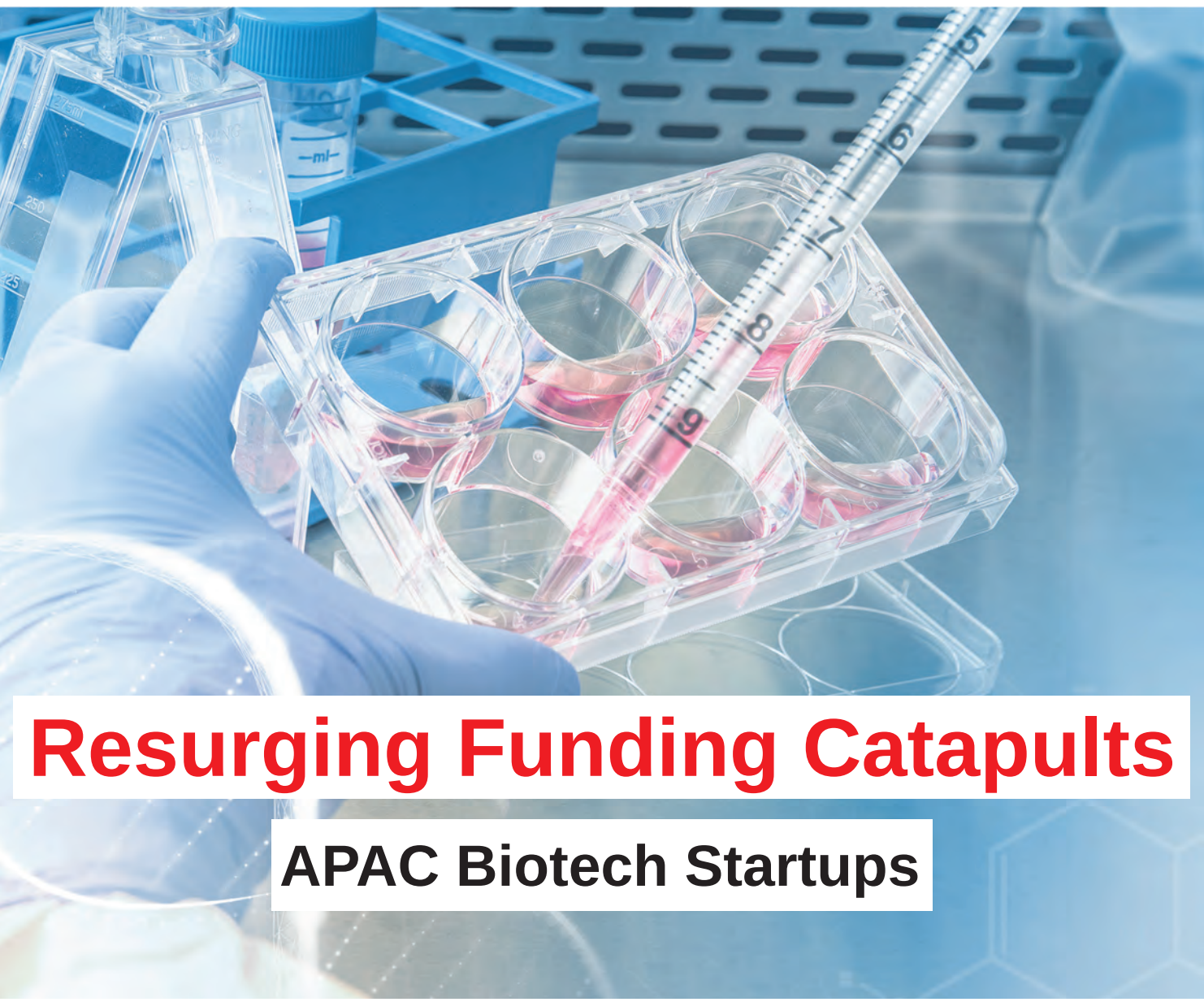
www.biospectrumasia.com

S$ 5.00

BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Volume 20 | Issue 8 | August 2025



# Resurging Funding Catapults

## APAC Biotech Startups



BioSpectrum is an MM ACTIV publication; **MDDI (P) 029/06/2025**


## Acknowledgement/ Feedback

Thank you so much BioSpectrum Asia! The interview with CTMC turned out great and we appreciate you giving us the opportunity to contribute.

**-Kelly Biele,** US

---

Thank you very much for the interview feature with Asahi Kasei.

**- Christian Okeefe,** US

---

The story on Taiwan's biotech sector gaining momentum is a lovely read.

**-Cole Wu,** Taiwan

---

## Corrigendum

On page no. 31, Olympus Corporation Services India has been incorrectly mentioned. The correct name is Olympus Medical Systems India (Private Limited). Error is regretted.

**- Editor**

Vol 20; Issue 8; August 2025

**Publisher & Managing Editor:**
Ravindra Boratkar
**CEO:**
Manasee Kurlekar
manasee.kurlekar@mmactiv.com
**Editorial:**
**Chief Editor:** Dr Milind Kokje
milind.kokje@mmactiv.com
**Advisor - Content:** Vijay Thombre
**Editor:** Narayan Kulkarni
narayan.kulkarni@mmactiv.com
**Executive Editor:** Dr Manbeena Chawla
manbeena.chawla@mmactiv.com
**Assistant Editor:** Nitesh Pillai
nitesh.pillai@mmactiv.com
**Asst. Manager Content Creation and Coordination- APAC Region:**
Hithaishi C. Bhaskar
hithaishi.cb@mmactiv.com
**General Manager - Integrated Marketing & Media Acceleration**
Ankit Kankar
ankit.kankar@mmactiv.com
**Support- Asst. General Manager- HR and Admin:** Asmita Thakar
asmita.thakar@mmactiv.com
**Production & Design:**
MM Activ Sci-Tech Communications
**Executive Production:**
Anil Walunj
**Cover Design:**
Dominix Strategic Design Pvt. Ltd.
**Business Enquiry:**
Ankit Kankar
ankit.kankar@mmctiv.com
**Subscription Services**
**Print Edition:** Saradha Mani
saradha.mani@mmactiv.com
**Digital Edition:** Ankit Kankar
ankit.kankar@mmactiv.com
**News Letter :** Sudam Walekar
sudam.walekar@mmactiv.com
**Database Executive:** Sudam Walekar
**Senior Officer - Media Integration :**
Chaitrali Gajendragadkar
chaitrali.gajendragadkar@mmactiv.com
**Bio Spectrum Jobs:** Poonam Bhosale
poonam.bhosale@mmactiv.com

**MM Activ Singapore Pte. Ltd.**

**Singapore**
**MM Activ Singapore Pte. Ltd.**
Saradha Mani
**General Manager**
#08-08, High Street Centre,
1 North Bridge Road, Singapore - 179094
**Tel:** +65-63369142 / **Fax:**+65-63369145
**Mobile:** +65-90681202
saradha.mani@mmactiv.com

**Asia Pacific & South East Asia**
Ankit Kankar
**General Manager - Integrated Marketing & Media Acceleration**
1st Floor, CIDCO Convention Center,
Sector 30A, Vashi, Navi Mumbai,
Maharashtra-400703.
**Mobile: +91-9579069369**
ankit.kankar@mmactiv.com

**USA**
**BioSpectrum Bureau**
MM Activ Sci-Tech Communications
**Mobile:** +65 90150305
digital@mmactiv.com

**Europe**
**BioSpectrum Bureau**
MM Activ Sci-Tech Communications
**Mobile:** +65 90150305
digital@mmactiv.com

**Taiwan**
**Media Representative:**
Ms Christine Wu
**Image Media Services Company**
2F-2, No. 35, Sec. 2, Flushing South Road,
Taipei 10665, Taiwan
**Tel:** +886-2-87734199
**Fax:**+886-2-87734200
**Mobile**: 886-937890533
**E-mail:** christine@imagemediatw.com
**website:** www.imagemediatw.com

**China**
Erika Cheng
**RFCOMMS**
E101, East Lake Villas, 35 Dongzhimenwai
Main Street, Dongcheng District,
Beijing 100027, P. R. China
**Mobile:** +86 17375668063
**E-mail:** erika.cheng@rfcomms.com

**India**
Sakshi Kulkarni
**Marketing and Communication-Executive**
"NITON", No. 11/3, Block "C", Second Floor,
Palace Road, Bangalore, Karnataka- 560052
**Tel:** +91-80-41131912/13
**Mobile: +91-8767072459**
sakshi.kulkarni@mmactiv.com

**Photo**: istockphoto

**Go Digital:**
To request subscription
email: ankit.kankar@mmactiv.com

Printed and published by Ravindra Boratkar on behalf of MM ACTIV Singapore Pte Ltd.

Printed at Times Printers Private Limited
16 Tuas Avenue 5, Singapore 639340
**Tel :** +65-63112888

Reprinted in India for private Circulation

**Chief Editor: Dr Milind Kokje**

**MDDI (P) 029/06/2025**

# Letter from Publisher

**Ravindra Boratkar**
Publisher &
Managing Editor,
MD, MM Activ Sci-Tech
Communications Pvt. Ltd.

***Dear Readers,***

Asia-Pacific (APAC) biotech startups saw a dramatic downturn after riding the COVID-19 investment wave. S&P worldwide Market Intelligence reports that 2024 was the most difficult year for the biotech industry since 2019, with worldwide private equity and venture capital (VC) deal value and volume falling to their lowest levels in five years. Following a challenging 2024, characterised by declining venture capital, 2025 is exhibiting renewed investor zeal and a recovery in funding, particularly for gene therapy, oncology, and AI-driven drug development.

There are 9,905 active life sciences startups in APAC, as of July 20, 2025, according to Tracxn. 4,289 of these have raised capital, and 1,840 have progressed to Series A or higher. Over the previous 10 years, an average of 453 life sciences companies have been formed yearly, demonstrating the region's continued steady momentum in new firm formation, even though the concentration of startups varies by country. APAC nations are utilising government assistance, new incubators, and scientific advancement to advance beyond service roles and create top-notch therapeutic assets. The lead story delves deeper into the startup scene in Asia, the changes in investor opinion over the last several years, and the biotech sectors that are booming.

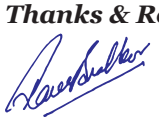
Advances in nuclear medicine, the rising incidence of chronic diseases like cancer and cardiovascular problems, and the growing need for individualised treatment options are all driving the market for radiopharmaceuticals, which include radioactive isotopes (radionuclides) and targeting molecules. This specialised sector is expanding throughout the APAC region as nations work to safeguard vital supply chains in addition to accelerating the development of innovative treatments. To gain a footing in this specialised industry, our team has investigated APAC's new collaborations and local isotope production.

Australian biotech is renowned for its state-of-the-art research, active clinical trials, and advantageous R&D facilities. The sector has grown from a small group of businesses to a vibrant community over the last 35 years. More than 1,427 biotech businesses and 2,654 life sciences organisations with over 260,000 employees call Australia home today. Australia has traditionally failed to convert its scientific assets into globally scaled biotech success, even with world-class research and a top ranking in the life sciences. Our team has attempted to address why commercialisation has lagged and what the government is doing to address this.

Regulatory bodies worldwide are concentrating on maintaining a strong, effective, and flexible regulatory framework in this rapidly evolving era, which is characterised by advances in digital health, regenerative medicines, and artificial intelligence. Making sure Singapore continues to be a secure haven for health products as well as a hub for innovation is of utmost importance. Dr Raymond Chua, an adjunct professor, was named CEO of Singapore's Health Sciences Authority (HSA) in December 2024. HSA is striking a balance under his direction between the need to embrace innovative technology and strict safety control. Our team interacted with Dr Chua and gleaned clarity on a variety of subjects, including the main regulatory issues projected for the upcoming five years and the strategies to address them.

