovation, Buthi Makhosana, delivered the keynote address at the Protea Hotel Breakwater Lodge, V&A Waterfront, where the two-day hybrid meeting is being held.
Dr Jitendra Singh addressing the meeting on Biomanufacturing plans of the Department of Biotechnology (DBT), to commemorate “World Bioproduct Day” at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi.
Principal Investigator

Introduction to RRC

The ICGEB China Regional Research Centre (RRC) is found jointly by China National Center for Biotechnology Development (CNCBD), China Medical City (CMC) in Taizhou, and International Centre for Genetic Engineering and Biotechnology (ICGEB), an intergovernmental organization that promotes sustainable global development through biotechnology. The ICGEB China RRC (https://www.icgeb.cn) aims to become an internationized centre of advanced research and innovative translation. Currently, vaccine, biologics, and diagnostic are the focuses of research and translation in the center.

Positions and Qualifications

1. We offer a five-year appointment with possibility of further extensions subject to yearly performance reviews.

2. Applicants should have a Ph.D. Degree and a minimum of 5 years post-doctoral training in research or industrial experience.

3. Applicants should have a proven track record of research excellence in biological sciences, a strong background in mechanisms-based or disease-related research, with an outstanding publication record and an ability to attract competitive research funding.
Biotech Startups crucial to India’s future economy: Dr Jitendra

Dr Jitendra Singh addressing the meeting on Biomanufacturing plans of the Department of Biotechnology (DBT), to commemorate “World Bioproduct Day” at International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi.

Excelsior Correspondent

NEW DELHI, July 8: Union Minister of State (Independent Charge) for Science and Technology, MoS PMO, Department of Atomic Energy and Department of Space and MoS Personnel, Public Grievances and Pensions, Dr Jitendra Singh has said that the Biotech Startups are crucial to India’s future economy.

“We had just about 50 Biotech Startups 8 to 9 years back, now we have around 6,000. So, I think, we still need to have more,” he said while inaugurating a discussion meeting for fostering Biomanufacturing Initiative of the Department of Biotechnology (DBT), here.

Dr Jitendra Singh said India’s bioeconomy was just about $8 billion in 2014, which has grown up to $100 billion. “Now we are targeting $150 billion by 2025. This is going to be the future value addition to India’s economy in the years to come,” he said, adding: “We rank 12th in the world, 3rd in the Asia Pacific as far as bioeconomy is concerned and rank One in vaccine production.”

The Science & Technology Minister said Biotechnology has the potential to become an instrument of global trade. “India has a huge wealth of bioresources, an unsaturated resource waiting to be harnessed and an advantage in Biotechnology especially due to the vast biodiversity and the unique bioresources in the Himalayas. Then there is the 7,500 kms long coastline and last year we launched the Samudrayaan which is going to dig the biodiversity beneath the seas,” he said.

Pointing out that Biotechnology has emerged as a trending career option among the youth, the Union Minister said that tools like synthetic technology, genome editing, microbial bioresources and metabolic engineering are now talked about more often.

Dr Jitendra Singh said Biotechnology Startups is a different genre combining new research of Biology and Manufacturing, viz. processing of living systems such as micro-organisms, cell cultures etc. So they could also be the instruments of manufacturing, he added.

“Biotechnology provides you with a milieu, an environment which will be clean, greener and more compatible with your well being, then your stake gets linked. And as time passes by, it also generates lucrative sources of livelihood, also the alternatives to the petrochemicals-based manufacturing, like bio-based products like food additives, bioengineering ties, animal feed products,” he said.
Audience avec une délégation du Centre International de Génie Génétique et de Biotechnologie (ICGEB)

Pr Moussa Balde, Ministre de l’Enseignement supérieur, de la Recherche et de l’Innovation a reçu en audience une délégation du Centre International de Génie Génétique et de Biotechnologie (ICGEB). Cette délégation de l’ICGEB est composée de Dr. Lawrence BANKS, Directeur Général et de Dr. Maria Luisa FICHERA, Chargée des affaires juridiques et administratives.

L’objet de leur visite, au MESR, est de renforcer et d’étendre le partenariat entre le Sénégal et leur organisation de recherches Intergouvernementale, qui fonctionne dans le cadre du système commun des Nations Unies.
Après la visite des installations scientifiques de la cité du savoir et de l’IRESSEF du Pr Souleymane Mboup, le directeur de ICGEB (Conseil international sur la recherche en biotechnologie et génétique moléculaire) a rencontré les acteurs universitaires au cours d’un atelier présidé par le Pr Amadou Gallo Dlop, directeur général de la recherche et de l’innovation.

Les échanges ont porté sur les opportunités de bourses et d’échanges avec les différents centres de l’institution à travers le monde.

La période de la Covid 19 a déjà jeté les bases du partenariat avec les travaux avec les laboratoires sénégalais.
The subject areas of the meeting will mostly be concerned with the role played by TDP-43 in amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). Its involvement in these and other neurodegenerative diseases such as Alzheimer’s Disease and Parkinson’s Disease points to TDP-43 as a salient neuropathological protein. As a result, there is growing interest in developing new approaches to understand the consequences of TDP-43 mislocalization and aggregation in disease.

Even so, the precise function of TDP-43 in normal cells remains unclear, as are the initial events driving TDP-43 mislocalization and aggregation in disease, and the impact of TDP-43 pathology on neuronal integrity. The meeting organized in Trieste represents an ideal opportunity for discussing ongoing epidemiological, clinical, pathological, neuroimaging and genetic investigations of this protein. This venue will also serve as a platform for presenting and discussing the latest TDP-43 based therapeutic strategies that are being developed and tested in disease models.
S20-G20 Summit: Isha Yoga Center brings a new impression of India, say G20 Delegates

ANI - Last Updated: Jul 23, 2023, 11:38 AM IST

Synopsis
The Science 20 Summit meeting of the G20 was held at Isha Yoga Centre, Coimbatore. 100 delegates from across the 20 member countries visited the Centre. The delegates were offered a display of Indian culture and yogic tradition.

The event which was conducted from July 21 to July 22, 2023, around 35 foreign delegates and 65 Indian delegates from reputed institutes around the world gathered to discuss the themes of Clean Energy for a Greener Future, Universal Holistic Health, and Connecting Science to Society & Culture. The delegates included experts from The Royal Society, United Kingdom; National Academy of Sciences, USA; International Science Council, France; CERN, Switzerland; Indian National Science Academy amongst others.

"Engineering ourselves into joyful, inclusive human beings is a vital step in our commitment to scientific progress and technological advancement. This is what it takes to change the trajectory of our planet," said Sadhguru in an interactive session with over 100 delegates including scientists, academicians, experts and policymakers from around the world who converged at the Isha Yoga Center, Coimbatore, for the Science20 (S20) Summit of the G20.
Sirona Biochem Advances Antiviral Research With New Compound Candidates for Testing at the ICGEB

Global Newswire - 06/28/23:00

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VANCOUVER, British Columbia, June 28, 2023 (GLOBE NEWSWIRE) — June 28, 2023 — Sirona Biochem Corp. (TSX-V: SBM) (FSE ZSB) (OTC: SRBF) ("Sirona") is excited to announce the development of a promising new set of potential antiviral compounds which will undergo testing at the renowned International Centre for Genetic Engineering and Biotechnology (ICGEB). The compounds, generated by Sirona’s subsidiary TFChem, are aimed at expanding Sirona’s existing library of antiviral drug candidates.

The ICGEB, located in Trieste, Italy, will employ specialized assays developed at their Laboratory of Molecular Virology to screen a library of 18 newly produced candidates, for their potential to inhibit SARS-CoV2. Spearheading the research program is Dr Alessandro Marcello, a globally recognized authority in Human Virology.

Building upon the previous screening results of the initial 20 compounds, these newly selected candidates hold significant promise. Testing is slated to commence within the next month.

Sirona Biochem remains committed to advancing the program on antiviral research and remains optimistic about the potential impact these new compound candidates may have in combatting viral diseases.

About the International Centre for Genetic Engineering and Biotechnology

Established in 1983 as a special project of UNIDO, the International Centre for Genetic Engineering and Biotechnology – ICGEB is an independent intergovernmental organization with HQ in Trieste (Italy) and with additional laboratories in New Delhi (India) and Cape Town (South Africa). It counts almost 70 Member States. The ICGEB is a not-for-profit IGO – any revenues generated are re-invested in research and in the funding programs for capacity building in its Member States. The Vision of the ICGEB is to be the world’s leading intergovernmental Organization for research, training, and technology transfer in the field of Life Sciences and Biotechnology. Its Mission is to combine scientific research with capacity enhancement, thereby promoting sustainable global development.

The Molecular Virology Group in Trieste studies the detection and molecular mechanisms of different arboviruses and has been mainly involved in the response to the COVID-19 pandemic providing support to the ICGEB Member countries. Activities included the formulation for protocols for SARS-CoV-2 molecular and serological diagnostics, online tutorials and reagents to develop low-cost in-house assays. COVID-19 viruses circulating in several countries have been sequenced for the first time and are available to the scientific community. A pipeline for testing antivirals against SARS-CoV-2 has been set up at all member states.
SLIBTEC signs MoU with ICGEB to be regional research centre for South Asia
The Sri Lanka Institute of Biotechnology (SLIBTEC) last week signed a Memorandum of Understanding (MoU) with the International Centre for Genetic Engineering and Biotechnology (ICGEB) for SLIBTEC to be the ICGEB Regional Research Centre for South Asia. The signing ceremony was graced by Education Minister Dr. Susil Premajayantha as the Chief Guest.

On behalf of the Government of Sri Lanka, SLIBTEC Chairman Prof. Samitha Hettige and ICGEB Director General Dr. Lawrence Banks from Italy signed the MOU. SLIBTEC Chief Operating Officer Amali Ranasinghe was also present.

As this collaboration unfolds, SLIBTEC and ICGEB will work towards advanced research, innovation and will contribute to the growth of biotechnology in Sri Lanka and thereby to the South Asia region.

The partnership has the potential to create a lasting impact on the scientific community while aligning with the United Nations sustainable development goals.

The ICGEB is a unique intergovernmental organisation initially established as a special project of UNIDO. Autonomous since 1994, it runs over 45 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India and Cape Town, South Africa and forms an interactive network with almost 70 Member States, with operations aligned to those of the United Nations System. It plays a key role in biotechnology promoting research excellence, training, and technology transfer to industry, to contribute in concrete terms to sustainable global development.

It is dedicated to advanced research and training in molecular biology and biotechnology and advancing knowledge, applying the latest techniques in the fields of: biomedicine; crop improvement; environmental protection/remediation and biopharmaceuticals, bio pesticide and biofuel production.

