ADVERTISEMENT FEATURE

Accelerating patient-centric biomedical innovations

Speeding up research from bench to bedside, Hong Kong Science and Technology Parks Corporation (HKSTP) presents new collaboration opportunities and research infrastructure for MEDICAL BREAKTHROUGHS.

The Biomedical Technology Support Centre at Hong Kong Science Park houses a range of R&D facilities to support biomedical innovation.

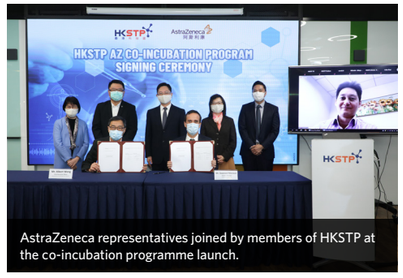
Francis Chan (Left) and Siew Chien Ng (Right), Co-founders, GenieBiome

New treatment strategies inspired by the microbiome are produced by GenieBiome.

David Chien, Chairman, President and CEO, OrbusNeich

HKSTP's support is accelerating arterial stent product development for OrbusNeich.

John Kao, Head of Biomedical Technology Cluster of HKSTP



AstraZeneca representatives joined by members of HKSTP at the co-incubation programme launch.

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A growing range of biotechnological innovations are crucial for disease prevention, early detection, treatment, monitoring, and rehabilitation, says John Kao, Head of HKSTP's Biomedical Technology (BMT) Cluster.

Hosting 160 biotechnological companies, a significant increase from 30 in the past five years, HKSTP is home to companies creating original 4D (drug, device, diagnostic, digital) designs, from rapid cancer detection to heart artery implants with antibody coatings.

"Successful translational research is about surviving the 'Valley of Death': a new drug can take an average 15 years and US$2 billion investment," says Kao. "But with our commitment to accelerating biotechnological innovations to benefit the public, HKSTP has been helping companies to be successful with our support from every stage of R&D to downstream capitalization."

One university-backed, homegrown example is GenieBiome, whose Co-founders Francis Chan and Siew Chien Ng are teaching full-time at the Faculty of Medicine of the Chinese University of Hong Kong (CUHK). Their decade of translational research into new non-invasive diagnostic markers and therapeutic strategies focuses on gut microbiome data, including colon cancer.

MICROBIOME DIAGNOSTICS AND THERAPEUTICS

"At HKSTP, we are well-positioned with outstanding infrastructure to put forth some of the most scientifically-driven microbiome studies," explains Chan, who cited one key differentiator being its facilities.

Rather than outsourcing data analysis, they accelerated research by in-house metagenomic sequencing data and its machine-learning algorithm development at the Microbiota I-Center (MagIC). They will also benefit from one of the largest animal facilities in Hong Kong, opening this September at HKSTP with more than 2,500 test animals, adjacent to their wet lab.

"In addition to testing new remedies from microbiome big data, these facilities are helping us prove chicken-and-egg causality between bacteria and diseases," adds Ng.

Ng cited an early-life cohort study, expected to complete by 2028, with a comprehensive dataset of 100,000 pregnant women in Hong Kong and the Greater Bay Area. Recording results from saliva and stool tests in the first seven years of their children's lives, the cumulative data might reveal insights on risk prediction, such as eczema, Type 1 diabetes, asthma, allergies, and obesity, as an important step towards preventive medicine.

She pointed to HKSTP's long-term support from expanding their fund-raising network, to navigating the complexities of local regulatory guidance and approval beyond Hong Kong. This includes arranging a co-incubation partner with Guangzhou KingMed Diagnostics Group as GenieBiome looks to expand.

ENHANCING CARE THROUGH SHARED KNOWLEDGE

"Knowledge sharing is encouraged among the network of Park companies. HKSTP presents an excellent vision, and these exchange programmes will also benefit my team members tremendously in years to come," says David Chien, Chairman, President and CEO of OrbusNeich, which specializes in vascular solutions for coronary artery disease and stroke.

"We have the only commercially available coronary stent in the world with an antibody coating that captures the endothelial progenitor cells (EPCs), which can restore the lining of damaged blood vessels," Chien explains.

HKSTP has linked its R&D presence in Hong Kong, and one of its manufacturing facilities in Shenzhen with readily available facilities has expedited new designs, exploiting the potential of their proprietary bio-engineered surface technology for patients with vascular diseases.

Such commitments to improve patient experience include oncology solutions by AstraZeneca (AZ).

Identifying a shared mission with HKSTP to encourage biomedical start-ups and develop 'Made in HK' integrated oncology solutions, AZ launched a two-year co-incubation programme with HKSTP which started in February 2021.

A BIOMEDICAL HUB IN THE MAKING

"Start-ups can access support from us and HKSTP," explains Gwenael Meneux, General Manager, AZ Hong Kong and Macau. "While we hope that all participants will accelerate to become a unicorn company and even get listed, we also expect our strategic partnership with the HKSTP can bring true innovation in the region."

Meneux explains that programme participants can leverage an expanding portfolio of HKSTP BMT infrastructure, including a cloud-based biomedical informatics platform and a bank for high-quality bio-specimens, both launched in December 2020. They will also be part of the AZ Hong Kong Health Innovation Hub, including a global network, business and science development mentorship, and assistance for start-ups in shaping an appropriate market entry plan.

Based on his experience as the Chair Professor of Translational Medical Engineering at the University of Hong Kong, Kao added that the mission of the HKSTP Institute is to develop young talents to master entrepreneurial skills so they can commercialize their original research and benefit society.

"Biomedical technologies are truly mission-driven and cross-disciplinary. They can surely inspire a new generation of engineers and scientists to establish Hong Kong as a global health innovation hub." ■

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