***I am sure you will find this edition a great read.***

***Thanks & Regards,***



***Ravindra Boratkar***
***Publisher & Managing Editor***

COVER 20

# Resurging Funding Catapults APAC BIOTECH STARTUPS

Asia-Pacific's biotech startup scene is on the cusp of a renaissance. After a tough 2024 marked by shrinking venture capital, 2025 is showing revived investor enthusiasm and a rebound in funding-especially for oncology, gene therapy, and AI-driven drug discovery. With 9,905 life sciences startups now active across the region, APAC Countries are leveraging scientific innovation, government support, and new incubators to move beyond service roles and develop world-class therapeutic assets. Let's take a closer look at Asia's startup ecosystem, evolution of investor sentiment over the past few years, and buoying biotech areas.

24
Biotech's Resurgence: Innovation Amid Market Disruption or A Generational Opportunity in Innovation
**Geofrey Hsu,**
Portfolio Manager,
The Biotech Growth Trust

## Radiopharmaceuticals



## Country Special



## Speaking With









BioSpectrum the business of Bio & Health Sciences ASIA EDITION

**Scan QR code to access BioSpectrum Asia Digizine**

## Hiring



## REGULARS

# PROMOTING RESPONSIBLE ANTIBIOTIC USE

**Dr Milind Kokje**
**Chief Editor**
milind.kokje@mmactiv.com

In a significant step to combat the global crisis of antimicrobial resistance (AMR), the Global Antibiotic Research & Development Partnership (GARDP) signed a cooperation agreement last month with the Institute of Science, Tokyo. The collaboration aims to optimise advanced compounds in GARDP's antibiotic discovery portfolio by obtaining crystal structures of these compounds bound to their bacterial protein targets. These findings are expected to provide critical insights that can lead to the development of new antibiotics to treat drug-resistant bacterial infections.

This proposed research is particularly important in light of the alarming spread of AMR worldwide. A recent study, Mapping Antimicrobial Resistance and Antimicrobial Use Partnership (MAAP), has revealed the growing prevalence of drug resistance in 14 African nations. The largest study of its kind in Africa, MAAP analysed 187,000 test results collected between 2016 and 2019 from 205 laboratories across these countries.

The study highlighted serious gaps in healthcare infrastructure. Fewer than 2 per cent of health facilities were equipped to test for bacterial infections, and only 12 per cent of drug resistance records were linked to patient information. These shortcomings make it extremely difficult for health officials to track the spread of resistance or identify its causes. The study underscores the urgent need to strengthen laboratory capacity, data systems, and health planning. It was jointly conducted by the Africa Centres for Disease Control and Prevention (Africa CDC), the African Society for Laboratory Medicine (ASLM), One Health Trust, and other regional partners.

Meanwhile, a 2022 study, the results of which were announced in April 2025, reported a devastating toll on children: over 3 million died due to AMR-related complications in that year alone. Of these, more than 752,000 were in Southeast Asia and 659,000 in Africa. Beyond the human cost, the economic implications of AMR are staggering. A third study, conducted by the Center for Global Development and covering 122 countries, warned of a potential annual global economic loss of $2 trillion by 2050 if AMR is not curbed. The report projected annual GDP losses of $722 billion for China, $296 billion for the US, $187 billion for the EU, $66 billion for Japan, and $58 billion for the UK. This projection is based on an estimated 60 per cent increase in AMR-related deaths by 2050 and a doubling of individual treatment costs—expected to rise by an additional $176 billion annually. In India, AMR is already causing nearly a million deaths every year, many of which go untreated due to lack of access to effective antibiotics. An article published in Nature in May 2025 revealed that in 2019, only 7.8 per cent of patients in India received appropriate treatment for life-threatening bacterial infections. The problem is exacerbated by the widespread sale of antibiotics without prescriptions, patients prematurely discontinuing treatment, and many rural clinics lacking even basic diagnostic tools. Though there are efforts underway to curb AMR in India, experts note that enforcement and scale remain inadequate.

Despite the global urgency, several countries are reducing aid for AMR prevention. The UK has eliminated support for AMR-related efforts in developing countries, the US has cut its aid by $9 billion, and the EU is also reducing funding. Experts warn that such actions could prove counterproductive and may accelerate AMR to worst-case levels. Still, global efforts continue. Pfizer, for instance, has developed the Antimicrobial Testing Leadership and Surveillance (ATLAS) database to track real-time changes in bacterial resistance patterns across 83 countries. The new Japan-based initiative involving GARDP adds a promising dimension to these efforts. Experts hope this research could lead to the discovery of innovative antibiotics that will strengthen the fight against AMR. However, experts also emphasise that discovering new antibiotics alone will not solve the crisis. Complementary strategies—such as educating healthcare professionals and patients on responsible antibiotic use—must be adopted globally. Without behavioural and systemic changes, even the most advanced antibiotics may soon become ineffective, leaving the world vulnerable once again. BS

# Singapore pledges contribution of $1 M to Gavi for better access to vaccines

The Singapore government has pledged a contribution of $1 million to Gavi, the Vaccine Alliance. This reflects Singapore's support of efforts to bring life-saving vaccines to communities in need, especially in low-income countries.

Vaccines are one of the most effective tools in preventing diseases and saving lives. However, millions of people around the world still lack access to essential vaccines. Gavi bridges these gaps by working with governments, international organisations, and private sector partners to deliver vaccines to underserved populations. It also plays a pivotal role in enhancing pandemic preparedness, improving immunisation systems and ensuring equitable access to vaccines during global health emergencies. Singapore recognises the value of collective action in building stronger health systems and the need for international collaboration to address health challenges effectively.

# Indonesia's Health Ministry inks MoU with Philips to strengthen long-term health system resilience

Royal Philips, a global leader in health technology, and Indonesia's Ministry of Health have signed Memorandum of Understanding (MoU) to strengthen the transformation of Indonesia's healthcare system through clinical capacity development, digital health innovation, and the development of training centre and service hub. The MoU lays the groundwork for national programmes in clinical skills development specifically in radiology, cardiovascular and interventional care, as well as technical servicing and digital health integration. This initiative aims to enhance long-term health system resilience and enable more equitable access to high-quality care throughout Indonesia. Philips and the Ministry of Health will develop comprehensive training programmes to enhance the capabilities of healthcare professionals in Indonesia. Future specific programmes will be outlined in the form of technical cooperation agreements with the relevant directorates, including the Directorate General of Primary and Community Health, the Directorate General of Continuing Healthcare and the Directorate General of Health Human Resources.

# China approves world's first dual GCG/GLP-1 receptor agonist for weight loss

Innovent Biologics, Inc. has announced that China's National Medical Products Administration (NMPA) has approved mazdutide, a first-in-class dual glucagon (GCG)/glucagon-like peptide-1 (GLP-1) receptor agonist, for chronic weight management in Chinese adults with overweight or obesity. Mazdutide is the world's first dual GCG/GLP-1 receptor agonist approved for weight loss, offering a unique mechanism that enhances weight-loss efficacy while reducing visceral fat and delivering comprehensive metabolic benefits. The increasing prevalence of overweight and obesity in China poses an urgent public health challenge requiring immediate intervention. In April 2025, the National Health Commission officially included 'Healthy Weight Management Action' in the 'Healthy China 2030' initiative. Under the updated plan, the national health authorities aim to build supportive environments for effective weight management, raise public awareness and behavior skills, and promote healthy lifestyles to curb rising rates of overweight and obesity. Aligned with these national priorities and the 2025 weight management campaign, the approval of mazdutide represents a timely and important milestone.

# India approves Research Development and Innovation scheme with corpus of Rs 1 lakh cr


In a transformative step to bolster India's research and innovation ecosystem, the Union Cabinet, chaired by Prime Minister Narendra Modi, has approved the Research Development and Innovation (RDI) Scheme with a corpus of Rs one lakh crore. Recognising the critical role that the private sector plays in driving innovation and commercialising research, the RDI Scheme aims to provide long-term financing or refinancing with long tenors at low or nil interest rates to spur private sector investment in RDI. The scheme has been designed to overcome the constraints and challenges in funding of the private sector and seeks to provide growth and risk capital to sunrise and strategic sectors to facilitate innovation, promote adoption of technology and enhance competitiveness. The Governing Board of Anusandhan National Research Foundation (ANRF), chaired by the Prime Minister, will provide overarching strategic direction to the RDI Scheme. An Empowered Group of Secretaries (EGoS) led by the Cabinet Secretary, will be responsible for approving scheme changes, sectors and types of projects as well as second-level fund managers besides reviewing the performance of the Scheme.

## New Zealand enables GPs and nurse practitioners to start ADHD treatment from 2026

From February 2026, General practitioners (GPs) and nurse practitioners will be able to start medical treatment for adults with Attention Deficit Hyperactivity Disorder (ADHD), following decisions by New Zealand Medicines and Medical Devices Safety Authority and Pharmaceutical Management Agency. This is a change to the current system, under which GPs and nurse practitioners can only prescribe ADHD stimulant medicines to patients on a written recommendation from a paediatrician or psychiatrist, or after someone has already been diagnosed with ADHD and given a first prescription. Pharmac's Acting Director Advice and Assessment, Catherine Epps says the new rules, which come into effect in February 2026, will mean that over time, more GPs and nurse practitioners will be able to diagnose and start adults on treatment for ADHD. For children and adolescents, who currently require input from a paediatrician or psychiatrist to initiate medical treatment for ADHD, the changes will allow nurse practitioners, working within child health or mental health services, to diagnose and start treatment for ADHD.

## Korea supports international patients through medical sharing programme

The Korea International Medical Association, represented by Chairman Young Tae Kim, has signed a Memorandum of Understanding, with the Korea Health Industry Development Institute, led by President Soon Do Cha, and GS Retail, represented by CEO Seo Hong Heo. The agreement is aimed at launching a joint initiative to support international patients in need through a medical sharing programme. This tripartite agreement seeks to improve access to medical care for underserved patients abroad, particularly in countries such as Vietnam and Mongolia, while jointly building a sustainable model for global medical social contribution based on the unique strengths of each organisation. Under the MoU, the three institutions have agreed to collaborate for open calls and referral coordination for international patients requiring humanitarian medical support; Joint operation of support systems including airfare, lodging, and medical expenses; Co-development and utilisation of online/offline promotional content; and development and global expansion of an international social contribution model.

# Novo Nordisk invests RMB 800 M to expand manufacturing plant in China

Novo Nordisk has signed a Memorandum of Understanding (MoU) with TEDA Administrative Commission, agreeing to invest approximately RMB 800 million in the expansion of quality testing laboratories at its Tianjin manufacturing plant. With a total construction area of approximately 18,000 square meters, the project will build chemical, microbiological, and biological laboratories, which is scheduled to be completed by the end of 2026. Once operational, the expanded laboratory plant will meet the future testing requirements for pharmaceutical production at Novo Nordisk's Tianjin plant, further advancing the development of the biopharmaceutical industry in Tianjin TEDA (Tianjin Economic-Technological Development Area). In recent years, Novo Nordisk has continuously increased its investments to accelerate development in Tianjin. In 2023, the company invested RMB 1.18 billion to expand its finished products workshop and introduced a prefilled injection pen production line. In 2024, it invested approximately RMB 4 billion in a sterile formulation expansion project. This year, it invested around RMB 800 million in laboratory expansion.

# JCR Pharma licenses gene therapy platform to AstraZeneca Rare Disease unit for $825 M

Japan's JCR Pharmaceuticals has entered into a license agreement with Alexion, AstraZeneca Rare Disease, for JCR's new, proprietary JUST-AAV capsids to develop genomic medicines. JUST-AAV encompasses a range of vector types optimised for various target tissues, including liver-sparing, muscle-targeting, and brain-targeting variants, to expand the potential of AAV-based gene therapy. Under the terms of the agreement, Alexion may use the licensed capsids, which are part of the JUST-AAV platform, in up to five of Alexion's genomic medicines programmes. JCR will receive an upfront payment from Alexion.