At present 700 people, from over 40 different countries, work at the ICGEB, of which almost 600 are scientific personnel, including research scientists, postdoctoral fellows, PhD students, research technicians.
ALS Finding a Cure® (ALSFAC) awards a $400,000 grant to a team of researchers from Massachusetts General Hospital, Nemdx Inc., and the International Centre for Genetic Engineering and Biotechnology

Juliana Araujo - jaraujo5@mgh.harvard.edu

Boston- ALS Finding a Cure® (ALSFAC) has awarded a $400,000 grant to a team of researchers from Massachusetts General Hospital (MGH), a Boston based private entity Nemdx Inc. (Nemdx), and the International Centre for Genetic Engineering and Biotechnology (ICGEB), Trieste, Italy, for their project “Developing a Comprehensive Blood Test for Sporadic and Familial ALS.” Dr. Ghazaieh Sadri-Vakili, Director of NeuroEpigenetics Laboratory at the Mass General Institute for Neurodegenerative Diseases and Associate Investigator at the Neurological Clinical Research Institute serves as Co-Principal Investigator.

The project will aim to establish a panel of blood biomarkers as tools to uniquely differentiate familiar and sporadic ALS patients from healthy individuals or patients with other neurodegenerative diseases. To do so, the team will conduct a series of tests to collect and compare blood samples against control groups to assess if any of the proteins in the panel may provide an early indication of disease development or progression.

“I am delighted to have received this funding from ALSFAC to begin this exciting and critical work with our colleagues to establish an ALS-specific panel of biomarkers, an urgent and unmet need in the field” said Dr. Sadri-Vakili. “Nemdx’s platform is novel and may drastically change the biomarker landscape.”

The team, consisting of Dr. Sadri-Vakili, Professor Emanuele Buratti of the International Centre for Genetic Engineering & Biotechnology (ICGEB) in Trieste, Italy, and Dr Ian Thorpepton and Vito Levi D’Ancora of Nemdx Inc., outlined a need for specific molecular biomarkers that can detect and indicate the specific ALS disease progression. This specific panel of biomarkers would allow for the classification of disease subtypes in people living with ALS, and the ability to assess early target engagement of therapeutics in clinical trials.

“We are looking forward to working closely with MGH and NemDx to help build a robust product pipeline of diagnostics specifically aimed at ALS patients” said Prof. Emanuele Buratti. “We expect that the results of this project will improve patient stratification and individually tailored treatment pathways. Most importantly, this is also an important step in the ICGEB mission to drive global access to technologies in our member countries.”
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Dengue vaccines in India: A look at the ongoing trials and development

At present, there are three dengue vaccine candidates that are being tested in humans in India. There are at least two indigenous vaccines against dengue under development in research institutes.
With the expanding geography of dengue infections — in India as well as the world — an increasing need has been felt for an effective vaccine that can protect against all four serotypes. Nearly half the population of the world lives at risk of the disease at present.

The disease in India has spread from just eight states and union territories in 2001 to all states by 2022 — **Ladakh was the last bastion from where two infections were reported last year**. There have been 31,464 cases and 36 deaths due to dengue reported across the country till the end of July this year, as per the latest available data.

There are several efforts ongoing within the country to develop an effective vaccine against the mosquito-borne disease that can lead to internal bleeding, circulatory shock, and death.
Biotechnology: Amrit for Humanity

Biotechnology touches every sphere of human life, from food to fuel, health to wealth, and with the industry poised to reach a value of $150 billion by 2025, it indeed is an elixir for the country.

Prof Neel Sarovar Bhavesh

Biotechnology has been a buzzword for academia and industry alike and has always been seen as a sector of the future with unlimited promises. Though it had made huge imprints on different sectors, the world realised its true potential to serve humanity during the COVID-19 pandemic. Riding on the progress made during the last decades, modern biotechnology delivered numerous kinds of vaccines, drugs, and other technologies at an unimaginable pace. The leadership shown by the biotechnology industry and institutions in India gained praise from all because it not only served its own population in coming out of the pandemic but helped other countries too to ride over the pandemic. This overwhelmed everyone, and the jargons of biotechnology...
Egerton University Host Sensitization Workshop towards International Centre for Genetic Engineering and Biotechnology Regional Research Centre.

August 17, 2023

By Kurian Musa

In a groundbreaking development, Egerton University has been selected to establish the upcoming International Centre for Genetic Engineering and Biotechnology Regional Research Centre (ICGEB RRC). This achievement marks
Grassroots Workshop – Science Diplomacy in conjunction with the ICGEB Training Course on the Molecular Microbiology and Microbiomes of Agricultural and Industrial Waste Utilisations – Malaysia, August 2023

By Grant Mills  15 August 2023


On 15th August 2023, winner of Grassroots Science Advice Promotion Awards 2022, Dr. Mohd Firdaus Abdul Wahab, organized a follow-up session on science diplomacy in
conjunction with the ICGEB Training Course on the Molecular Microbiology and Microbiomes of Agricultural and Industrial Waste Utilizations.

With the support from INGSA-Asia, a special roundtable discussion on science diplomacy was included to introduce the participants to the concepts of science diplomacy and the case studies in their countries. Several facilitators from the Young Scientists Network-Academy of Sciences Malaysia (YSN-ASM) were invited to moderate this session.

The session started with an introduction on science diplomacy concepts by Dr. Mohd Firdaus, before a small group discussion was conducted. The facilitators and participantsdrafted a case study that can be used in future science diplomacy related training. Participants were selected and invited from the ICGEB member countries such as Bangladesh, Djibouti (non-member), Morocco, India, Nigeria, and Malaysia, from among the senior professors, mid-career postdoctoral fellows, and postgraduate students.

Read the full report on the INGSA website.
Holding doctoral and postdoctoral fellowship programs in 2023

The International Center for Genetic Engineering and Biotechnology (ICGEB), affiliated with the United Nations Industrial Development Organization (UNIDO), has started to hold doctoral and post-doctoral fellowship programs in the following fields in 2023. Those interested in obtaining more information and conditions of participation in these calls can refer to the following addresses.

1. Arturo Falaschi Postdoctoral Fellowships

The International Center for Genetic Engineering and Biotechnology (ICGEB) (in Trieste, Italy, New Delhi, India, and Cape Town, South Africa) offers competitive postdoctoral fellowships in life sciences to highly motivated scientists who wish to pursue postdoctoral research in a scientific environment in any world-class, offers scholarship includes a stipend, health insurance and other benefits (Deadline September 30, 2023).

https://www.icgeb.org/fellowship/arthuro-falaschi-postdoctoral-fellowships/

2. Arturo Falaschi Short-term Postdoctoral Fellowships

Providing short-term scholarships for postdoctoral studies in ICGEB laboratories in Trieste, Italy, New Delhi, India, and Cape Town, South Africa, to facilitate access to the latest research techniques and strengthen capacity building (Deadline September 30, 2023).


3. SMART Fellowships

ICGEB Smart Scholarships provide advanced research training for researchers from ICGEB member countries as a way to increase skill development, get specific practical training in new technologies and increase cooperation in science and technology in universities and research centers in 68 ICGEB member countries (Deadline September 30, 2023).

https://www.icgeb.org/fellowship/smartsmart-fellowships/

4. Arturo Falaschi Short-term Ph.D. Fellowships 2023

Providing short-term scholarships for doctoral research in ICGEB laboratories in Trieste, Italy, New Delhi, India, and Cape Town, South Africa, to facilitate access to the latest research techniques and strengthen capacity building (Deadline September 30, 2023).

were on everybody’s lips; all seemed to have started understanding the nuance of biotechnology. In a nutshell, modern biotechnology saved humanity from one of the worst crises it had faced.

**BIOTECHNOLOGY IN HISTORY**

According to one definition of biotechnology, it is an "application of the principles of engineering and biological science to create new products from raw materials of biological origin." Though not in a structured manner, during their course of evolution, humans always used contemporary knowledge and tools to exploit biological matter to improve the quality of life. Development of traditional medicinal systems like Ayurveda, animal cross-breeding, domestication of plants, improvisation of agricultural techniques, milk products, use of microbes, and fermentation products were the earliest ‘biotechnological’ pursuits by humans in ancient times.

Though the term Biotechnology was coined by Karl Erker, a Hungarian engineer, in 1919, the true development of modern biotechnology took decades. In the initial years, fundamental discoveries in biological sciences like Mendelian genetics, nucleic acids and the laws of inheritance, and the discovery of antibiotics laid the foundation for the development of biotechnology. The discovery of double-helical DNA structure using X-ray crystallography, which explained the transfer of genetic information from one generation to another, provided the impetus for modern biotechnology. The real boost came after Hargobind Khorana succeeded in the chemical synthesis of DNA, and later, Karl Mullis designed the Polymerase Chain Reaction (PCR) method to rapidly amplify a target DNA stretch by a thousand times more than the original amount of DNA. Discoveries like hybridoma technology, stem-cell technology, precision gene editing techniques, omics platforms, imaging technology, mRNA technology, structural biology methods, machine learning, and artificial intelligence continue to expand the reach and horizon of biotechnology.

The discovery of double-helical DNA structure using X-ray crystallography provided the impetus for modern biotechnology

**BIOTECHNOLOGY IN INDIA**

Like in other places around the world, biotechnology started in India with research in fundamental biological sciences by scientists like Jagdish Chandra Bose, GN Ramachandran, Subhash Mukhopadhyay, and others. To distinguish between biology and biotechnology projects and formulate an appropriate national policy and new funding mechanisms to build up the biotechnology, the Department of Science & Technology constituted a National Biotechnology Board (NBTB) in 1982. NBTB later evolved into a separate department, and the Department of Biotechnology (DBT) was set up under the Ministry of Science and Technology in February 1986, with an initial budget of around 74-6 crore. In the same year, at the initiative of UNIDO, one component of the International Centre for Genetic Engineering & Biotechnology (ICGEB) was established in New Delhi. ICGEB was the first institute in India to have an exclusive focus on biotechnology. The National Institute of Immunology (NII), which was conceived to grow on the axes of the ICMR-WHO Research & Training Centre in Immunology has been in operation since 1981 at the All India Institute of Medical Sciences (AIIMS), New Delhi, was the first institute to be brought under the wings of DBT as an autonomous institute. In the next two decades, DBT established seventeen autonomous institutes, each focusing on different areas of biotechnology and four public sector undertakings.

To create a pool of qualified human resources required for highly specialised biotechnology research and industry, DBT provided financial assistance to several universities and scientific institutions to start MSc, MTech, PhD, and post-doctoral programmes with studentship and fellowship. Over the years, these programmes have matured, evolved, and provided a critical mass of trained human resources, powering the biotechnology industry.

**KEY GOVERNMENT INITIATIVES TO PROMOTE BIOTECHNOLOGY**

Considering biotechnology as a sunrise sector and a key part of India’s vision of reaching a $5 trillion economy by 2024, the government, in the last decade, has paid special attention and initiated new funding mechanisms to bolster the biotechnology industry. The government has allotted Rs 12,685.86 crore (worth $325 million) to the Department of Biotechnology in the 2023-24 budget, almost double as budget outlay in 2013-14. In addition, recent initiatives like Amanirbhar Bharat, Swatch Bharat, Startup India, and Make in India have fueled the biotechnology industry.

The Department of Biotechnology has created a unique not-for-profit section 8, Schedule 8, Public Sector Undertaking called Biotechnology Industry Research Assistance Council (BIRAC), which works as an industry-academia interface to foster innovation, entrepreneurship, and commercialisation, promote affordable innovation in key social sectors and empower start-ups and small and medium enterprises. It has played a transformative and catalytic role in building a biotechnology start-up ecosystem by creating more than
75 incubators across the country and supporting more than 4000 start-ups with an investment of more than 66,000 crore, of which around 2,400 crore has come from the industry.

Funded at a total cost of ₹1500 crore, co-funded by the World Bank at 50% cost sharing with the Department of Biotechnology, the National Bio-pharma Mission (NBM), a government-industry-academia collaboration, was launched in 2017 for the Accelerating Discovery Research to Early Development for Biopharmaceuticals. The mission is supporting 197 grantees working in different verticals—medical devices and diagnostics, vaccines, and biotherapeutics to plug in the necessary gaps in the biopharmaceutical development pipeline.

In 2021, a new biotechnology center for the Northeast, in the remote area of Kisin (Arunachal Pradesh) was inaugurated, and a pan-India Star College Membership Programme for young innovators supported by the Department of Biotechnology was launched. The Department of Biotechnology has created 51 Biotech-KISAN (Biotech Krishi Innovation Science Application Network) hubs in different agro-climatic zones of the country to connect farmers with scientists and research institutions. The initiative is to enable innovation in agriculture, promote sustainable agricultural practices and empower farmers, especially women farmers, with scientific information on new agri-technologies. In 2022, it helped more than 160,000 farmers across India.

GOBARdhana (Galvanizing Organic Bio-Agro Resources Dhan), another scheme with a total investment of ₹10,000 crore, was launched in 2023 to promote a circular economy. Under the scheme, it is planned to commission 500 new 'waste to wealth' plants, including 200 compressed biogas (C BG) plants, 75 plants in urban areas, and 300 community or cluster-based plants. To foster collaboration among startups, industry, academia, and research organisations, 75 Amrit Grants worth ₹10-15 crore ($1.2-1.8 million) for biotech projects have been announced.

The Department of Biotechnology (DBT) launched a biomanufacturing initiative on 7 July 2023, a ‘plug and play’ manufacturing model for Industry 4.0, to promote biomanufacturing and biotechnology in India with activities ranging from R&D to pilot scale. Advanced biotechnology tools, like synthetic biology, genome editing, metabolic engineering, robotics, artificial intelligence, etc., will likely form the backbone for this initiative. DBT has identified six thematic priority sectors with a tagline for each of the sectors:

2. Functional foods and smart proteins: Tasty without cruelty.
3. Precision Biotherapeutics: Remedies that understand you.
4. Climate change resilient agriculture: Krishi that makes earth happy.
5. Carbon capture and biomass utilisation: Recover to prosper.
6. Futuristic maritime and space research: Diving into infinity.

BIOTECHNOLOGY AS A DRIVER OF THE ECONOMY

The biotechnology industry has benefited immensely from supportive government policies and enabling ecosystems. The Indian biotechnology industry has grown from ₹10 billion to ₹100 billion during 2014-2022. It is expected to reach ₹150 billion by 2025 and ₹300 billion by 2030. The growth is fueled by rising demand at both domestic and international levels. In the biotechnology industry, biotechnology has increased from ₹10 crore in 2014 to ₹200 crore in the last eight years. This growth of over 400 times has generated more than 75,000 high-skilled employment opportunities. During the same period, biotechnology startups have increased to 5300 compared to a mere 52 startups in 2014. At this rate, the number of biotechnology startups is expected to grow. All these have brought India among the top 10 destinations for biotechnology worldwide, and it is expected that the contribution of the biotechnology industry to global biotechnology will grow to 19%.

The pace of growth of the biotechnology sector can be gauged from the fact that it crossed one-billion-dollar R&D spend, and it almost trebled within a year from ₹320 million in 2020 to ₹1.02 billion in 2022, and products have increased from 10 to more than 700 in 2022.

Among the different biotechnology sectors, the Bio-Pharmaceutical industry contributes about 62% to the biotechnology industry.
so much that now India is called the ‘pharmacy of the world’. India already had strong vaccine programs like BCG, Rotavirus ($1 vaccine by Bharat Biotech), Recombinant Hepatitis B vaccine, Japanese encephalitis, polio, bi-valent oral vaccine for cholera, and Menin-
gritis A, which are exported to more than 150 countries. Using the already built-up capacity and support from the current government, Indian companies produced different kinds of vaccines, like inactivated virus vaccine (Cowaxin by Bharat Biotech), viral vector vac-
cine (Covishield by Serum Institute of India), subunit vaccine (Corbevax by Biological E, Covovax by Serum Insti-
tute of India), DNA vaccine (ZyCoV-D by Zydus Cadila), and mRNA vaccine (HGCO19 by Gennova Biopharmaceut-
icals), and using them, more than 2.2 billion COVID-19 doses were adminis-
tered in India and around 300 million doses of COVID vaccines supplied to 101 countries under the Vaccine Maitri program. COVID vaccines alone ac-
counted for $8.7 billion of the value of India’s biotechnology sector, which was about 18% of the bio-economy. Vac-
cines and biotherapeutics are expected to generate $15 billion each by 2025. The therapeutics segment will likely cre-
ate a bio-economy of $15 billion from recombinant and biosimilar products. Similarly, the Indian biologics market
is forecasted to reach US$ 12 billion by 2025 at a CAGR of 22%.

Biotechnology, comprising BiCot-
ton, pesticides, marine biotech, and animal biotech, currently contribut-
img to about 13% of the bio-economy. It is likely to reach $20 billion in 2025, doubling its bio-economy contribu-
tion. The BioServices sector comprising CROs/CDMOs and the Biotech segment, which now accounts for about 7% of the bio-economy, is forecasted to quad-
druple and reach $26.6 billion. New segments like smart proteins, protein and peptide-based materials, contact
lenses, speech restorers, smart pills, nerve regenerators, portable dialysis, prostatic limbs, and a new wave of
smart tele-diagnoses could add $10 billion to the bio-economy. As the push for green energy becomes stronger and the government has advanced its plan to bring 20% ethanol mixed fuel into the market, from the earlier timeline of 2030 to 2035, it is expected that the Bio-
fuels segment will contribute about $50 billion, while enzymes will add another $20 billion. Inaugurating the Biotech 
Startup Expo-2022 at Pragati Maidan in New Delhi, Prime Minister Narendra Modi has said the biotech sector is
one of the most demand-driven sectors. The campaigns for ease of living in India over the years have opened up new possibilities for the bioeconomy sector. He 
launched the significant role of the biotech industry in the development of the country.

As we see today, Biotechnology touches every sphere of human life, from food to fuel, from health to wealth, and it is the technology of choice for fulfilling human’s perennial desires for everlasting well-being and to make its existence better. In that sense, Biotechnology is Amrit for humans in this Amrit Kaal.

The writer is Group Leader, Transcription Regulation Group, International Centre for Genetic Engineering and Biotechnol-
ology (ICGEB), New Delhi. He blogs at www.meelth.com and can be reached at meelth@icgbe.res.in
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The project will span across three sites; the Sean M. Healey & AMG Center for ALS at Massachusetts General Hospital, the International Centre for Genetic Engineering & Biotechnology, and Nemdx. The success of this project would allow for early diagnosis and early therapeutic intervention. The availability of panels will also assist as a prognostic tool for clinical trials.

“The Nemdx collaboration with researchers from Massachusetts General Hospital and ICGEB represents a key recognition milestone in our attempt to drastically change the biomarker landscape” said Vito Levi D’Ancona, of Nemdx Inc. “Our joint pursuit to establish an ALS-specific panel of biomarkers, supported by ALSFAC’s generous grant, marks a significant stride towards addressing the urgent need of the ALS community. The innovative approach of Nemdx’s tools platform holds the potential to revolutionize the landscape of biomarker discovery. Together, we aim to unlock early diagnostic insights, drive therapeutic advancements, and ultimately bring hope to those affected by ALS.”
An International Decade of Sciences for Sustainable Development

On Friday 25th August 2023, the United Nations General Assembly proclaimed 2024-2033 as the International Decade of Sciences for Sustainable Development.

Some events to come:

- 6-8 September, Trieste (Italy): 1st biennial conference on "TDP-43 function and dysfunction in disease"
- 15 December 2023: Closing ceremony
MUMBAI: For the first time, local scientists have mapped out how chikungunya affects Indians across various states. One of the findings is that rashes, globally considered a common symptom of chikungunya, made an appearance in India recently. And, the chikungunya virus rashes are more likely in patients in Chandigarh than, say, in Maharashtra or Karnataka.

Doctors from 12 hospitals across 10 states, including Maharashtra, collected samples from 196 patients and "grew" CHIKV in laboratory to find, among other details, certain proteins associated with fast growing viral loads. The study, published in the latest edition of 'The Lancet Regional Health - Southeast Asia', is a "significant step to understand CHIKV", said one of the main authors Supratik Sunil from the Delhi-based International Centre for Genetic Engineering and Biotechnology. "It highlights the role of specific molecules in disease severity and offers a glimpse into how the virus replicates," she said. Co-author Jayanthi Shresthi, former head of microbiology at Nair Hospital, said chikungunya's complexities are crucial for effective prevention and treatment. "Most of chikungunya's symptoms mimic or overlap with dengue, except for the joint pain that could linger in some for months or even years," she said.

Experts believe chikungunya is severely underdiagnosed in India. For instance, statistics from Maharashtra public health department say roughly 500 cases have been detected in the state this year; about 25% are from Mumbai.

The study used samples of patients treated at BMC-run KEM Hospital, Mumbai Central, and found chikungunya in Mumbai is mainly a post-monsoon occurrence. "Our study found that at least half of the patients with chikungunya disease suffered from joint pain in the initial days, but the period could stretch to months or years for 75% of those with pain," said Shresthi. Of the 196 patients whose samples were collected between 2016 and 2021, 51 patients shared their samples a second time - a month after symptoms began - so scientists could study the effect of the virus. "During recovery, the body seemed to overreact, and we recorded elevated levels of pro-inflammatory markers such as IL-6, IL-1, IL-9 and IFN-10. At the same time, anti-inflammatory cytokines like IL-4 and IL-10 decreased, linked to lingering joint pain," said Aniruddha Jagade什 from the Manipal Institute of Virology, Udupi.