JCR is eligible to receive milestone payments of up to $225 million related to research and development, and up to $600 million related to sales, for a total of up to $825 million, which reflects the aggregate milestones if all five targets are exercised. In addition, JCR is entitled to receive tiered royalties based on net sales.

# Torrent Pharma buys controlling stake in JB Pharma from KKR for Rs 25,689 Cr valuation

India-based Torrent Pharmaceuticals and global investment firm KKR have announced that Torrent has entered into definitive agreements to acquire controlling stake in J. B. Chemicals and Pharmaceuticals from KKR at an Equity Valuation of Rs 25,689 crore (on fully diluted basis), followed by a merger of the two entities. The transaction will be executed in 2 phases: (1) Acquisition of 46.39 per cent equity stake (on a fully diluted basis) through a Share

Purchase Agreement (SPA) at a consideration of Rs 11,917 crore (Rs 1,600 per share) followed by a mandatory open offer to acquire up to 26 per cent of JB Pharma shares from public shareholders at an open offer price of Rs 1,639.18 per share. In addition to the above, Torrent has also expressed its intent to acquire up to 2.8 per cent of equity shares from certain employees of JB Pharma at the same price per share as KKR. (2) Merger between Torrent and JB Pharma through a scheme of arrangement. As per the approval given by the Board of Directors of both companies, upon merger of JB Pharma with Torrent, every shareholder holding 100 shares in JB Pharma shall receive 51 shares of Torrent.

# Australia injects nearly A$100 M in funding for emerging biomedical & medical technology solutions

The Albanese Government has awarded nearly A$100 million in funding to three organisations for emerging Australian biomedical and medical technology innovations. The selected companies are- Brandon BioCatalyst for “CUREator: Translating Research into Health Outcomes” - A$33 million; ANDHealth for “Accelerating Evidence-based Digital and Connected Health Technologies”

- A$33 million; Biointelect Pty Ltd for “Biointelect Venturer” - A$32.9 million. The chosen companies will act as incubators to uplift small and medium sized enterprises (SMEs) with promising medical innovations to be commercialised by and for Australians. Each company will target projects within its area of expertise, new or repurposed medicines, digital health technologies and new medical devices. Over the next 10 years, the initiative will provide A$450 million to assist commercial development of Australian medical research.

# Chugai and Gero ink $250 M deal to develop new therapies for age-related diseases

Japan's Chugai Pharmaceutical and Gero, a Singapore-based biotechnology company, have entered into a joint research and license agreement to develop novel therapies for age-related diseases. In this collaboration, Chugai will create novel antibody drug candidates using its proprietary antibody engineering technologies for new drug targets discovered by Gero through analysis of human datasets using their unique artificial intelligence (AI) target discovery platform. Under this agreement, Gero grants Chugai exclusive worldwide rights for the creation, research, development, manufacturing, and commercialisation of antibodies for the identified targets. In addition to an upfront payment, Chugai will potentially pay up to approximately $250 million in total if predetermined development or sales milestones are achieved. If Chugai successfully launches a product, it will also pay royalties on sales to Gero.

# IHH Healthcare catalyses clinical research across global network with initial S$5 M fund

Malaysia headquartered IHH Healthcare, a world-leading integrated healthcare provider, has launched a transformative S$5 million (~Rs 34 crore) Research Grant & Innovation Sandbox programme to accelerate clinical research and innovation across its global network. Disbursed over five years, the fund empowers IHH clinicians and employees to pursue impactful clinical research and pilot ground-up, innovative ideas that address critical health issues, driving advancements that improve patient experiences and outcomes. Depending on the strength of proposals and the interest level, the S$5 million fund has the potential to grow further. Under the Clinical Research track, each project is expected to be completed within one year, or up to a maximum of two years for complex cases, with findings and outcomes published as part of the wider healthcare literature on oncology and chronic diseases. The projects under the Innovation Sandbox track will prioritise ideas that demonstrate clear impact such as scalability across IHH markets, cost savings, improved patient outcomes and better patient experience.

# Indian firm Biological E partners with China's Recbio to produce HPV9 vaccine

Jiangsu Recbio Technology, a leading Chinese biopharmaceutical company, has entered into a licensing cooperation agreement, and have commenced the technology transfer of their Recombinant 9-valent HPV (HPV9) vaccine, REC603, to Biological E. Limited BE, a leading Indian vaccine and pharmaceutical company. Recbio will provide BE with Drug Substance DS & transfer technology to formulate, fill, & package vaccines. It will also include technology transfer for DS production at an appropriate time in the future. According to the agreement, BE will receive the exclusive right to commercialise the vaccine in India and participate in UNICEF & PAHO tenders in other markets. The HPV9 vaccine is a recombinant vaccine designed to protect against nine types of Human Papillomavirus (HPV), including those responsible for cervical, vulvar, vaginal, anal, & oropharyngeal cancers, as well as genital warts.

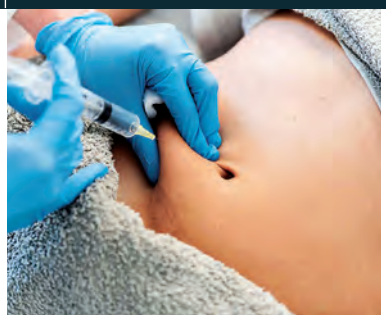
# WuXi Biologics launches next-generation platform for high-concentration biologics

WuXi Biologics, a leading global Contract Research, Development, and Manufacturing Organisation (CRDMO) in China, has announced the launch of WuXiHigh 2.0, a high-throughput formulation development platform designed for high concentration biologics. The platform enables protein concentrations of up to 230 mg/mL and achieves viscosity reduction by up to 90 per cent. High-concentration biologics, typically defined as formulations exceeding 100 mg/mL protein, offer advantages including reduced injection volume, improved dosing efficiency and enhanced patient adherence. They have increasingly emerged as a critical R&D priority for pharmaceutical companies. Currently, over 20 per cent of monoclonal antibody products approved by the US Food and Drug Administration (FDA) are high-concentration formulations. However, the development and manufacturing of such formulations often suffer from high viscosity and aggregation, which can complicate manufacturing, compromise product stability and increase risks of immunogenicity. The highest formulation concentration documented in FDA-approved biologics is 200 mg/mL.

# Hyphens Pharma introduces acne treatment 'Winlevi' in Singapore and Malaysia

Hyphens Pharma, a subsidiary of Hyphens Pharma International Limited, Singapore's leading specialty pharmaceutical and consumer healthcare group, has announced the launch of Winlevi (clascoterone) cream 1 per cent in Singapore and Malaysia, marking its first entry into Southeast Asia. This launch is made possible through an exclusive license and supply agreement with Cassiopea S.p.A., a subsidiary of Cosmo Pharmaceuticals N.V.


The agreement covers Winlevi and its future product extensions and improvements across 10 Southeast Asian countries (Singapore, Malaysia, Indonesia, Philippines, Vietnam, Thailand, Brunei, Cambodia, Laos and Myanmar). Winlevi is the first new class of molecule in acne treatment in over 40 years, acting through a novel mechanism of action that targets the androgen-sebum pathway directly within the skin. Its active ingredient, clascoterone, is the first commercially available topical androgen receptor inhibitor for acne, reducing sebum production and inflammation without causing systemic anti-androgen side effects.



# Korea-Israel partnership to commercialise injectable treatment for focal fat reduction

365mc, South Korea's leading medical institution specialising in fat reduction treatments, and Israel-based Raziel Therapeutics, a global clinical-stage biopharmaceutical company, have announced a strategic collaboration to jointly advance the clinical and commercial development of RZL-012 in South Korea. RZL-012 is an innovative injectable treatment for focal fat reduction that is currently progressing toward Phase 3 trials. Leveraging its domestic leadership, 365mc is rapidly expanding its global presence, with successful market entries in Indonesia, Thailand, and Vietnam, and a recent expansion confirmed in the United States, firmly positioning 365mc as a leading international authority in body contouring. Raziel Therapeutics is developing RZL-012, a New Chemical Entity (NCE) designed to selectively disrupt adipocyte membranes, leading to a reduction in localised subcutaneous fat. The drug is intended for aesthetic applications, including the treatment of submental fat (double chin) and non-surgical body contouring.

# DKSH and Bayer launch strategic partnership across multiple markets in Southeast Asia

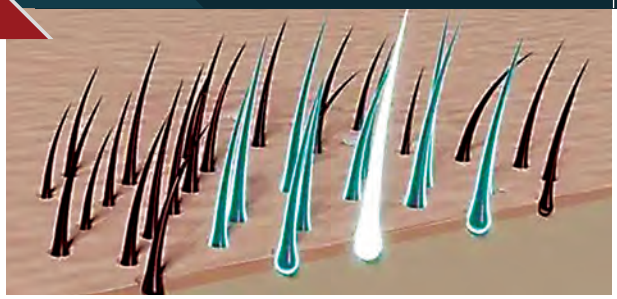
DKSH Business Unit Healthcare, a strategic healthcare solutions partner and leading provider of market expansion services for pharmaceutical, over-the-counter (OTC), consumer health and medical device companies, has announced a partnership with life science company Bayer. The scope of the partnership covers Bayer cardiovascular products in Singapore, Malaysia, Thailand, and the Philippines, as well as the women's health retail portfolio in Thailand. Recognised for delivering sustainable growth for client partners, DKSH has been chosen to implement a distribution and promotion alliance business model that provides end-to-end solutions prioritising healthcare access to patients. With DKSH's deep expertise in cardiovascular therapies, proven engagement with healthcare professionals, robust distribution infrastructure, and integrated commercial and medical affairs capabilities, this collaboration reinforces a significant step forward in continuing patient care and accessibility in the region.

# M42 and GE HealthCare join forces to advance AI-enabled solutions in UAE

M42, a global health leader powered by technology, artificial intelligence (AI) and genomics, will collaborate with GE HealthCare, a global innovator in medical technology, pharmaceutical diagnostics and integrated, cloud-first AI-enabled digital solutions, to enhance diagnostic precision and deliver more personalised patient outcomes, marking a significant step forward in the future of smart healthcare in the UAE. M42 and GE HealthCare will harness their combined strengths in advanced AI-powered solutions and explore collaborative go-to-market initiatives to deliver smarter, more connected healthcare in the region, with a focus on improving both clinical and operational efficiency. Leveraging M42's advanced AI, data and technology platforms alongside GE HealthCare's deep expertise in medical technology and product development, this collaboration will focus on co-developing innovative solutions to tackle pain points in healthcare systems and help support business and operational outcomes. By integrating AI with multimodal data analysis, M42 and GE HealthCare aim to accelerate product development and further position the region as a growing hub for life sciences innovation.

# AN Venture Partners announces one of the largest Japan focused biotech funds to date

AN Venture Partners (ANV), a global biotech venture capital firm, has announced the final close of its first fund, AN Venture Partners I, LP, achieving its target of $200 million (JPY29 billion), one of the largest Japan-focused biotech venture capital funds to date, and also one of the largest first-time biotech venture capital funds raised in the past year. More than 20 Limited Partners (LPs) have invested in the fund, led by Japan Investment Corporation, Shionogi & Co., Otsuka Pharmaceutical Co., MUFG Bank, and Sumitomo Mitsui Banking Corporation. ANV will invest across all stages, from pre-proof-of-concept to advanced clinical stages, and sources, whether academia, big pharma spin-outs or combinations thereof, in biotech and biotech-related fields. The fund is interested in all modalities and disease spaces that can have significant clinical impact. ANV will focus on science originating in Japan but can invest globally as well. Given the current ecosystem in Japan, ANV will often take an active role in company-creation and work hand-in-hand with the founders to build global biotech companies.