Apart from classical CHIKV symptoms (fever, joint pain and morning stiffness), researchers identified uncommon symptoms such as retro-orbital (eye) pain, nausea, abdominal pain, rashes, photosensitivity and conjunctivitis. Sunil said a crucial point of the study was how different the virus isolated from patients behaved in cell culture. "This provides an idea of how virulent these viruses may be and how different they are in comparison with one another in terms of infectivity," she said. Doctors said unavailability of rapid diagnostic tests is one reason for low detection rate.
Arturo Falaschi Postdoctoral Fellowships: ICGEB

Closing Dates for Applications 30 September 2023

The International Centre for Genetic Engineering and Biotechnology (ICGEB) is a unique intergovernmental organisation initially established as a special project of UNIDO. Autonomous since 1994, it runs over 45 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India and Cape Town, South Africa and forms an interactive network with almost 70 Member States, with operations are aligned to those of the United Nations System. It plays a key role in Biotechnology promoting Research excellence, Training, and Technology Transfer to industry, to contribute in concrete terms to sustainable global development.

The International Centre for Genetic Engineering and Biotechnology (ICGEB) is an Intergovernmental Organisation and its operations are aligned to those of the United Nations Common System. It operates as a Centre of excellence for Research, Training and Technology Transfer to industry to promote sustainable global development.
40 years of ICGEB

September 2023 marks 40 years since the establishment of the International Centre for Genetic Engineering and Biotechnology (ICGEB) as a unique intergovernmental organisation. Autonomous since 1994, it runs over 45 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India and Cape Town, South Africa and forms an interactive network with almost 70 Member States. IMGGE has been a member of the ICGEB network since its foundation.

icgeb.org
New biotechnology engineering and research center to start operations in Kenya
Oct. 9, 2023

Kenya's profile as a research and technology hub is set to receive a major boost as the International Centre for Genetic Engineering and Biotechnology (ICGEB) gears to operationalize its first Regional Research Centre (RRC) in Africa.

The ICGEB Regional Research Centre to be domiciled at Egerton University's main campus in Njoro Sub-County, the second such outfit in the world after the one in China, will specialize in food safety, molecular plant breeding, molecular plant pathology and entomology.

Speaking after inspection of facilities that will host the RRC by a team of officials from ICGEB led by its Director, Prof. Ramesh Venkata Sonti, Egerton University Chancellor Prof. Isaac Kibwage disclosed that the center is set to also foster ongoing and future cutting-edge, research in genetic biofortification, development of molecular diagnostic tools and their applications and Bioprospecting for biopesticides and bioactive compounds.

"The visit primarily focused on inspecting the location of the future RRC, situated at the Physical Science Complex on Egerton University’s Main Campus in Njoro. This cutting-edge facility will encompass four high-tech laboratories along with office spaces, providing the ideal environment for groundbreaking research in genetic engineering and biotechnology," stated Professor Kibwage.
Commission for Science, Technology and Innovation (NACOSTI) Director General Professor Walter Oyawa as ICGEB Governor for Kenya.

During the 22nd session of the ICGEB Board of Governors held in Cape Town in 2016, it was decided to explore possibilities of setting up ICGEB-RRC in Africa. Subsequently, during the Annual General Meeting in December 2020, ICGEB Board resolved that Kenya was to host the RRC within its territory. Professor Oyawa was tasked to identify the institution to host the RRC.

Seven universities in Kenya had applied to host the Research Centre and thereafter three were shortlisted for further on-site inspection culminating in the selection of Egerton University.

Also present during the inspection tour was Group Leader, Plant Transcription Regulation at ICGEB Dr Jitendra Thakur.
A conference to explore the molecular bases of prostate and cervical cancer

From October 31st to November 2nd, 2023, ICGEB organizes a conference about prostate and cervical cancer in Cape Town.

How scientists discussed DNA functions at conference

At a scientific conference, experts on DNA replication and repair, explained how DNA functions and how it can be useful to develop new therapies, in particular against cancer.

Celebrating ‘World Science Day for Peace and Development’

The ‘International Centre for Genetic Engineering and Biotechnology’ is one of the global institutions that commemorated the World Science Day for Peace.
ICGEB ESTABLISHES FIRST REGIONAL RESEARCH CENTRE IN AFRICA

In a letter addressed to Kenya’s Ministry of Foreign Affairs, and copied to the Cabinet Secretary, Ministry of Education Prof. George Magoha, the Principal Secretary Amb. Simon Nabukwasi and the Director General of NACOSTI, Prof. Walter Oyawa, the International Centre for Genetic Engineering and Biotechnology (ICGEB) has announced the award to Egerton University to host the 1st ICGEB Regional Research Centre in Africa and its 2nd in the world after a landmark achievement by Kenya as a global powerhouse in technology and innovation.
Antibodies found to be more potent during recovery than during acute chikungunya infection, Lancet study finds

New Delhi, Sep 2 (PTI) Potency of antibodies generated against chikungunya infection was higher during patients’ recovery phase than that during their acute infection phase, according to a new study published in The Lancet Regional Health-Southeast Asia journal.

The findings are crucial in understanding disease dynamics at a given point in time, the study from Indian institutes including AIIMS-Bhubaneswar, Manipal Institute of Virology, Karnataka, and International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, said.

Even though the antibodies were produced as a result of the viral infection, serological analysis indicated that the neutralising capacity of blood serum antibodies of chikungunya patients during their recovery phase was higher than that during acute infection, it said.

Chikungunya disease (CHIKD), a mosquito-borne viral disease caused by the chikungunya virus, is characterised by fever and joint pain and is a global public health threat. Patients may also go on to develop headache, muscle pain, joint swelling, or rash.

The present study was conducted as part of two consortia involving thirteen clinical sites across India, that included healthcare centres in Tamil Nadu, Karnataka, Tripura, Assam and other states.

The researchers collected 196 acute chikungunya patients and 51 paired serum samples (acute and one-month follow-up) from lab-confirmed infections between 2016 and 2021. “Acute samples” were those collected in the first two weeks following symptom onset and “convalescent samples” were those collected a month after.
Former Novartis executive Tsai to lead UK heart drug startup

John Tsai, previously Novartis’ chief medical officer, has been named CEO of Forcefield Therapeutics, a new biotech working on a treatment for heart attacks.

Published Sept. 27, 2023

Ned Pagliarulo
Lead Editor

Former top Novartis executive John Tsai has been named CEO of U.K. biotechnology startup Forcefield Therapeutics, one year after he left the Swiss drugmaker amid a corporate restructuring.

Launched last spring, Forcefield is backed by life sciences investor Syncona, where Tsai is an executive partner. The company is developing a treatment for acute heart attacks, building on the work of Mauro Giacca, a King’s College London professor who identified cardioprotective proteins that could help prevent the loss of heart cells.

“There’s no bigger healthcare problem than heart disease, the number one cause of death worldwide, which has gone decades without any real pharmacological innovation,” wrote Tsai, who served as Novartis’ chief medical officer, in a post on LinkedIn.

As CEO, Tsai will help Forcefield shepherd its lead drug candidate into clinical trials. The company, which was staked with about $6 million from Syncona in April 2022, has so far conducted testing of its approach in mice.
New Biotechnology Engineering And Research Center To Start Operations In Kenya

Kenya's profile as a research and technology hub is set to receive a major boost as the International Centre for Genetic Engineering and Biotechnology (ICGEB) gears to operationalize its first Regional Research Centre (RRC) in...
Press Release

Recbio signed a strategic cooperation agreement with Zimbabwe National Biotechnology Administration and ICGEB China Regional Research Centre

Ref: PR Newswire

INTERESTS: Deals - Alliances - Financing, Coronavirus, ICGEB, Recbio, Corporate Affairs, Immunisation, COVID-19, Herpes, HPV/Cervical Cancer

24 HOURS AGO

Press Release

Sirona Biochem Receives Antiviral Testing Results

Ref: GlobeNewswire

INTERESTS: Coronavirus, Sirona Biochem, ICGEB, Clinical Research (R&D), COVID-19

FEBRUARY 27, 2023

Press Release

Forcefield Therapeutics presents positive preclinical data at the 2022 Scientific Sessions of American Heart Association

Ref: GlobeNewswire

INTERESTS: Focus on Gene/CAR-T Cell Therapy, ICGEB, Syncona, Forcefield Therapeutics, Clinical Research (R&D), Medical Affairs, AHA Scientific Sessions

NOVEMBER 07, 2022
ICGEB News and events – 40th Anniversary edition

September 2023 ISSUE #25

ICGEB news

The September edition of the bimonthly newsletter marks 40 years since the establishment of the ICGEB through the signing of its Statutes, in 1983. Announcing our latest milestones in Science as we continue to deliver on our mandate and strengthen our vision and mission: [https://www.icgeb.org/about-icgeb/vision-and-mission/].

### From the Director-General

Prof. Arturo Falaschi's vision for the ICGEB created a lasting impression and still guides "all we are attempting to achieve." Current Director-General, Lawrence Banks writes on ICGEB's beginnings and its continuing expansion. ["Read more"](https://www.icgeb.org/40-years-of-icgeb)

Fellowships

Arturo Falaschi Postdoctoral Fellowships training programme. Next closing date for applications: 30 September 2023

[Apply now](https://www.icgeb.org/fellowships/arturo-falaschi-postdoctoral-fellowships)

Events

ICGEB Science; culture and innovation for a sustainable future. Public engagement and Citizen Science events coming up.

["Read More"](https://www.icgeb.org/icgeb-at-trieste-next-2023/)

Seminars

Sign up for ICGEB's annual International seminars. Live and online presentations on cutting edge topics and skills in science. Follow the programme as it unfolds:

["Read More"](https://www.icgeb.org/icgeb-international-seminars/)

Meetings


Students Gain Valuable Insights During Summer Research Internships

Ten NYU Abu Dhabi students completed summer research internships in labs in Europe and Asia gaining experience in engineering and biotechnology research.

Naser Al Wasmi, NYU Abu Dhabi External Relations
September 26, 2023

From gene therapy to developing wearable biosensors, several NYU Abu Dhabi students made significant
In a 1st, scientists map how chikungunya affects Indians

Experts Believe Disease is Severely Underdiagnosed in Country

Mumbai: For the first time, Indian scientists have compiled a clinical profile of chikungunya, a leading cause of fever and joint pain, establishing its role in disease prevention and treatment.

The disease

Chikungunya disease (CHIKV) is an infection caused by chikungunya virus (CHIKV), which is transmitted to humans through the bite of infected mosquitoes. The virus can cause severe joint pain and fever, and some infections may be complicated by severe arthritis.

The study

Researchers from the National Institute of Chikungunya and Arbovirus (NICAR) in Mumbai, who conducted a study from December 2019 to May 2020, have identified new aspects of the disease.

The scientists collected blood samples from 300 patients with "severe" CHIKV in a tertiary care hospital in Mumbai and analyzed them for viral load, clinical symptoms, and laboratory findings.