# Singapore-Korea partnership to apply AI in hair follicle regeneration research

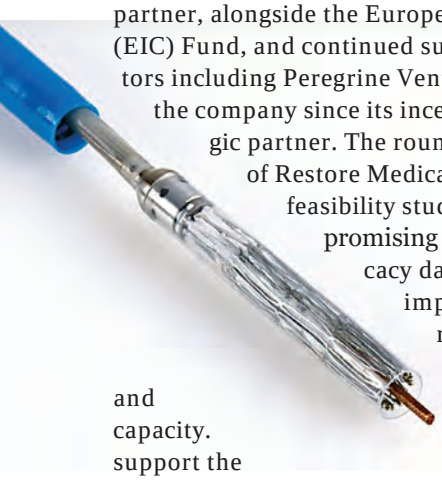
Singapore-based startup NYB.AI and Pnaseer Inc., a startup based in South Korea, have announced a strategic partnership to accelerate the discovery of compounds that promote hair follicle regeneration using artificial intelligence (AI). The collaboration combines NYB.AI's AI-powered compound screening capabilities with Pnaseer's proprietary bio-nanoparticle drug delivery platform to enhance therapeutic efficacy. The partnership centers on Project Follica, an initiative aimed at identifying and optimising both natural and synthetic compounds that stimulate hair growth. NYB.AI will lead the development of advanced AI models to analyse extensive compound libraries, while Pnaseer will focus on formulating delivery systems that maximise the bioavailability and targeting precision of promising candidates. NYB.AI's proprietary AI technology enables rapid prediction of compound-target interactions in hair biology, significantly accelerating early-stage discovery.

# Illimis Therapeutics raises $42 M to accelerate CNS and immune disease drug development

South Korea-based startup Illimis Therapeutics has announced the closing of 58 billion KRW ($42 million) Series B financing to accelerate CNS and immune disease drug development via GAIA platform. The Series B round saw strong participation from both existing and new investors, demonstrating high industry confidence in Illimis Therapeutics' vision and technology. Eight existing investors, including DSC Investment, Woori Venture Partners, Korea Development

Bank, Aju IB Investment, Quad Asset Management, Company K Partners, GS Ventures, and Dayli Partners, reaffirmed their commitment. They were joined by ten new investors: LB Investment, TS Investment, Shinhan Venture Investment, S&S Investment, Hana Ventures, Maple Investment Partners, A Ventures, IMM Investment, Schmidt, and Industrial Bank of Korea. The proceeds will be used to accelerate the development of GAIA-based Alzheimer's Disease therapeutics, expand its target indications to various immune disorders, and broaden its pipeline of potential blockbuster drug candidates.

# Restore Medical secures $23 M to advance medical device for heart failure therapy



Restore Medical, a clinical-stage medtech startup based in Israel, developing transcatheter therapies for heart failure, has announced the successful closing of a $23 million Series B financing round. The round is co-led by Pitango HealthTech and a global strategic healthcare partner, alongside the European Innovation Council (EIC) Fund, and continued support from existing investors including Peregrine Ventures, which has supported the company since its inception, and another strategic partner. The round will fund the completion of Restore Medical's ongoing European feasibility study, which has demonstrated promising long-term safety and efficacy data, including meaningful improvements in ventricular reverse remodeling, hemodynamic performance, and patient functional capacity. The investment will also support the launch of a US-based clinical study, following the Breakthrough Device Designation granted by the US Food and Drug Administration (FDA) in 2024. Restore Medical's unique transcatheter approach introduces a new minimally invasive therapeutic option for heart failure patients who have limited effective treatments today.

# HanchorBio signs $200 M deal with Shanghai Henlius Biotech to expand immuno-oncology reach

HanchorBio Inc., a Taiwan-based biotechnology startup developing innovative immunotherapies for oncology and autoimmune diseases, has announced the signing of a major out-licensing agreement with Shanghai Henlius Biotech, Inc. The deal grants Henlius exclusive development and commercialisation rights to HCB101 across Greater China (including Mainland China, Hong Kong, and Macau), key Southeast Asian countries, as well as all countries in the Middle East and North Africa (MENA). Under the terms of the agreement, HanchorBio will receive an upfront payment of $10 million, with additional payments tied to development and regulatory milestones of up to $192 million. Henlius will also pay tiered royalties and assume full responsibility for development, manufacturing, and commercialisation in the licensed territories. HanchorBio retains all rights outside the licensed regions. HCB101 is a novel engineered SIRPα-IgG4 Fc fusion protein developed using HanchorBio's proprietary Fc-Based Designer Biologics platform.

# DeepTek AI solution gains WHO recommendation in global fight against TB

Indian startup DeepTek, a leading medical imaging AI company, has received a significant recommendation from the World Health Organization (WHO) for its Chest X-ray AI solution for TB screening. In its latest policy guidance, WHO has recommended the solution as meeting the performance standards for Computer-Aided Detection (CAD) software used in tuberculosis (TB) screening across both community and facility-based screening settings.

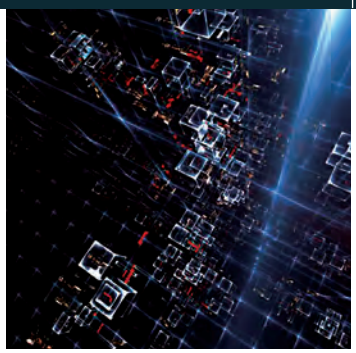
In 2022, 10.6 million people were diagnosed with TB, with the highest burden seen in South-East Asia, Africa, and the Western Pacific. These regions often face a shortage of radiologists and fragmented screening systems, leading to delayed diagnosis and treatment. DeepTek's Chest X-ray AI solution addresses this challenge head-on by delivering rapid analysis of chest X-rays in under a minute, even in remote areas without internet connectivity, making early intervention possible at scale. DeepTek's Chest X-ray AI solution is certified by both the US FDA and EU CE MDR.

# Emergency vaccine response cuts infectious disease deaths by nearly 60%

Researchers at Burnet Institute, in collaboration with Gavi, the Vaccine Alliance, have provided the world's first ever look at the historical impact of emergency vaccination efforts on public health and global health security, with a comprehensive study of 210 outbreaks of five infectious diseases- cholera, ebola, measles, meningitis and yellow fever, in 49 lower-income countries between 2000 and 2023. For diseases like yellow fever and ebola, outbreak response vaccination efforts are estimated to have decreased deaths by 99 per cent and 76 per cent respectively. This impact from outbreak response is in addition to millions of deaths and cases averted by preventive and/or routine vaccination against the five diseases. In all cases, the study found emergency vaccination significantly reduced the threat of outbreaks expanding. The findings also underscored the importance of rapid outbreak response times and maintaining strong routine immunisation coverage, especially in high-risk settings, to prevent and minimise cases and deaths. Gavi-funded global stockpiles of cholera, ebola, meningitis and yellow fever vaccines are accessible to all countries in the world, and their use for outbreak response is managed by the International Coordinating Group for Vaccine Provision, led by IFRC, MSF, UNICEF and WHO.

# PAHO launches dashboard to monitor respiratory viruses in the Americas

The Pan American Health Organization (PAHO) has launched a new interactive dashboard to enhance monitoring and analysis of respiratory virus circulation trends across the Americas, with the goal of strengthening surveillance and facilitating timely analysis of regional trends. This interactive dashboard presents virological data (from FluNet) and epidemiological data (from FluID) available through the regional data hub (AMart), providing an intuitive, multilingual platform for exploring key indicators. Virologic Surveillance presents percent positivity and laboratory sample data for all countries and subregions, enabling detailed tracking of virus circulation patterns. Syndromic Surveillance displays data on reported cases of severe acute respiratory infection (SARI) and influenza-like illness (ILI), along with intensive care unit (ICU) admissions and SARI-related deaths, offering insights into the clinical presentation of circulating respiratory viruses. Country Profiles allows users to select any country in the Americas and view all related virologic and syndromic surveillance data on a single, integrated page.

# UK launches multi-billion-pound compute roadmap for healthcare and other sectors

Quicker health diagnoses, smarter energy supplies, tackling climate change and improved public service delivery – just some huge potential benefits of the new compute roadmap, launched by Department for Science, Innovation and Technology (DSIT) and UK Research and Innovation (UKRI). The roadmap heralds a significant increase in publicly accessible compute capacity. Investments include up to £2 billion to deliver a holistic and user-centred compute ecosystem with £1 billion to expand the AI Research Resource 20-fold by 2030. It also provides up to £750 million for UKRI to invest in a new national supercomputing service at Edinburgh. UKRI is further supporting the roadmap with over £59 million of additional investments in world class skills and training, UK-wide capability and access. Many measures will help grow knowledge exchange between business and research experts.

## US expands access to lifesaving gene therapies

The Centers for Medicare & Medicaid Services (CMS) in the US has announced that 33 states, plus the District of Columbia and Puerto Rico, will participate in the Cell and Gene Therapy (CGT) Access Model, a bold new approach to delivering cutting-edge treatments for people on Medicaid living with sickle cell disease. Participating states represent approximately 84 per cent of Medicaid beneficiaries with the condition, significantly expanding access to transformative care. Led by the CMS Innovation Center, the model is the first time the federal government has negotiated outcomes-based agreements with CGT manufacturers on behalf of state Medicaid agencies. Under the model, participating states receive guaranteed discounts and rebates from participating CGT manufacturers if the therapies fail to deliver their promised therapeutic benefits. This model has the potential to improve health outcomes for patients with sickle cell disease while also ensuring state and taxpayer dollars are being used more effectively.

## Africa to decentralise diagnostics and accelerate outbreak response

In a major step toward faster and more localised outbreak response, Africa Centres for Disease Control and Prevention (CDC) convened public health leaders from ten African countries in Yaoundé to co-develop a continental framework for decentralising laboratory services. The four-day workshop placed equitable access to diagnostics at the core of Africa's epidemic preparedness and response strategy. Organised by the Africa CDC, in partnership with the Ministry of Health of Cameroon, the World Health Organization (WHO), and the European Union, the workshop brought together government officials, national laboratory directors, and public health experts from across the continent. Together, they produced the Continental Guidance for the Decentralisation of Laboratory Services—a practical, action-oriented tool to help Member States design national diagnostic strategies that bring testing closer to communities and improve outbreak detection and response.

# New vaccine set for human trials in Nipah outbreak hotspot

A promising vaccine candidate against one of the world's most deadly viruses, Nipah, is ready for testing in mid-stage human trials in Bangladesh, where people now die almost every year in Nipah disease outbreaks. When the trial launches in early 2026, the vaccine (PHV02), developed by the US-based biotech company Public Health Vaccines (PHV), will be among the first Nipah vaccine candidates to reach this stage of testing in people. Norway-based Coalition for Epidemic Preparedness

Innovations (CEPI) will provide $17.3 million to Public Health Vaccines to support the trial, building on a previous investment that successfully advanced its Nipah vaccine through early-stage clinical testing—Phase Ia and Phase Ib clinical trials—demonstrating a good safety profile and immunogenicity in both one- and two-dose regimens. The additional funds will ensure the continued development of this vaccine into Phase II trials to test its safety, tolerability, manufacturability and ability to generate an immune response. Researchers aim to recruit around 500 adult and 75 paediatric participants in Bangladesh.