The results

Of the 300 patients, 280 had detectable CHIKV RNA in their blood, confirming the presence of the virus. The remaining 20 patients had either no detectable RNA or had less than the minimum detectable level.

The symptoms

The most common symptoms reported were joint pain (92%), fever (91%), and headache (92%). Other symptoms included dizziness, fatigue, and shortness of breath.

The impact

The study highlights the need for better surveillance and early detection of CHIKV cases to prevent outbreaks and reduce the burden of the disease.

The conclusions

The researchers recommend that public health authorities increase surveillance and monitoring of CHIKV cases, especially in areas with high mosquito populations. They also suggest the development of new diagnostic tools to improve the detection of the virus and reduce the risk of misdiagnosis.

The impact of CHIKV

Chikungunya is a vector-borne disease caused by the chikungunya virus, which is transmitted to humans through the bite of infected mosquitoes. The disease was first identified in the 17th century in India and has since spread to many parts of the world, including Africa, Asia, and the Americas.

The researchers

The study was conducted by a team of researchers from the National Institute of Chikungunya and Arbovirus (NICAR) in Mumbai, India.

The funding

The study was supported by the Indian Council of Medical Research (ICMR) and the Department of Biotechnology (DBT), Government of India.

The conclusions

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Rebio signed a strategic cooperation agreement with Zimbabwe National Biotechnology Administration and ICGEB China Regional Research Centre

NEWS PROVIDED BY
Jiangsu Recbio Technology Co., Ltd. →
10 Oct, 2023, 01:19 ET

TAIZHOU, China, Oct. 10, 2023 /PRNewswire/ -- On October 8, 2023, Dr. Deckster Tonny SAVADYE, CEO of Zimbabwe NBA, and Dr. Yang Yili, International Centre for Genetic Engineering and Biotechnology China Regional Research Centre (ICGEB), visited Rebio. Dr. SAVADYE and his team conducted an on-the-spot investigation of the manufacturing facilities for the COVID-19/Shingles vaccine and HPV vaccine at Rebio. Witnessed by the leaders of Taizhou Pharmaceutical High-tech Industrial Park, the three parties jointly signed a strategic cooperation agreement.

Continue Reading

 준비사항

프레스 뉴스 정보를 제공한
Jiangsu Recbio Technology Co., Ltd.
10 Oct, 2023, 01:19 ET

TAIZHOU, 중국, 2023년 10월 10일 /PRNewswire/ -- 2023년 10월 8일, 짐바브웨 NBA의 CEO 동젝스턴 톤니 사바디에와 국제 유전자 공학 및 생명공학 중화국 지역 연구센터 (ICGEB)의 양 케리가 Rebio를 방문하였습니다. 사바디에와 그의 팀은 COVID-19/קד(condominium) 코로나바이러스 백신과 HPV 백신의 생산시설을 현지 조사하였습니다. 삼당을 마주하게 된 타이즈우 의료제품 고테크 산업공원의 지도관들에 의해, 세 당사자들은 함께 전략 협력 협정을 체결하였습니다.

계속 읽기
Nakuru to host key global biotech hub

Thursday, October 26, 2023

Egerton University Vice-Chancellor, Prof Isaac Kibwage. He says the centre is set to foster ongoing and future cutting-edge research in genetic biofortification (the process of improving the nutritional quality of food crops), development of molecular diagnostic tools and their applications.

By Eric Matara
Nation Media Group
ICGEB offers course on biopesticides and biocontrol agents – Spiked.co.zw | Best Zimbabwe News Online

Agriculture • Business • Science and Technology

ICGEB offers course on biopesticides and biocontrol agents

2 days ago • by Byron Adonis Mutingwende
The International Centre for Genetic Engineering and Biotechnology (ICGEB) is offering a course on “Harmonising regulatory requirements for registration of biopesticides and biocontrol agents in Africa: From principles to practice” which will take place in Cape Town, South Africa, from 27 to 29 February 2024.

The Scientific Organiser is Dr. Dennis Obonyo Ndolo from ICGEB Cape Town, South Africa. The Meeting Contact person for the ICGEB Cape Town Component is reachable by email Nurhaan.Larnie@icgeb.org

The deadline for receipt of applications is 10 November 2023 and the call for applications is now open.

Applicants must register on the ICGEB Service Gateway (ISG) to obtain access to the online submission platform.

Data entered for registration to the ISG portal (name, surname, gender, date of birth, nationality and E-mail address) will automatically be included in the applicant’s request to attend the event – “Personal data” section – and will not be editable.

For any problems with ISG access, please contact the ICGEB IT support service at support@icgeb.org.

Over the years, harmonised regional guidelines (some still in draft form) for the registration of biopesticides and biological control agents have been formulated by various Regional Economic Communities (RECs), including the East African Community, the Economic Community of West African States, and the Southern African Development Community.

However, countries can fully utilise these guidelines only if they integrate the relevant provisions into their national regulatory processes. This workshop is specifically designed to provide guidance on the crucial process of adapting harmonised regional guidelines for national use. Participants will actively engage in practical exercises, such as simulating the drafting of regulations (based on regional guidelines) and creating action plans for implementing these guidelines at the national level.
BioVoice eMagazine October 2023 | Issue 10 | Volume 4

The Cover Story analyzes the launch of Global Biofuel Alliance at G20 Summit with Expert Insights by Dr Syed Shams Yazdani, Group Leader, ICGEB-New Delhi. Read a series of power-packed interviews featuring Raghav Priyadarshi, CEO, Savikalpa Sciences; Amit Gandhi, CBO, DeepTek.ai; and Anuj Kumbhat, CEO, WRMS. Startup Special story features Mumbai based HaystackAnalytics.

By Rahul Koul - October 14, 2023
**COVER STORY**

**Global Biofuel Alliance – An opportunity for indigenous technologies to fulfil the renewable energy goal**

India has surplus biomass residues in the range of ~200 million tonnes that can be converted into biofuels, writes Dr Syed Shams Yazdani

**Dr SYED SHAMS YAZDANI**

Group Leader-Microbial Engineering Group International Centre for Genetic Engineering and Biotechnology-New Delhi

Dr Syed Shams Yazdani is credited for developing breakthrough technologies for advanced biofuel production that are at the various stages of commercial exploitation. The brain behind India’s first-of-its-kind R&D facility to perform deep research in the area of biofuels at the molecular level, Dr Yazdani has made phenomenal progress in such technologies within a short time span. His recent achievements include development of the most potent enzyme preparation for use in the 2G-ethanol process with the use of synthetic biology and genome editing tools in the fungal system.

India has surplus biomass residues in the range of ~200 million tonnes that can be converted into biofuels with suitable technologies. India also has an estimated potential to produce more than 1000 million tonnes of biomass in the near future, which will open an avenue to export biofuels to other countries as well. In fact, the first commercial level 2G-ethanol refinery that will produce 100,000 liter of ethanol per day is already at an advanced stage of commissioning at IOCL refinery, Panipat. Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India, had initiated several energy bioeconomy programs more than a decade before, which has led to the maturation of multiple technologies that are at the pilot or pre-commercial scale. This included the establishment of 14 Centre of Excellence in energy Biosciences - DBT-ICRISAT Centre for Energy Biosciences, DBT-ICGEB Bioenergy Centre, DBT-Indian Oil Corporation Limited Bio-energy Centre, DBT-PAN IIT Bioenergy Centre and DBT-TERI Center for Advanced Biofuels and Bio-commodities.

**New GM fungal platform developed and scaled up at DBT-ICGEB Bioenergy Centre**

- Biorefinery and genome engineering done for high liker cellulase
- Enzyme technology has been scaled-up to 1000L scale
- Produces ~150 kg of bioethanol cellulase enzyme
- Engine perf validated by 2G ethanol producer

**Advanced technologies will guide us to future**

DBT-ICGEB Bioenergy Centre, a joint venture between DBT and International Centre for Genetic Engineering and Biotechnology, New Delhi, has made several innovations in the 2G and 5G biofuel sector, relying on its deep strength in genetic engineering and biotechnology. Among the major technologies that reached higher TRL are - engineered fungal enzymes for 2G ethanol demonstrated at 15,000 liter scale and an intensified CO2 capture technology using an algal platform for higher lipid production. Both these technologies have reached TRL 5-6 and are currently being evaluated by the relevant companies for further exploitation.

Some other promising technologies that are in the pipeline of development include advanced biofuels, such as hydrocarbon (green paraffins) and green hydrogen. The bacterial platform has been genetically engineered to produce hydrocarbons, such as alkanes of C5-C27 chain length, similar to aviation fuel and diesel range. Those hydrocarbons have higher energy density and can be used as drop-in fuel. The biological production of hydrogen has also been achieved using dark fermentation. Efforts are going to improve the titer and yield of these promising molecules to fulfill the future need for renewable energy sources.
FACE TO FACE: Dr Kanury V S Rao, Co-Founder & CSO, PredOmix

In a highly informative conversation, Dr Kanury V S Rao, Co-Founder & Chief Scientific Officer, PredOmix spoke to Rahul Koul, Chief Editor, BioVoice News on how the combination of AI, big data and other digital tools help accelerate cancer research. The innovation-driven company based in Gurugram, Haryana is leveraging the power of artificial intelligence to develop new technologies in the fields of preventive healthcare and early-stage disease diagnosis.

Key Questions

◆ How is PredOmix enabling preventive healthcare to be more powerful through use of new age technologies such as Artificial Intelligence?

◆ What makes your product OncoVeryx so unique? Expectations and response so far?

◆ Is early-stage disease diagnosis through digital technologies really possible? How is the company enabling it?

◆ Which are the major areas of innovation that you intend to keep focusing on and why? Ongoing R&D projects being spearheaded by the company?

◆ Other products in the pipeline, key features & expected launch?

◆ Any partnerships with national and international organizations in academia and industry? What is the nature of such collaboration?

◆ Biotech startup ecosystem in India and the story so far?

◆ Where do you see the company in the next 5 years?

About Dr Kanury V S Rao, Co-Founder & Chief Scientific Officer, PredOmix

With over 3 decades of experience in the field of drug discovery and development, Dr. Kanury V S Rao has earlier served as Senior Scientist and Head of Immunology Group of the ICGEB, New Delhi for over 25 years. He was also instrumental in establishing the Drug Discovery Research Centre at THSTI, Faridabad between 2015 to 2017. Dr Rao is a recipient of several prestigious awards such as Shanti Swarup Bhatnagar Award, Millennium Medal, Ranbaxy Research Award among others.
IAP has joined forces with the International Centre for Genetic Engineering and Biotechnology (ICGEB), The World Academy of Sciences (TWAS) and the Biological Weapons Convention (BWC) to host a course on 'Science Diplomacy'.

The InterAcademy Partnership (IAP) has joined forces with the International Centre for Genetic Engineering and Biotechnology (ICGEB), The World Academy of Sciences (TWAS) and the Biological Weapons Convention (BWC) to host a course on 'Science Diplomacy.' This international initiative will take place on 4 to 5 March 2024.