# WHO maps application of AI in traditional medicine

In a significant milestone for global healthcare innovation, the World Health Organization (WHO) has released a technical brief titled "Mapping the Application of Artificial Intelligence in Traditional Medicine", acknowledging India's pioneering efforts in integrating Artificial Intelligence (AI) with traditional medicine systems, particularly Ayush systems. The release follows India's proposal on the subject, leading to the development of WHO's first-ever roadmap for applying AI in traditional medicine. The document showcases a range of AI-driven applications in Ayurveda, Siddha, Unani, Sowa Rigpa, and Homoeopathy, including diagnosis support systems that integrate traditional methods like pulse reading, tongue examination, and Prakriti assessment with machine learning algorithms and deep neural networks. These efforts are enhancing diagnostic accuracy and enabling personalised preventive care. One of the standout features in the WHO brief is the mention of Ayurgenomics, a scientific breakthrough that combines genomics with Ayurvedic principles. This initiative aims to identify predictive disease markers and personalise health recommendations using AI-based analysis of Ayurvedic constitution types.

# WHO launches bold push to raise health taxes and save millions of lives

The World Health Organization (WHO) has launched a major new initiative urging countries to raise real prices on tobacco, alcohol, and sugary drinks by at least 50 per cent by 2035 through health taxes in a move designed to curb chronic diseases and generate critical public revenue. The "3 by 35" Initiative comes at a time when health systems are under enormous strain from rising noncommunicable diseases (NCDs), shrinking development aid and growing public debt. The consumption of tobacco, alcohol, and sugary drinks are fuelling the NCD epidemic. NCDs, including heart disease, cancer, and diabetes, account for over 75 per cent of all deaths worldwide. A recent report shows that a one-time 50 per cent price increase on these products could prevent 50 million premature deaths over the next 50 years. The Initiative has an ambitious but achievable goal of raising $1 trillion over the next 10 years.

# WHO recommends injectable lenacapavir for HIV prevention

The World Health Organization (WHO) has released new guidelines recommending the use of injectable lenacapavir (LEN) twice a year as an additional pre-exposure prophylaxis (PrEP) option for HIV prevention, in a landmark policy action that could help reshape the global HIV response. LEN, the first twice-yearly injectable PrEP product, offers a highly effective, long-acting alternative to daily oral pills and other shorter-acting options. With just two doses per year, LEN is a transformative step forward in protecting people at risk of HIV, particularly those who face challenges with daily adherence, stigma, or access to health care. As part of these guidelines, WHO has recommended a public health approach to HIV testing using HIV rapid tests to support delivery of long-acting injectable PrEP, including LEN and cabotegravir (CAB-LA). The simplified testing recommendation removes a major access barrier by eliminating complex, costly procedures and enabling community-based delivery of long-acting PrEP through pharmacies, clinics, and tele-health.

# Resurging Funding Catapults APAC BIOTECH STARTUPS

Asia-Pacific's biotech startup scene is on the cusp of a renaissance. After a tough 2024 marked by shrinking venture capital, 2025 is showing revived investor enthusiasm and a rebound in funding-especially for oncology, gene therapy, and AI-driven drug discovery. With 9,905 life sciences startups now active across the region, APAC Countries are leveraging scientific innovation, government support, and new incubators to move beyond service roles and develop world-class therapeutic assets. Let's take a closer look at Asia's startup ecosystem, evolution of investor sentiment over the past few years, and buoying biotech areas.

After riding the COVID-19 funding wave, APAC's biotech startup ecosystem faced a sharp correction. 2024 was the sector's harshest year since 2019, with global private equity and venture capital (VC) deal value and volume in biotech dropping to their lowest levels in five years, according to S&P Global Market Intelligence. Investors pulled back as post-pandemic euphoria gave way to tighter capital, macroeconomic uncertainty, and regulatory bottlenecks.

"In APAC, VC deal volumes fell by 18 per cent year-on-year (YoY) in the first half of 2024, while deal value plummeted by 27 per cent. Even biotech-heavy markets like China, Japan, and South Korea saw a decline of over 20 per cent in funding metrics compared to the previous year," said ***Aurojyoti Bose, Lead Analyst at GlobalData.***

Yet, 2025 is already showing signs of cautious optimism. "The APAC venture capital funding activity in biotech, which witnessed consistent YoY decline through the first half of 2024, showcased a rebound in volume in H1 2025. Deal volume has risen by 14 per cent YoY in the first half of 2025, and total VC funding has crossed the $1 billion mark. While still short of the highs of 2021–2022, the recovery is being fuelled by a sharper focus: capital is flowing to areas investors view as

scientifically promising and commercially viable," said Bose.

In the first half of 2025, biotech funding in APAC has shown signs of revival, marked by a wave of significant investments across oncology, gene therapy, rare diseases, and AI-driven drug discovery. Precision medicine and cell therapies are also reshaping how companies design and personalise treatment approaches.

While early-stage activity has remained relatively steady, late-stage startups particularly those seeking Series B or beyond are encountering headwinds. Investors are exercising greater caution, closely assessing commercial potential and exit strategies. As a result, many larger growth rounds have been delayed, downsized, or reprioritised.

Even so, a series of high-profile raises in H1 2025 suggests investor appetite is returning, especially at the intersection of computation and biology. Notable deals include: Insilico Medicine raised $123 million to advance its AI-led drug discovery platforms; AdvanCell secured $112 million to grow its pipeline of radionuclide therapies and Shanghai Alebund Pharmaceuticals closed a $75 million round to support development of renal disease treatments.

## Asia startup ecosystem

The life sciences startup ecosystem across Asia is entering a new phase of maturity. Countries like Singapore, China, Japan, South Korea, and Australia are no longer just service-driven hubs or low-cost development centres. Instead, they are now home to startups that are creating proprietary technologies, developing innovative assets, and engaging actively in global dealmaking.

"The life sciences ecosystem in Asia has been maturing extremely well over the past years. Previously dominated by service providers, the sector now includes startups creating their own unique technologies, including preclinical and clinical stage biotech companies developing novel and innovative assets. Japan and China currently lead the sector with the highest number of successful product innovations in the global market. Asian, and in particular Chinese companies are now able to develop attractive assets and license them to global companies, competing effectively with their European and US counterparts. When it comes to developing new drugs and running clinical trials, Chinese companies have a clear advantage in terms of execution: high quality, low cost, and speed," said

***Dr Anne-Laure Puaux, CEO, WEHI Ventures.*** WEHI Ventures was established in 2023 to manage 66ten, the first internal pre-seed and seed fund created by Australian medical research institute, WEHI. 66ten is investing A$66M over 10 years to build on WEHI's track record of commercial success.

China's strength lies not just in its scale but also in the depth of its scientific workforce, many of whom bring international training and experience. This has helped the country move rapidly from 'me too' products to original innovation, earning attention from large global pharma players.

"Over the course of the past decade, we've seen dramatic advances in the life science ecosystem across Asia, particularly in countries like China and South Korea. China is the emerging powerhouse of innovation, leveraging a wealth of internationally-trained, highly experienced Chinese scientists, and access to a vast patient population, to move quickly from low-risk, 'me too' products to cutting-edge biotech innovation. This advance is reflected in the level of global pharma engagement with Chinese biotech, as noted in the Locust Walk Q2 2025 report," said

***Ian Nisbet, Chief Operating Officer, Cartherics, Australia.*** Cartherics

is a pre-clinical stage company developing cell-based products for the treatment of cancer and other intractable diseases such as endometriosis.

Chinese companies are also leading the region's licensing activity. They are no longer just receiving technology transfers, many are originating valuable assets and striking outbound deals with global partners. Looking at this, Nisbet pointed out "Geographically, the balance of licensing activity has been evolving with China-based companies dominating 2025's licensing deal flow, accounting for 42 per cent of total deal value, cementing China's role as a major participant in global dealmaking through large pharma partnerships."

Clinical development has followed a similar trajectory. China has become the top location for clinical trials globally in the last couple of years, offering a combination of speed, scale, and execution quality. "The trend is also seen with clinical development – since 2023 China has been the top location in the world for clinical trials, with 39 per cent of all clinical trials worldwide having Chinese sites", noted Nisbet.

While China's sheer scale has played a role in its dominance, other Asian countries have also built competitive ecosystems by focusing on niche strengths. Countries like South Korea, Japan, and Singapore are investing in platform technologies such as cell and gene therapies (CGTs), supported by strong policy and regulatory support. "Countries such as South Korea, Japan and Singapore, have utilised government, regulatory and investor support to build world-class capabilities in areas like CGTs", said Nisbet.

Meanwhile, the broader funding environment across the APAC region continues to adjust in the wake of the post-2021 venture capital reset. Australia reflects this shift especially well, balancing a strong pipeline of early-stage innovation with a more measured capital environment.

"From Sydney, we see two counter-currents shaping APAC biotech. First, capital is still working through a post-2021 reset. Regional life-sciences venture funding has contracted from roughly $187 billion at the peak to about $78 billion in 2023 and an estimated $66 billion last year. Established venture houses are focusing on supporting their existing portfolios, while crossover funds are busy with their public-equity books. As a result, mega-rounds are scarce and more Series A's are being stitched together with one specialist fund and a handful of generalists", said ***Anthony Liveris, CEO, Proto Axiom,*** an investment company with an incubation arm.

Having similar observations, ***Dominic Marinelli, Terrain Capital Limited and Corporate Advisor, Cartherics*** said, "Australia, while often viewed as a distinct market, shares many characteristics with its Asian counterparts in fostering early-stage innovation. Its strong research base and efficient clinical trial environment make it a compelling location for early-phase drug development. However, like much of the region, the challenge of securing substantial later-stage growth capital remains."

This tension between early-stage momentum and late-stage capital constraints is echoed across the region. While early-stage company creation and R&D funding have not been major obstacles, financing for clinical development and company scale-up is far less accessible.

"In terms of funding depth, financing for company creation and the conduct of early-stage R&D has not been a particular problem. However, the funding of company growth and clinical development remains a challenge across the region. Pharma deals provide validation and support for later-stage development but pharma companies are inherently conservative and prefer to invest in de-risked assets. Other sources of capital (VCs, family offices, superannuation funds, etc.) need to expand their remit to increase the amount of risk capital available to Asian life science companies. The lack of such capital forces companies to prematurely list on public markets, which is one of the factors that has negatively impacted on the development of the sector in Australia. Thus, while

# Country wise analysis of startups with funds raising

Asia-Pacific is home to 9,905 active life sciences startups, as of July 20, 2025, according to Tracxn. Of these, 4,289 have secured funding, and 1,840 have advanced to Series A or later stages. While the concentration of startups varies across countries, the region continues to show steady momentum in new company formation with an average of 453 life sciences startups launched annually over the past decade.

## China

- **Total startups:** 3,060
- **Funding in 2025 (till June):** $471 million

China's rise on the global stage has been impressive. In 2024, one-third of all biotech assets licensed by Big Pharma originated from China, a sharp increase from less than 10 per cent in 2017. These innovations span oncology, immunology, diabetes, and increasingly, platform technologies such as antibody-drug conjugates (ADCs), cell therapies, and AI-assisted drug discovery. Of the 3,060 life sciences companies in China, 1,676 have secured funding. Among these, 848 have reached Series A or higher, and 532 have progressed to Series B or beyond. Over the past decade, China's life sciences sector has attracted more than $38.7 billion in total funding. As of 2025, the sector has raised $471 million to date. (Source:Tracxn)

## India

- **Total startups:** 2,561
- **Funding in 2025 (till June):** $122 million

According to Biotechnology Industry Research Assistance Council (BIRAC), set up by the Department of Biotechnology (DBT), Government of India, the country now has over 10,075 biotech startups, a tenfold increase in the last nine years. Annual funding rose from $193 million in 2020 to $269 million in 2024. India's biotech sector is dominated by early-stage ventures; nearly 90 per cent of startups are in pre-Series A. (Source: Omnivore and Nucleate report)

## Singapore

- **Total startups:** 464
- **Funding in 2025 (till June):** $66.6 million

Singapore has maintained steady startup momentum, with 180 funded companies, 73 beyond Series A, and two unicorns. The local ecosystem is buoyed by strong government support and deepening infrastructure. LEK Consulting projects the number of biotech firms in Singapore to rise over 61 per cent between 2022 and 2032. (Source:Tracxn)

## Australia & New Zealand

- **Total startups:** 1,298
- **Funding in 2025 (till June):** $146 million

Australia and New Zealand together account for over 1,200 life sciences startups, with 436 funded and 248 in Series A+. Investor sentiment rebounded strongly in 2025, driven by confidence in translational science and strong clinical pipelines. The life sciences sector in Australia and New Zealand saw a total funding of more than $4.96 billion in the last 10 years. The region also leads in IPO volume with 118 listings in the past decade. (Source: Tracxn)

## Japan

- **Total startups:** 653
- **Funding in 2025 (till June):** $44.3 million

Japan's startup formation has been slower compared to its peers, with many biotech initiatives still emerging from large pharma or academia. Only 46 startups have reached Series A+ stage. However, the country's drug development and regenerative medicine research remains globally competitive. Investors are starting to back more specialised ventures, including startups in neurodegeneration, advanced cell therapies, and organoids. (Source: Tracxn)

## South Korea

- **Total startups:** 1,062
- **Funding in 2025 (till June):** $57.3 million

South Korea has a maturing biotech scene anchored by firms like MedPacto, Helixmith, and Genexine. Of the total, 533 startups are funded, and 231 are Series A+. The country's strength in biologics manufacturing is now extending into startups developing antibody-drug conjugates (ADCs), microbiome therapeutics, and AI-led R&D. Although 2025 funding is slightly down, the government's 'Bio Economy 2030' roadmap continues to attract institutional and cross-border interest. (Source: Tracxn)

BS

# Biotech's Resurgence: Innovation Amid Market Disruption or A Generational Opportunity in Innovation

**Geofrey Hsu,**
Portfolio Manager,
The Biotech Growth Trust

The biotechnology sector is showing signs of a resurgence. After several years of underperformance particularly among small and mid-cap companies, a convergence of scientific breakthroughs, shifting market dynamics, and growth in investor sentiment, is setting the stage for a potentially compelling recovery. For long-term investors and industry observers, this represents a significant opportunity to engage with an innovative and high-growth sector in the global economy at compelling valuations.

## Breakthroughs Driving the Sector Forward

From early 2021 through the middle of 2025, small-cap biotech stocks (as represented by the Russell 2000 Biotech Index) significantly underperformed the broader market (as represented by the S&P 500), declining by 47.1 per cent in British pounds, while the market appreciated by 67.5 per cent. Today, nearly a quarter of listed biotech firms are now trading at negative enterprise values.

This level of market dislocation appears increasingly disconnected from the sector's scientific momentum and the technical progress being made, with new therapies and technologies continuing to emerge at a rapid pace. Recent clinical breakthroughs that highlight the sector's momentum include ivonescimab, a bispecific antibody for lung cancer, showing a 49 per cent reduction in disease progression relative to the current standard of care Keytruda. Meanwhile, lenacapavir, developed by Gilead Sciences, a long-acting drug for HIV prevention and treatment, was found to demonstrate near-total prevention of HIV infections among high-risk populations, and was recently approved by the US FDA. Moreover, efruxifermin, a fibroblast growth factor analogue by Akero Therapeutics, showed histological improvement from cirrhosis to earlier fibrosis stages, a result previously unseen in liver disease trials. This represents a paradigm shift in treating advanced liver disease. These are just a few examples of how biotech is delivering real, measurable impact.

## The FDA's Role in Accelerating Innovation

These milestones are part of a broader wave of innovation in the sector with strong government support. In 2024 alone, the FDA approved 59 new drugs, many of which are using innovative technologies such as gene editing, oligonucleotide silencing, and multispecific antibody approaches, to address diseases which were previously untreatable.

The FDA has embraced accelerated approval pathways to help biotechnology companies bring forth promising therapies to patients at a faster pace. These mechanisms are particularly important for small and mid-sized biotech firms, which often rely on timely regulatory feedback to secure funding and partnerships. They are also critical for patients who are in desperate need of effective therapies.

Moreover, the agency's openness to novel modalities—such as gene therapies, RNA-based treatments, and cell therapies—has helped validate emerging platforms and attract global investment. The FDA's continued collaboration with international regulators is also streamlining cross-border clinical development, further supporting the globalisation of biotech innovation..

## M&A and Strategic Investment Trends

Large pharmaceutical companies are facing a looming patent cliff for many of their key products. This is fuelling a renewed appetite for mergers and acquisitions, particularly targeting innovative biotech startups. Smaller biotech firms with innovative solutions are attractive acquisition

targets for larger pharmaceutical companies aiming to bolster their pipelines and maintain competitive advantage.

Earlier this year, Intra-Cellular Therapies, a commercial-stage biotech focused on treatments for psychiatric disorders, was acquired by Johnson & Johnson, for $14.6 billion. In April, Merck KGaA acquired U.S. biotech SpringWorks Therapeutics for $3.9 billion, gaining access to its medicine OGSIVEO, the first and only FDA-approved therapy for the treatment of desmoid tumors – a recurrent tumor that develops in connective tissues and joints.

This trend is creating a fertile environment for early-stage biotech firms to scale rapidly or exit through strategic partnerships. The combination of scientific innovation and strategic urgency is likely to drive continued consolidation in the sector. While M&A activity slowed in 2024, it has picked up in the first half of 2025 and we expect activity to continue to be driven by strategic consolidation and the pursuit of cutting-edge technologies.

## A Sector Poised for Renewal

While emerging biotech is often associated with high risk, this dynamism is also what makes the sector compelling. The pace of scientific progress, evolving clinical data, and shifting regulatory landscape create an environment where change is constant—and opportunity is abundant.

For investors, this volatility can be a strategic advantage. It allows for tactical positioning around key milestones such as trial readouts, regulatory approvals, and partnership announcements. Many of the most successful biotech investors embrace this pace, using it to identify undervalued assets and capitalise on short-term dislocations that can lead to long-term gains.

With valuations now below even the levels seen during the dot-com bust and the 2008 crisis, we are looking at a notable opportunity. The biotech sector is navigating a complex but promising landscape. Valuations are low, innovation is accelerating, and global interest is rising. For those with a long-term horizon and a belief in the power of scientific progress, the current environment offers a compelling thematic opportunity — not just in specific funds, but across the entire spectrum of international biotech innovation. BS

the Asian life sciences sector has grown and matured over recent times, the ability to extend this growth to create internationally-competitive, commercially viable biopharma companies is constrained by the lack of funding depth across the region," said Nisbet.

Despite the tighter funding environment, Singapore has stood out for its ability to continue attracting global capital. Anchored by a strong research base and well-developed translational infrastructure, the city-state has emerged as a magnet for top-tier investors. "Regarding funding depth, Singapore's rich pool of scientific innovation has increasingly attracted global investor interest. Venture financings have seen a multiple fold increase from 1 in 2012 to 12 in 2023. Leading life science investors from US, Europe and other parts of Asia established a presence in Singapore alongside ClavystBio in the past few years. These include notable names such as Polaris Partners, Lightstone Ventures, Accelerator Life Science Partners, Flagship Pioneering, MPM, Droia Ventures, 4BIO, Panacea, Qiming, and Lyfe Capital," said ***Khoo Shih, CEO, ClavystBio, Singapore.***

ClavystBio was established by Temasek in 2022 to capitalise on this robust growth as a life sciences investor and venture builder. It invests in breakthrough innovations across therapeutics, medtech, and digital health, partnering with innovators to launch and grow global companies from Singapore. The recent achievements of its portfolio companies, Allay Therapeutics, Callio Therapeutics, Leyden Labs and Nuevocor, underscore the quality of Singaporean innovation and its appeal to global investors. Both companies recently closed major financing rounds with global syndicates and are successfully progressing their clinical trials in key international markets.

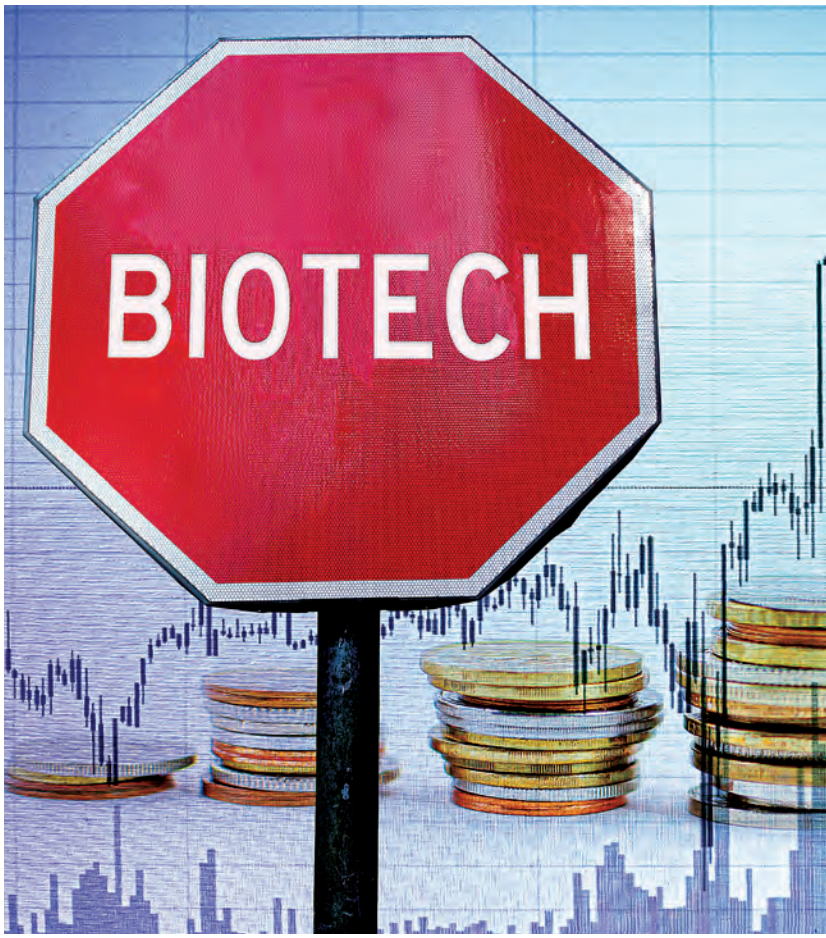
## Biotech investment shift

Investor interest in the life sciences sector has long been influenced by pharmaceutical demand, given that pharma remains the primary customer for biotech innovations. Over the past few years, however, investment priorities have clearly shifted.

According to Nisbet, "While the initial widespread enthusiasm for first-generation cell therapies matured, leading to a more discerning view, investor attention for biotech startups has notably shifted. The primary focus now lies in areas like monoclonal/bispecific antibodies, immunotherapies, antibody-drug conjugates (ADCs), mRNA/lipid nanoparticles, and in vivo gene editing. These are the modalities

## Rising venture activity in Asia

- In Singapore, Flagship Pioneering launching a regional hub and Accelerator Life Science Partners making its first investment in the region co-leading a $16 million Series A round with ClavystBio in Automera.
- In Australia, Brandon Capital has launched its sixth fund, while the Merchant Biotech Fund just three years old has seen strong investor interest and performance, prompting plans to triple investments.
- In Japan, US based AN Venture Partners has closed a $200 million debut fund, one of the largest ever first-time biotech funds in Asia.
- Hong Kong-based ORI Capital is planning a $350 million fund targeting Chinese healthcare startups.
- South Korea, too, is committing heavily to the space, with the government investing KRW 910 billion to raise additional venture funding for startups.




pharma companies are actively pursuing, and hence, the ones investors are willing to support."