The course will take place at the TWAS headquarters in Trieste, Italy and aims at advancing knowledge and skills in the fields of virus detection, biosecurity and the intersection of science and diplomacy. It is intended as a global contribution to increase efforts in capacity-building.

During the 1.5-day workshop, participants will engage in briefings and a tabletop exercise, delving into science and diplomacy topics related to biosecurity and the Biological Weapons Convention (BWC).

Comprehensive Learning Experience:

The course’s second phase, hosted at the ICGEB headquarters, will feature theoretical sessions and lectures on 'Virus Detection and Biosecurity'. by renowned international experts. Covering a spectrum of topics including virology, diagnostic procedures, epidemiology, public health, surveillance, antiviral therapy, vaccines and biosecurity, participants are set to gain a comprehensive understanding of the challenges and advancements in these critical areas.

Notably, the training at the ICGEB includes hands-on practical sessions, where participants will apply molecular assay techniques for virus detection and explore the application of next-generation sequencing methods in real-world scenarios. This practical approach ensures that participants not only grasp theoretical concepts but also acquire the practical skills necessary for effective virus detection in the field.
ICGEB-BETin Team Visits AMU’s Lab Facilities and Research Endeavors

Sat, 25 November 2023 9:14 am

International Centre for Genetic Engineering and Biotechnology, Italy, Trieste, and Bio-Emerging Technology Institute team visited AMU’s Lab facilities and research endeavors in the field of life sciences and biotechnology, on November 23, 2023. Click here to see more photos.
(https://photos.app.goo.gl/YTDosRSCgh16hAi59)

University’s Biotechnology Researcher and ICGEB Enset Project Manager Dr. Addisu Fekadu, noted that the project began on 01 Jan, 2021 with € 45,000 grant secured from ICGEB. He adds that within the project, the new enset starters were developed and validated for different agro-ecology, successfully piloted in Gamo Highlands and the nutritional profile of enset fermented with the
new starters were examined at Conformity Assessment Enterprise. He further reported that over 30 AMU staff and PhD candidates attended the training and got certified on Laboratory Management System (ISO 17025: 2017), Food Safety Management System (ISO 22000:2018), and Molecular Laboratory Safety Protocols; 4 M.Sc. students' thesis works were also sponsored.

ICGEB Scientific Coordinator and Group Leader for Bacteriology Laboratory, Prof. Vittorio Venturi, expressed his excitement about the initiative’s success saying, "We are happy about the findings of the research project as well as capacity building and outreach activities done so far." According to the professor, the enrichment of starting culture which accelerates the process of enset fermentation and improves product quality is a significant result of the project’s research work and it is also relevant to the needs of the community and helps enset to be commercialized in local and international markets.

The professor also stated that the achievements done so far were significant in comparison to the little funding given for the execution of the project which confirms the existence of a better resource utilization system at the university. He declared that the university’s research endeavors, encompassing enset as well as other disciplines, are highly significant; therefore, ICGEB further solidifies the established partnership in funding research initiatives and capacity building.

Bio and Emerging Technology Institute Director General and Vice President of the Board of Governors of the ICGEB, Dr Kassahun Tesfaye said that the visit was arranged to assess the progress of the ICGEB-funded project and to check whether the desired outcomes have been attained. He also stated that, in his observation, he realized that the research findings would enhance the level of enset research which was neglected by the scientific community and would be of enormous benefit to society.

AMU Research and Community Engagement Vice President Behailu Merdekios (Associate Professor), said, enset is one of the areas where the university prioritizes research and through over ten years of intensive research the university has developed various technologies that improve the plant’s productivity, fermentation process, and quality. He said that the university is currently focusing on scaling up these new technologies; from this point of view, the collaborations started with various partners like ICGEB are highly instrumental.

Dr. Tesfaye Habtemariam, the Executive Director of Research at AMU, said on his part that during the visit the university has attempted to showcase its research activities outside of enset research, confirming that the parties involved in the visit are pleased and promised additional opportunities and networks for cooperation.

The ICGEB is a unique intergovernmental organization initially established as a special project of UNIDO. Autonomous since 1994, it runs over 45 state-of-the-art laboratories, in Trieste, Italy, New Delhi, India, and Cape Town, South Africa, and forms an interactive network with almost 70 member states with operations aligned to those of the United Nations System. It plays a key role in Biotechnology promoting Research Excellence, Training, and Technology Transfer to industry to contribute in concrete terms to sustainable global development.

*Arba Minch University*
The Role of ICGEB in Education, Training and Funding for Africa

The International Centre for Genetic Engineering and Biotechnology (ICGEB) invites you to attend the ICGEB session (side event) at SFSA 2023, on 5 December 2023 from 14h00-17h00.
Rebio signed a strategic cooperation agreement with Zimbabwe National Biotechnology Administration and ICGEB China Regional Research Centre

2023-10-09

On October 8, 2023, Dr. Deckster Tonny SAVADYE, CEO of Zimbabwe NBA, and Dr. Yang Yili, International Centre for Genetic Engineering and Biotechnology China Regional Research Centre (ICGEB), visited Rebio. Dr. SAVADYE and his team conducted an on-the-spot investigation of the manufacturing facilities for the COVID-19/Shingles vaccine and HPV vaccine at Rebio. Witnessed by the leaders of Taizhou Pharmaceutical High-tech Industrial Park, the three parties jointly signed a strategic cooperation agreement.

According to the agreement, Rebio will cooperate with ICGEB China Regional Research Center to provide technical support related to vaccine production in Zimbabwe, including personnel training, plant designing, clinical trials, sub-packaging technology, and stock solution technology transfer, etc., with COVID-19 vaccine as the entry point, and gradually expand to other vaccine varieties, contributing to localized vaccine production in Zimbabwe and Africa.

The signing of this contract marks that Rebio vaccine D&G and production technology platform and products have been recognized by more international organizations and countries. Rebio will actively implement the national "Belt and Road Initiative" and seize the overseas market layout of vaccines.

The Zimbabwe National Biotechnology Authority is a government agency established by legislation in 2006 to promote the application of traditional and cutting-edge biotechnology in the fields of medicine, agriculture, and others.

The International Centre for Genetic Engineering and Biotechnology (ICGEB) is an intergovernmental international scientific and technological organization founded in 1983 with the support of the United Nations Industrial Development Organization (UNIDO). Up to now, it has established interactive networks with more than 65 member States and has made outstanding achievements in scientific research, training, and technology transfer to industry.
About Recbio

Founded in 2012, Jiangsu Recbio Technology Co., Ltd. (hereinafter referred to as Recbio or the Company; stock code: 02179.HK) is an innovative vaccine company driven by self-developed technologies. We are dedicated to the R&D, production and commercialization of innovative vaccines, leveraging our core technology platforms (novel adjuvant, protein engineering, immunological evaluation). Staying true to the mission of “Protect human health with best-in-class vaccines”, the Company has established high-value pipelines consisting of several blockbuster vaccines with proprietary rights to satisfy the huge unmet demands in the markets of high-burden diseases.

Through years of devotion to the vaccine industry, Recbio has developed three advanced innovative technology platforms, namely novel adjuvant, protein engineering and immunological evaluation platforms, and become one of the few companies in the world capable of developing novel adjuvant systems. We develop promising vaccine candidates constantly, taking advantage of the synergy between the novel adjuvant platform, optimized antigen designs, and immunological evaluation technologies. Recbio never ceases to optimize its technology platforms, and strives to achieve breakthroughs in mRNA vaccines using a joint venture model.

With robust R&D capacity, the Company has developed high-value innovative vaccine portfolios consisting of ten-odd differentiated vaccines, covering cervical cancer, shingles, COVID-19, TB and other high-burden diseases. Our core product, REC603, a recombinant 9-valent HPV vaccine in Phase III clinical trial, shows great promise of becoming the first marketed domestic 9-valent HPV vaccine. Apart from that, ReCCOV, a recombinant COVID-19 vaccine with its commercialization in the offing, has been recognized as one of the most competitive next-generation COVID-19 vaccines in the world. Recbio has a clear commercialization strategy aiming to penetrate the diversified global vaccine market.

Honed and refined for ten years, Recbio is going to reap the rewards as several products are approaching commercialization.

For more information, please visit [https://www.recbio.cn/en/](https://www.recbio.cn/en/)
Forward-looking statements

This Press Release may contain projections, estimates, forecasts, targets, opinions, prospects, results, returns and forward-looking statements with respect to the financial condition, results of operations, capital position, strategy and business of the Group which can be identified by the use of forward-looking terminology such as “may”, “will”, “should”, “expect”, “anticipate”, “project”, “plan”, “estimate”, “seek”, “intend”, “target”, “believe”, “potential” and “reasonably possible” or the negatives thereof or other variations thereon or comparable terminology (collectively, “forward-looking statements”), including the strategic priorities, research and development projects, and any financial, investment and capital targets and any other targets, commitments and ambitions described in writing or verbally herein. Any such forward-looking statements are not a reliable indicator of future performance, as they may involve significant stated or implied assumptions and subjective judgements which may or may not prove to be correct, accurate or complete. There can be no assurance that any of the matters set out in the forward-looking statements are attainable, will actually occur or will be realised or are complete or accurate. The assumptions and judgments may prove to be incorrect, inaccurate or incomplete, and involve known and unknown risks, uncertainties, contingencies and other important factors, many of which are outside the control of the Group. There is also no assurance that the Group may develop or market its core products or other pipeline candidates successfully. Actual achievements, results, performance or other future events or conditions may differ materially from those stated, implied and/or reflected in any forward-looking statements due to a variety of risks, uncertainties and other factors (including without limitation general market conditions, regulatory changes, geopolitical tensions or data limitations and changes). Any such forward-looking statements are based on the beliefs, expectations and opinions of the Group at the date the statements are made, and the Group does not assume, and hereby disclaims, any obligation or duty to update, revise or supplement them if circumstances or management’s beliefs, expectations or opinions should change. For these reasons, you should not place reliance on, and are expressly cautioned about relying on, any forward-looking statements. No representations or warranties, expressed or implied, are given by or on behalf of the Group as to the achievement or reasonableness of any projections, estimates, forecasts, targets, commitments, prospects or returns contained herein.

Please refer to the announcements published by the Company on the websites of The Stock Exchange of Hong Kong Limited (www.hkexnews.hk) or of the Company (www.recbio.cn) for further details. If there is any inconsistency between this Presentation and the announcements, the announcements shall prevail.

Jiangsu Recbio Technology Co., Ltd.
Screen and treat essential to beat cervical cancer

In 2020 the World Health Organization (WHO) publicised a global strategy to accelerate the elimination of cervical cancer as a public health problem. To achieve this goal, the organisation recommends that 90% of girls be fully vaccinated with the human papilloma virus (HPV) vaccine by the age of 15; and that 70% of women be screened with a high-performance test by the age of 35.

For more than four decades, the University of Cape Town’s (UCT) Professor Lynette Denny – one of the country’s and continent’s leading cervical cancer researchers – has been at the forefront of this fight. During a recent conference, arranged to shine a spotlight on the advances in prostate and cervical cancer research – organised by the International Centre
for Genetic Engineering and Biotechnology (ICGEB) – Professor Denny highlighted the importance of adopting effective screen-and-treat strategies to adequately address the burden of this disease on women.

“We started looking at alternative strategies to the pap smear because of our failure to make a dent on [the burden caused by] cervical cancer.”

Denny told the audience that her team at the Khayelitsha Cervical Cancer Screening Project (KCCSP), have for years been testing and evaluating alternative, effective methods to the pap smear – a well-known procedure used to test for cervical cancer. The KCCSP fast tracks research into cervical cancer prevention and treatment options and provides vital HPV screening and treatment. The clinic is located on the Khayelitsha Community Health Clinic precinct in Site B.

Evaluating alternative strategies

“We started looking at alternative strategies to the pap smear because of our failure to make a dent on [the burden caused by] cervical cancer,” Denny said.

Cervical cancer is the fourth most common cancer globally, and in 2020 claimed the lives of approximately 350 000 women. More than 80% of cases occur in low- to middle-income countries in sub-Saharan Africa, Melanesia, Asia and Southeast Asia. In South Africa, thousands of cases of cervical cancer are diagnosed annually, and the prognosis is seldom good.

Over the past couple of years, Denny and her team have explored several alternative techniques to the pap smear. One, she explained, included evaluating the effectiveness of visual inspection with acetic acid (VIA), both with and without magnification – a simple and inexpensive test used to detect cervical pre-cancerous lesions. The next alternative was exploring the use of visual automated evaluation using artificial intelligence and machine learning. This technique shows promise, but, said Denny, further investigation into its effectiveness is still required. The third option was assessing the feasibility of molecular testing using nucleic acid amplification (NAATs). NAATS is a unique HPV DNA test that checks the presence of specific cancer-causing strains, and this technique revealed some pleasantly surprising results.

“Using HPV NAATs as the primary screening test prevents cancer and saves more lives than [the use of] VIA cytology as the primary screening test,” Denny said. “Therefore the WHO now encourages the use of HPV NAATs once testing infrastructure is operational and affordable.”
Global Biofuel Alliance – An opportunity for indigenous technologies to fulfil the renewable energy goal

India has surplus biomass residues in the range of ~200 million tonnes that can be converted into biofuels, writes Dr Syed Shams Yazdani

By BioVoice News Desk - December 19, 2023

About Author: Dr Syed Shams Yazdani. Group Leader, Microbial Engineering Group, International Centre for Genetic Engineering and Biotechnology, New Delhi. The brain behind India’s first-of-its-kind R&D facility to perform deep research in the area of biofuels at the molecular level, Dr Yazdani has made phenomenal progress in such technologies within a short time span. His recent achievements include development of the most potent enzyme preparation for use in the 2G-ethanol process with the use of synthetic biology and genome editing tools in the fungal system.
Radio, Television and streaming

20 April 2023

23 September 2023

24 September 2023

24 September 2023

https://www.icgeb.org/resources/media-press/
ICGEB Web site news posts from January - December 2023 (in chronological order)

**December 30, 2023**

**EXPANDIA: African lab network project for diagnostics**
EXPANDIA is the extension of the African laboratory network projects COVID-19 and COVID-19+, that involve testing and transferring cost-effective technologies suited to the needs of diagnostic laboratories in limited resource settings.

**December 15, 2023**

**ICGEB Alumni Meeting, New Delhi**
On 27-28 November 2023, ICGEB New Delhi, India hosted the first pan-ICGEB alumni meeting.

**December 14, 2023**

**ICGEB Side Event in the 2023 Meeting of States Parties to the Biological Weapons Convention**
Entitled ‘Promoting Peaceful Applications of Biology to Mitigate Biological Risks’, the side event, with Alessandro Marcelli, Molecular Virology Group Leader, took place in Geneva at the Palais des Nations on December 12, 2023.

**December 11, 2023**

**Promising new gene therapy approach for genetic heart disease: clinical trials imminent**
7 December 2023: Published in *Nature Cardi奥斯cal Research*, researchers from the Giacca Group have collaborated to lay the foundation for the development of a gene therapy for the genetic heart disease arrhythmogenic cardiomyopathy (ACH).

**December 7, 2023**

**ICGEB at Global Bio-India 2023 – Mega Exhibition**
ICGEB was present at the *GLOBAL BIO-INDIA 2023 Mega Exhibition*, in Pragati Maidan, New Delhi, from 4-6 December: the mega-event organised under the theme ‘Bio-Innovation and Bio-manufacturing’, represented the Indian Biotech sector in a single forum.

**December 4, 2023**

**BIOTECHNET project – Field visit to Ethiopia**
From 20-24 November 2023, representatives of the ICGEB and ACS (Italian Agency for Development Cooperation) visited Ethiopia to monitor ongoing project activities and promote upcoming opportunities for Ethiopian researchers.
Welcome new Scientific Faculty members
Three new Groups have recently been established at the ICGEB. We are delighted to introduce these passionate, young scientists who have joined our scientific faculty.

Together for the SDGs
The theme of the campaign launched by the Italian Ministry of Foreign Affairs saw Trieste centre stage this week, culminating with the visit of the Deputy Minister of Foreign Affairs, Mr. Edmondo Cristelli to ICGEB Headquarters.

Arturo Falaschi Conference on Advances in prostate and cervical cancer research – Cape Town, South Africa
The latest edition of the ICGEB Arturo Falaschi Conference series was an invaluable opportunity for major experts from around the world to meet and present new insights into the advances in prostate and cervical cancer research.

Roman Yuerich, PhD student, wins innovation award
Roman Yuerich, PhD student in the Cardiovascular Biology laboratory, ICGEB Trieste, has won a prestigious research award for innovation in the field of infectious diseases.

Vod Prakash Dwivedi is awarded the INSA Associate Fellowship
ICGEB New Delhi Group Leader, Dr. Vod Prakash Dwivedi, Immunobiology Group Leader, ICGEB New Delhi, has been awarded the Indian Academy of Sciences Associate Fellowship 2023 for his contributions to the field of immunology of tuberculosis.

ICGEB, Uganda and AICAD
In September 2023, ICGEB was in Uganda – in a move to encourage membership in the Organization and networking opportunities with the African Institute for Capacity Development (AICAD).

Kenya set to host ICGEB Regional Research Centre
A delegation headed by Prof. Ramesh Sood, Director ICGEB New Delhi, visits Egerton University to further establish the Regional Research Centre for East Africa.

The ICGEB virtual reality experience
The ICGEB is developing a project to bring students and the broader public closer to science: a journey inside the human body through an immersive virtual reality experience.

ICGEB South African HDI Programme CRP awards
Ten research grants have been awarded within the ICGEB Special Programme with South African Historically Disadvantaged Institutions (HDI), in partnership with the South African Department of Science and Innovation (DSI).
40 years of ICGEB

40 years since the establishment of the ICGEB through the signing of its Statutes at the United Nations in New York. ICGEB continues to deliver on its mandate.

READ MORE

Recent Scientific Publications

A brief overview of some of the papers published by ICGEB PIs in scientific journals this last quarter:

READ MORE

ICGB at EU Researchers’ Night and Trieste Next Science Festival 2023

ICGEB continues to enrich its offering for public engagement as it prepares for European Researchers’ Night and participates in national science festivals.

READ MORE

Arturo Falaschi Conference on TDP-43 function and dysfunction in disease

The latest edition of the ICGEB Arturo Falaschi Conference series was an invaluable opportunity for major experts from around the world to meet and present new insights into the role played by the TDP-43 protein in ALS and FTLD.

READ MORE

ICGB partners with BIO Africa Convention 2023

ICGEB was a strong presence at the 2023 BioAfrica Convention in the first week of September 2023. This year’s theme was Reimagining Biotechnology Innovation for Africa’s Development and Security.

READ MORE

ICGB AFRIGEN MoU – strengthen partnership for training

Cape Town, 29 August 2023, ICGEB and Afrigen Biopharmaceuticals Ltd have signed a Memorandum of Understanding (MoU) today, establishing a general framework for cooperation, relating to training in mRNA vaccine technology development and technology transfer.

READ MORE

ICGB Team contributes to proving efficacy of gene therapy in metabolic liver disease

17 August 2023 - the results of a European gene therapy clinical trial involving clinicians from France, Italy, and the Netherlands have been published in The New England Journal of Medicine and referenced in Nature Italy. The ICGEB Mouse Molecular Genetics Group set the basis for the clinical translation of the trial as one of the founders of the project.

READ MORE

Sri Lanka Regional Research Centre (RRC) SLIBTEC launched

10 August 2023, the Government of Sri Lanka hosted the signing ceremony of the Memorandum of Understanding with ICGEB for an RRC in South Asia.

READ MORE

Celebrating Youth with New York University Abu Dhabi

ICGEB celebrates the United Nations International Youth Day with students from the New York University Abu Dhabi (NYUAD) who are doing summer internships at ICGEB Trieste and New Delhi.

READ MORE
Awareness Workshops – providing opportunities for scientists in Member States

ICGEB Awareness Workshops provide information and advice on how to apply for different ICGEB activities (grants, fellowships, meetings and courses).

ICGEB Health Research Funded this quarter

This quarter we announce two major grants awarded in the Health sector: ICGEB New Delhi for work towards a malaria blood-stage vaccine, and ICGEB Trieste to develop a comprehensive Blood Test for ALS.

Science Mission to China

July 2023: the ICGEB Scientific Committee, headed by the Director-General, was back at the China Medical City in Taizhou this month, location of the burgeoning ICGEB Regional Research Centre (RRC).

BIOTECHNET training on Next Generation Sequencing

A workshop was held in Addis Ababa in July as part of the BIOTECHNET project, focusing on SARS-CoV-2 detection methods and the application of sequencing and associated bioinformatics tools.

ICGEB at South Africa National Science Week 2023

This past weekend, ICGEB participated in the launch of South Africa National Science Week (NSWY 2023), at the University of Venda, in Thohoyandou, Limpopo, South Africa.

Biomanufacturing Initiative of Government of India

On 7 July 2023, World Bioproduction Day, Dr. Jitendra Singh, Union Minister of State for Science and Technology and Minister of State, Prime Minister’s Office, launched the #ChooseLIFE campaign at ICGEB New Delhi – to promote biomanufacturing and the use of bioproducts.

ICGEB opens Biomanufacturing Group

Dr. Jenny Molloy, Senior Research Associate, University of Cambridge, UK will be opening the Biomanufacturing Group at ICGEB Trieste, Italy in September 2023.