This alignment between pharma demand and investor appetite drives capital flows, but Nisbet adds a cautionary note, "New technologies invariably go through highs and lows, driven heavily by the emergence of data. The challenge for companies is to raise enough capital to survive through the lean times and generate supportive data. Those working in areas currently in favour must use this time to raise capital and deliver—otherwise they won't remain in favour. This is true whether the companies are in Asia or anywhere else in the world."

While the capital environment remains selective, scientific innovation across the APAC region is advancing steadily. "Patent filings, clinical read-outs and new fast-track pathways out of Korea, Singapore and Australia show an innovation engine that is healthier than the funding headlines suggest. What suffers in the current environment is seed-to-Series A translation, especially for platform technologies that need heavier early capital. Investors instead gravitate toward licence-ready, single-asset programmes where risk can be shared with strategic partners," said Liveris.

China and South Korea have taken a prominent lead in this evolving investment landscape. "Chinese biotechs, in particular, have demonstrated their ability to attract funding for the development of globally relevant, high-quality assets. Increasingly, China-originated companies are entering global markets not just through licensing deals but by setting up new entities in target regions like the US, often with backing from their original investors in exchange for royalties and equity," said Dr Puaux.

According to McKinsey, Asian-origin companies driven largely by China and Korea contributed 43 per cent of the global biotech asset pipeline in 2023. Areas attracting the most attention mirror global trends, with oncology and obesity emerging as consistent investment themes.

### Incubator boom

APAC has seen a surge of incubators in recent times, driven by the need to de-risk early-stage science and fast-track translational research into viable biotech ventures. Many of these initiatives have emerged through academic–industry–

government collaborations, while others are being seeded by global pharma and venture capital firms seeking early access to innovation in the region.

Singapore is emerging as a hub for structured translational research and early-stage biotech incubation. The co11ab incubator—set up by NTU, A*STAR, and the National Healthcare Group—is embedded in the Lee Kong Chian School of Medicine, near major hospitals, to promote bench-to-bedside innovation. 65Lab, backed by ClavystBio, Leaps by Bayer, Lightstone Ventures, Polaris Partners, and Evotec, supports academic spinouts and company formation. Meanwhile, LIVE Ventures, launched by Duke-NUS Medical School, focuses on commercialising research and developing startup-ready talent.

Australia is strengthening its biotech startup ecosystem through a network of incubators formed via public–private and academic collaborations. CSL, WEHI, and the University of Melbourne are launching a new incubator—run by an independent operator—to provide lab and office space for early-stage biotech ventures. Brandon BioCatalyst's CUREator, backed by the Medical Research Future Fund, will support up to 15 therapeutic startups in its upcoming round. Biointelect Venturer, a new initiative informed by extensive stakeholder input, is slated for launch in 2026. At the same time, emerging incubators like Jumar Bioincubator and Proto Axiom are driving founder-centric innovation and startup readiness.

Big pharma's obsession with China continues, extending beyond partnerships and licensing into foundational infrastructure. Global drugmakers and investors are backing new incubators to tap into China's expanding academic and clinical research base. Eli Lilly has launched its first biotech incubator in China, while Bayer opened a dedicated life sciences incubator in Shanghai.

## Global VCs flock to Asia

There's a rising venture activity from global VCs building their presence in Asia. In Singapore, this includes high-profile moves such as Flagship Pioneering launching a regional hub and Accelerator Life Science Partners making its first investment in the region co-leading a $16 million Series A round with ClavystBio in Automera, a startup developing novel targeted protein degradation approaches. Singapore's appeal is further reinforced by the relocation of both CBC Group and Lyfe Capital, which have moved their headquarters from China to Singapore. Novo Holdings has steadily expanded its footprint through its Asian life sciences platform, backing companies such as Hummingbird Bioscience and Esco Lifesciences.

Beyond Singapore, the region's venture scene is deepening. In Australia, Brandon Capital has launched its sixth fund, while the Merchant Biotech Fund just three years old has seen strong investor interest and performance, prompting plans to triple investments. Newer players such as Proto Axiom and Jumar Bioincubator are also emerging as local anchors for early-stage biotech. In Japan, US based AN Venture Partners has closed a $200 million debut fund, one of the largest ever first-time biotech funds in Asia. Hong Kong-based ORI Capital is planning a $350 million fund targeting Chinese healthcare startups. South Korea, too, is committing heavily to the space, with the government investing KRW 910 billion to raise additional venture funding for startups.

With a deepening pipeline of startups, growing venture capital momentum, and a new generation of incubators, Asia-Pacific's biotech ecosystem is entering a new phase. The coming years will test whether these early signals can convert into sustained global breakthroughs. BS

**Ayesha Siddiqui**

# APAC building on enough supply network for radiopharmaceuticals

The radiopharmaceutical industry is gaining ground across the Asia-Pacific (APAC) region, as countries not only step up development of novel therapies but also move to secure critical supply chains. From new partnerships to domestic isotope production, let's explore how APAC is building a foothold in this specialised sector.

Global interest in radiopharmaceuticals has surged in recent years, driven by a string of high-profile deals and rising demand for targeted therapies. Major pharmaceutical companies from Pfizer to Eli Lilly have collectively invested billions of dollars to secure a foothold in this emerging space. GE HealthCare's acquisition of Japan based Nihon Medi-Physics in March 2025 is one such example of strategic consolidation aimed at strengthening radiopharmaceutical capabilities.

In the APAC region, this momentum is mirrored by a growing number of players and initiatives focused on developing and manufacturing radiopharmaceuticals. Australia, in particular, has emerged as a stronghold, with companies like Telix Pharmaceuticals, Clarity Pharmaceuticals, AdvanCell Biosciences, and Radiopharm Theranostics leading innovation across diagnostics and therapeutics.

South Korea is stepping up its radiopharmaceutical ambitions. SK Biopharmaceuticals recently signed its first Actinium-225-based research agreement with the Korea Institute of Radiological and Medical Sciences, marking a push into targeted radiotherapy. Meanwhile, Korean Contract Development and Manufacturing Organisation (CDMOs) including DuChemBio, CellBion, and FutureChem are expanding their capabilities to tap into growing demand.

## Securing the isotopes supply chain

As the global radiopharmaceuticals market gains momentum, the APAC region is moving quickly to establish a firm foothold in this complex and increasingly strategic domain. Once considered a niche, radiopharmaceuticals are now central to precision oncology and advanced diagnostics. But their promise comes with equally intricate supply chains, where production and logistics depend on a delicate balance of radioactive isotopes, infrastructure, and regulatory synchrony.

A fundamental constraint facing radiopharmaceutical manufacturing is the short half-life and high volatility of key isotopes like Lutetium-177, Actinium-225, Molybdenum-99, and Oxygen-18. These elements must be produced in controlled settings, transported with care, and delivered rapidly for clinical use.

"Radiopharmaceuticals have very short shelf lives and must be administered shortly after manufacture, making local production essential," said ***Simone Leyden AM, Senior Director Global Public Affairs and Patient Advocacy, Telix Pharmaceuticals.***

Any interruption whether from logistical bottlenecks or international policy shifts can delay treatment availability and affect patient outcomes.

Yet building such local infrastructure comes with steep costs. "One of the key challenges is the significant capital investment required to build radiopharmaceutical manufacturing facilities, while the market prices for these drugs remain relatively low. A viable solution is for companies to outsource manufacturing to CDMOs such as FutureChem," said ***Dr Dae Yoon Chi, CEO of FutureChem.*** The company has developed advanced capabilities in producing fluorine-18-based radiopharmaceuticals for PET/CT imaging and operates Korea's largest infrastructure in the space including five GMP-compliant facilities and five cyclotrons.

That's why the APAC region is beginning to scale up its capabilities building a foundation of manufacturing facilities, isotope supply chains, and regional partnerships to enable localised and timely access.

Australia has emerged as the clear regional leader in radiopharmaceutical innovation and production. Telix Pharmaceuticals, a key player, recently acquired

# Radiopharmaceutical Blockade: Manufacturing and Access Challenges in Australia

Australia is well positioned to become a global player in radiopharmaceuticals, especially theranostics that combine diagnosis and targeted therapy. However, critical policy gaps continue to hold the sector back. A convergence of factors has created this situation, including regulatory gaps, funding shortfalls and the rapid pace of industry innovation.

**1. Fragmented Reimbursement Pathway**

● Unlike in the U.S., where agencies like the Centers for Medicare & Medicaid Services (CMS) offer clearer reimbursement protocols, Australia lacks a dedicated funding stream for radiopharmaceutical therapies. While diagnostics may be considered via the Medical Services Advisory Committee (MSAC), therapies fall outside both MSAC and the Pharmaceutical Benefits Advisory Committee (PBAC) remit, leading to funding uncertainty.

● According to a Medicine's Australia report, Australia takes around 422 days on average to get cancer treatments funded, with some therapies taking up to seven years before reimbursement approval arrives—a process three to four times slower than in major markets such as the UK, Germany or Japan.

● Medicines Australia's June 2025 policy position reiterated that there is no certainty in HTA pathways for radiopharmaceutical therapies, meaning companies face commercial ambiguity and patient access remains limited.

**2. Sovereign Manufacturing Hampered by Policy Redundancies**

● Australia currently has only one primary radiopharmaceutical manufacturing facility—ANSTO at Lucas Heights—leaving capacity stretched as demand grows.

● Radiopharmaceuticals have very short shelf lives and must be administered shortly after manufacture, making local production essential. The lack of a supportive regulatory and reimbursement framework means companies hesitate to invest in domestic infrastructure.

● Although initiatives such as the ARC Research Hub for Advanced Manufacture of Targeted Radiopharmaceuticals (AMTAR) have government backing to develop domestic manufacturing technologies, they are research focused- and not coupled with funding certainty for commercialisation.

● Under the Morrison government, the Modern Manufacturing Initiative included targeted support and risk sharing partnerships to encourage investment in advanced manufacturing, such as vaccines and radiopharmaceuticals. However no similar mechanism has been put in place for radiopharmaceutical therapies under the current Federal government.

« **Simone Leyden AM,** Senior Director Global Public Affairs and Patient Advocacy, Telix Pharmaceuticals, Australia

● The 'Made in Australia' policy and the National Reconstruction Fund (NRF) represent Australia's current approach to revitalising domestic manufacturing, but lack the scale, focus and implementation power of the Biden Administration, the US domestic manufacturing policy, the Inflation Reduction Act (IRA).The Australian NRF is structured on loans, debt or equity, with a heavy emphasis on co-investment relying on market appetite. This has stimulated moderate domestic investment so far. The IRA which delivered tax credits, grants, and subsidies to industry, triggered hundreds of billions in private-sector manufacturing investment, set off global competition (EU, Canada, Korea have responded with matching incentive schemes) and boosted reshoring of pharmaceutical and clean energy manufacturing.

**4. Compounded Therapies and Safety Loopholes**

● Medicines Australia has raised concerns regarding hospitals' use of compounded radiopharmaceuticals that have not received Therapeutic Goods Administration (TGA) approvals. While this has enabled access where commercial versions are unavailable, it also exposes patients to quality, safety, efficacy and pharmacovigilance risks and undermines commercial viability for sponsors seeking a regulated market.

● The default requirement in Australia for government-funded therapies—whether via MSAC, PBAC or PBS—is TGA approval and ARTG listing. Yet radiopharmaceutical therapies routinely fall outside this framework, further creating regulatory and commercial fragmentation.

**Outlook and Recommendations**

Recent industry reports, such as the Telix Nuclear Medicines report , MTPConnect Mines To Medicines and Medicines Australia discussion papers recommend solutions including:

1. Create a dedicated Nuclear Medicines Fund (e.g. A$500 million) to underwrite domestic manufacturing and reimbursement stability.