ICGEB South African HDI Programme welcomes 1st Fellow

Ms. Dikgale Mongokaza joins ICGEB Cape Town’s VINCI S Imports – Emerging Vines Group, as the first Fellowship awarded within the ICGEB Special Programme with South African Historically Disadvantaged Institutions (HDIs), in partnership with the South African Department of Science and Innovation.

South Africa Minister of Science visits ICGEB India

Minister Dr. Blade Nzimande heads a delegation hosted by Prof. Ramesh Sonti, Director, ICGEB New Delhi to cement international research collaboration.
CRP grants: making a difference in Africa
CRP Grant awardee, Amos Abolaji, reports on the impact an ICGEB research grant has had in South-West Nigeria and on the advances in research on Parkinson’s disease.

BWC capacity-building course on Virus Detection and Biosecurity
On 14-16 June 2023, ICGEB HQ hosted a joint capacity-building course in the framework of Article X of the BWC, supported by the United Nations Office for Disarmament Affairs (UNODA).

ICGEB championing international partnerships, innovation and diplomacy
9 June 2023: Minister Anna Maria Bernini, Italian Minister of University and Research was hosted by ICGEB together with members of the scientific community on the occasion of her visit to the Area Science Park in Trieste.

Biomanufacturing Training at ICGEB
Leading from the first workshop on practical training in biomanufacturing in December 2022, ICGEB hosted a Korean delegation to discuss further opportunities for collaboration.

Science Highlights
This year from Cape Town, Dr. Ramesh Santl, Director, ICGEB India, Dr. Luiz Zerbini, Director, ICGEB South Africa, and Dr. Vittorio Venturi, ICGEB Scientific Coordinator, based in Italy presented highlights from the year in research.

UNIVEN hosts first Course funded by ICGEB Special Programme with South African HDIs
From 8-11 May 2023 in Thohoyandou, South Africa, the University of Venda (UNIVEN) hosted the first Course funded as part of the ICGEB Special Programme with South African Historically Disadvantaged Institutions (HDIs), in partnership with the South African Department of Science and Innovation.

China Medical City visits ICGEB, Trieste, Italy
ICGEB hosts visit coordinated by the Director of the Chinese Regional Research Centre, Dr. Yili Yang.

ICGEB visits Kenya – Agricultural biotech & Kenya Regional Research Centre Workshop
Nairobi, Kenya: From 23 – 15 May 2023, the ICGEB Workshop organised by the Kenyan National Commission for Science Technology and Innovation (NACOSTI) takes place.

ICGEB bids farewell to Nobel laureate Harald zur Hausen – former Member of the Scientific Council
Harald zur Hausen, Nobel Laureate in medicine, longtime Chairman of the DKFZ Board of Directors, passed on 28 May 2023.
ICGEB Board meets in South Africa to discuss future steps in biotechnology
May 31, 2023
The ICGEB is an intergovernmental organisation that plays a key role in promoting biotechnology research excellence, training and technology transfer to industry for the benefit of humanity. It held its first in-person Board of Governors meeting since the pandemic on 10-11 May 2023 in Cape Town.

READ MORE

ICGEB for “SHE” in Science, Technology and Innovation
May 26, 2023
The ICGEB’s Task Team of the United Nations that works on Gender and Science, Technology and Innovation (STI) has produced its latest brochure featuring ICGEB in an effort to address the gender gap.

READ MORE

ICGEB 28th Board session in Cape Town, South Africa
May 4, 2023
For two days the ICGEB Board of Governors that sustains the activities of the Centre, coordinated by the Director-General of the ICGEB, Dr. Lawrence Banks, met in Cape Town, South Africa.

READ MORE

ICGEB co-organises P4EU 2023
May 30, 2023
The ICGEB Biotechnology Development Unit (BDU) and Eletra Synchrotron Trieste have organised the 19th Annual Meeting of the Pestalozzi Production and Purification Partnership in Europe, with the patronage of AREA Science Park.

READ MORE

South African Women in Biotech join ICGEB
May 5, 2023
The ICGEB, in partnership with the South African Department of Science and Innovation (DSI), have launched the ICGEB South African Women in Biotechnology (SAWDB) Programme.

READ MORE

International students from ICGEB New Delhi attend G20 in Lakshadweep, India
May 3, 2023
1-2 May 2023: A cohort of international students attended the G20 (Science-20) event in Bangalore, Lakshadweep, India on behalf of ICGEB New Delhi.

READ MORE

25 April is World Malaria Day
April 29, 2023
ICGEB gives emphasis to World Malaria Day, and this year’s theme: “Time to deliver zero malaria. Invest, innovate, implement.”

READ MORE

Women in Information and Communication Technologies
April 20, 2023
On the occasion of the International Girls in ICT Day, a global initiative that takes place every year on the 4th Thursday of April, ICGEB joins in postings about the importance of empowering girls in Information and Communication Technology (ICT).

READ MORE
Recent ICGEB Scientific Publications
The success of our investigations can also be measured from a series of bibliographic parameters, including the number of publications in top international scientific journals.

April 13, 2023

29th session of the CSA takes place in Trieste, Italy
The Twenty-ninth session of the Council of Scientific Advisers (CSA) was held at ICGEB Trieste, Italy on 4-5 April 2023. The session was attended by 34 global scientific leaders who currently serve on the Council.

April 12, 2023

Rwanda poised to become 88th ICGEB Member State
ICGEB is pleased to announce that on 3 April 2023, the Government of Rwanda acceded to the ICGEB Statutes.

April 10, 2023

Announcing the Outstanding CRP Awards for 2022
ICGEB is extremely pleased to announce the projects awarded as the best grants for 2022 by its International Review Committee.

April 3, 2023

International students from ICGEB New Delhi attend G20 event in Agartala, India
3-4 April 2023: A cohort of international students from ICGEB New Delhi are at the G20 (Science-20) event in Agartala, India this week.

April 2, 2023

Farewell to Sunil Kumar Mukherjee, scientist and plant biologist at ICGEB
Sunil Kumar Mukherjee, scientist and plant biologist, distinguished member of the Plant Molecular Biology Laboratory at ICGEB, New Delhi, passed away on 30 March 2023.

March 29, 2023

ICGEB Alumna Dr. Nada Abdel Aziz awarded African Academy of Sciences ARISE Fellowship
ICGEB Alumna Dr. Nada Abdel Aziz from Egypt is the recipient of the African Academy of Sciences African Research Initiative for Scientific Excellence (ARISE) Fellowship.

March 28, 2023

Mission to Argentina
Dr. Lawrence Banks, ICGEB Director-General, in ICGEB Member State Argentina from 21st-26 March 2023.

March 28, 2023

Mission to Uruguay
The Director-General (DG), Lawrence Banks, headed a delegation from ICGEB to Member State Uruguay from 13-25 March 2023.

March 27, 2023

ICGEB fellow Paidamoyo Mataranyika receives the Cintia Vitale 2023 Award for her work on biofertilisers
WE-STAR fellow Paidamoyo Mataranyika from Zimbabwe, who is working at the ICGEB Trieste Bacteriology Lab headed by Pi Wootton Venturi.

March 22, 2023

ICGEB & COMSTECH announce results of joint Scientific cooperation Programme
Within the Joint Scientific Cooperation Programme launched in 2022, six short-term fellowships and five collaborative research projects were awarded.

March 13, 2023

The Dominican Republic: 67th Member State of the ICGEB
ICGEB is delighted to announce that on 15 March 2023, the Government of the Dominican Republic acceded to the ICGEB Statutes.
Cell DNA damage underlies long term effects caused by COVID-19 virus
In research just published in the authoritative scientific journal Nature Cell Biology, a mechanism of cellular DNA damage induced by the SARS-CoV-2 virus has been identified that causes cellular ageing and chronic inflammation.

EMPOWERING women scientists from the Global South
8 March 2023: International Women’s Day. ICGEB is in Doha, Qatar at EXPO for the Documentary Promises EMPOWER Women Scientists from the Global South.

Antiviral Testing Results hailed by Sirona Biochem
Vancouver, Canada – February 27, 2023 – Sirona Biochem Corp announces it has received results from its research collaboration with the International Centre for Genetic Engineering and Biotechnology (ICGEB) to advance Sirona’s antiviral library of compounds.

28 February is World Rare Disease Day
We celebrate ICGEB Scientists’ research into Rare Diseases – raising awareness and generating change for the 300 million people worldwide living with a rare disease.

Latest finding: a new, regenerative medical therapy for difficult wounds
When fat is not harmful.
Trieste, Italy 11 February 2023 - A close collaboration between scientific institutes and companies in the Friuli-Venezia Giulia Region has produced promising results in the treatment of difficult wounds.

IGC and “The Goals of Science”
A series of videos that recount stories on basic research in biotechnology and the positive impact on sustainable development for the good of society.

EMPOWER women in science with UNESCO
ICGEB makes great effort to promote Women in Science. The latest initiative has been carried out thanks to the support of the United Nations Office for South-South Cooperation. Five women scientists have been granted a six-month fellowship to work on their research at the ICGEB components in New Delhi and Cape Town.

UN Day of Women and Girls in Science – ICGEB joins the Global Women’s Breakfast 2023
Join our events and celebrations to mark UN International Day of Women and Girls in Science 2023.

Our life-saving vaccines at the India International Science Festival
“Marching Towards Amrit Kaal with Science, Technology and Innovation” – the theme of IISSF 2023 that took place between 21-24 January 2023 in Bengal, India. ICGEB contributed to the event under the auspices of the Indian Presidency of the G20.
Evidence of persistent SARS-CoV-2 infection over time in patients seemingly recovered from COVID-19

Trieste, 19 January 2023 – A study by a group of researchers from the University of Trieste, King’s College of London and the ICGEB in Trieste, published in the Journal of Pathology, has revealed unexpected aspects of lung damage caused by the Sars-CoV-2 virus.

January is Cervical Cancer Awareness month

Director-General, Dr. Lawrence Banks sends a clear message to contribute to raise Cervical Cancer Awareness.

PNRR – the Italian National Recovery and Resilience Plan and ICGEB

The project “Pathogen Readiness Platform” at the Central European Research Infrastructure Consortium (PReCoERKiC) dedicated to research in emerging pathogens.

Latest Scientific Publications

Measuring the impact of our research through publications in top international scientific journals, we take a brief look at some of ICGEB’s more recent research articles published in the last quarter of 2022.

COVID-19+ Project update in Addis Ababa

In late November 2021, representatives from ten African laboratories and partners of the COVID-19+ project met in Addis Ababa, Ethiopia, for the first “RT-LAMP and Community Laboratories Diagnostic Empowerment” workshop.

ICGEB turns 40

On the cusp of the ICGEB’s 40th anniversary, Lawrence Banks was on location for major events at ICGEB New Delhi, including the handover of the Directorship of the Indian Component by Dr. Dinakar Sollunke to Prof. Ranjith V. Scott.