2. Expand sovereign manufacturing including priority placed on the immediate support for investment in high energy cyclotrons to produce current, and next generation therapeutic and diagnostic radioisotopes, that are in short supply.

3. Establish alternative payment models or separate reimbursement pathways tailored to radiopharmaceutical therapies, moving beyond the standard PBS/MSAC rules.

4. Enforce TGA approval requirements, phase out unregulated compounded therapies, and bring commercial therapies under regulatory oversight for quality and safety.

Without a clear reimbursement pathway and targeted, well-funded sovereign manufacturing stimulus, the domestic radiopharmaceutical sector may struggle to attract large-scale investment. Until these structural changes are adopted, there is a potential risk that Australian patients may have limited access to this emerging form of cancer treatment. Australians risk missing out on a transformative pillar of modern cancer treatment. BS

Canadian company ARTMS for $82 million to secure isotopes like Copper-64 and Technetium-99m for its diagnostics pipeline. ARTMS also brings capabilities in therapeutic isotopes such as Actinium-225 and Astatine-211, expanding Telix's potential reach. Meanwhile, AdvanCell is advancing a lead-212 platform focused on targeted alpha therapies. Their system is designed for daily access to 212Pb, supported by robust infrastructure and a secured isotope supply chain. Australia's AdvanCell partners with Lilly to develop new targeted alpha therapies for cancer treatment.

Underpinning this growth is the Australian Nuclear Science and Technology Organisation (ANSTO), which provides a broad portfolio of isotopes, supporting both medical and environmental applications.

Elsewhere in the region, companies are moving rapidly to forge strategic partnerships that guarantee isotope access. In January 2025, Taiwan's Primo Biotechnology signed an exclusive agreement with U.S.-based SHINE Technologies for distribution of Ilumira, a no-carrier-added Lutetium-177, across Taiwan, Japan, South Korea, and Singapore. SHINE's Cassiopeia facility, North America's largest Lu-177 production plant, is scaling operations to meet this demand, giving Primo a vital edge in regional delivery.

Japan is also taking steps to strengthen its radiopharmaceutical supply network. In April 2025, Sumitomo Corporation signed a memorandum of understanding with SHINE Technologies to explore isotope distribution across Asia, with a focus on next-generation fusion-based production. This move aligns with Japan's broader ambition to support nuclear medicine innovation and establish diversified supply routes.

China, meanwhile, is building out domestic infrastructure to meet anticipated demand. China National Nuclear Corporation (CNNC) has launched an integrated isotope programme aimed at self-sufficiency. In May 2025, CNNC's Qinshan Nuclear Power Base completed its first commercial shipment of Carbon-14 under the 'He Fu No.1' brand, signalling the start of a national platform spanning research, manufacturing, and distribution of medical isotopes. Pharma giant Novartis has also announced plans to establish its first radiopharmaceutical production site in China, with local operations expected to begin by 2026.

South Korea, too, has unveiled a national roadmap to localise radiopharmaceutical supply chains and become an exporter by 2035. The Ministry of Science and ICT plans to support local isotope production particularly of Lutetium-177 and Molybdenum-99 through a mix of government-funded clusters and public–private partnerships. The roadmap includes a new drug development centre in Seoul and an isotope manufacturing hub. The country aims to advance at least three novel radiopharmaceuticals within the next decade.

CDMOs are following suit. DuchemBio recently gained clearance to operate Korea's first Oxygen-18 recovery and purification facility, ending its dependence on imported supplies. SK Biopharm signed a supply agreement with PanTera for Actinium-225, while FutureChem partnered with Israel-based Isotopia to secure non-carrier-added Lutetium-177 for clinical use.

With coordinated development and supply strategies, the region is carving out an important role in global radiopharma push. BS

**Ayesha Siddiqui**

# Australia searches for the next CSL

Despite world-class research and a top global ranking in life sciences, Australia has long struggled to translate its scientific strengths into globally scaled biotech success. Why has commercialisation lagged and what is the government doing to change that? Let's find out.

Australian biotech is known for its cutting-edge research, robust clinical trial activity, and favourable R&D infrastructure. Over the past 35 years, the industry has transformed from a handful of companies into a thriving community. Today, Australia is home to over 1,427 biotech companies, within a broader ecosystem of 2,654 life sciences organisations, employing more than 260,000 people. Of these, 196 are listed on the ASX (Australian Stock Exchange), contributing to a combined market capitalisation of over AUD 242 billion, while more than 1,231 companies are creating value through innovation and partnerships (according to AusBiotech).

More than 80 per cent of these companies are small and medium enterprises most at very early stages of development, pre-revenue, and pre-market working on therapeutics, diagnostics, medical devices, vaccines, and enabling technologies.

While CSL remains synonymous with Australian biotech success, a new wave of companies is beginning to make global waves. ResMed has emerged as a global respiratory device leader. Radiopharmaceutical firm Telix is making major strides in nuclear medicine. Meanwhile, clinical-stage companies such as Opthea, Immutep, and Dimerix are progressing into phase 3 trials.

Despite these successes, the country has yet to produce a large homegrown pharma or biotech company on the scale of Merck, Pfizer, or Takeda. Translation and commercialisation remain persistent challenges.

"While Australia punches above its weight in life science discoveries, translation and commercialisation is our Achilles' heel. And now there's President Trump's 'America First' agenda and much mooted pharma-specific tariffs," said Stuart Dignam, CEO of not-for-profit MTPConnect, Australia's life science innovation accelerator.

In an earlier interview with BioSpetrum, Anthony Liveris, CEO of Proto Axiom, echoed the same sentiment, "Australia has long been a global leader in research, yet our biotech sector has not lived up to its full potential. Government-subsidised programmes have often crowded out private investment, while market power dynamics have led to rent-seeking behaviours. Moreover, exclusivity clauses often lack transparency, stifling innovation and delaying the path from discovery to patient care. As a result, groundbreaking ideas are not reaching the market, and our collective promise to advance public health remains unfulfilled. Accordingly, existing investors in Australia have struggled to make material gains in the sector. Proto Axiom has structured itself not to compete, but rather to fill a critical gap in biotech commercialisation. We are a first-in-country model, building companies to grow the pipeline of investments for follow-on funds."

This challenge is well documented. A report by Pulse Economics points out that investment alone doesn't guarantee outcomes. While Australia ranks 9th globally for life sciences research and contributes approximately 3 per cent of the world's research output, it captures only 1–2 per cent of the global life sciences market. The WIPO Innovation Index places Australia 18th for innovation inputs,

## Top Australian Biotech Companies

1. CSL
2. Telix Pharma
3. Immuron Limited
4. PolyNovo Limited
5. OncoSil Limited
6. PYC Therapeutics
7. Clarity Pharmaceuticals
8. Clinuvel Pharmaceuticals
9. Immutep
10. Alterity Therapeutics

(Source: StockViz)

# The Tariff Turmoil Upside - More International Partnerships

**Stuart Dignam,**
CEO,
MTPConnect,
Australia

If there's anything good to come from the tariff turmoil, it is that countries have rediscovered the importance of collaboration, international partnerships and market diversification to drive innovation. It's a point I heard repeatedly at the BIO Asia-Taiwan conference in Taipei last month (July 23 - 27, 2025). In the upended global trade order, where foe is friend and everyone else gets tariffed, it's hardly surprising we're looking to a broader suite of markets to provide some resilience and certainty to our life science innovation endeavours.

That said, the United States, with its 'Liberation Day' tariff regime that is at the heart of the turmoil, remains by far the biggest market in the world for both therapeutics and medical devices. The prospect of arbitrary tariffs being imposed on exports, and a pharmaceuticals-specific tariff of up to 200 per cent, have been mooted for some time with a clear objective of encouraging companies to move production to the US.

"When they hear that (about tariffs), they will leave China, they will leave other places because… most of their product is sold here and they're going to be opening up their plants all over the place," is how President Trump puts it.

Market size and tariff-driven economic forces work to incentivise Australian biotech innovators to move their operations to the US to better access that market. The same forces are compelling international firms like Roche, Novartis and AstraZeneca to commit billions in US-based manufacturing, and US companies like Eli Lily to re-shore manufacturing from other parts of the world.

Even Australia's larger biotech companies are touting the depth of their US-based manufacturing as evidence of their ability to ride out the tariff turmoil.

In this environment of uncertainty and perverse incentives, strategies for backing life science innovation and supporting startups and SMEs through the difficult early years are more critical than ever.

Yes, access to capital remains a challenge and there are some powerful options that could turbocharge our homegrown innovators, like investment mandates for superannuation funds.

Their $4 trillion in assets under management could be transformational for the scaling-up of early-stage biotech firms. We're already looking at thresholds and taxation rates on super earnings, why not reforms to back one of Australia's most significant job creating, knowledge intensive sectors.

Beyond that, building new international partnerships and opening new markets are critical.

but just 30th for outputs. Among OECD countries, Australia ranks 21st on the Global Innovation Index, despite being the 11th largest economy.

The country is now actively seeking to shift its focus from strong foundational science to a more commercially viable, globally competitive life sciences sector.

## Road to Commercialisation

Australia is aiming to close the long-standing gap between world-class research and commercial impact. In 2022, AusBiotech launched the Biotechnology Blueprint: A Decadal Strategy for the Australian Biotechnology Industry—the first united vision in two decades to help build globally competitive companies, commercialise more technologies, and deliver national returns in jobs, investment, and healthcare access.

The Blueprint lays out how to strengthen the environment for innovation from research infrastructure and clinical partnerships to a more engaged healthcare system that helps translate discoveries into real-world benefit.

In August 2024, Pfizer also proposed a 10-point plan outlining how the life sciences sector could become a driver of both national health and economic growth. It called for the creation of a clear government-led vision, citing

And while many will favour a pivot to Europe, opportunities in the Asia Pacific region, Australia's neck of the woods, should not be overlooked.

At BIO Asia-Taiwan, delegates from the US, Canada, Japan, Europe and a large contingent of Australians heard consistent messages around global collaboration, resilient supply chains and the opportunity for the APAC region to drive the next wave of biotech innovation.

It is a wave that Australia needs to be a part of.

China, Japan and South Korea have joined forces on security and export matters, with a focus on improving free trade in the region. At a recent meeting in Seoul, the three countries agreed to create "a predictable trade and investment environment."

These are Australia's top three export markets and together represent around 12 per cent of the global pharma market. They're also pretty accomplished at taking research and turning it into products at global scale. China in particular has made biotechnology a national priority over the last decade. Its 'Made in China 2025' plan includes a focus on biotech and in a few short years, precincts like Suzhou BioBAY and Zhangjiang Hi-Tech Park have emerged as powerhouse global clusters.

It is a point acknowledged in a new report from the US National Security Commission on Emerging Biotechnology which warns that China is beating the US in biotech advances. Prime Minister Anthony Albanese's six-day visit to China from July 12 sent a powerful message to innovators, investors and the business community that increasing engagement between two countries is to be encouraged.

While Australia punches above its weight in life science discoveries, translation and commercialisation is our Achilles heel. And now there's President Trump's 'America First' agenda and much mooted pharma-specific tariffs.


Matching Australia's capabilities in research, early-stage drug discovery, IP creation and clinical trials with China's power in scaling and production makes all the sense in the world. Just as it does with Korea and Japan, India and Singapore. A sober re-assessment of Australia's place in the world and an urgent re-imagining of the policies, strategies and frameworks needed to nurture a sustainable, home-grown life science sector are in order.

For MTPConnect, our partnership with the Korea Health Industry Development Institute is driving closer collaboration between our two countries, as is our work with Taiwan's Biotechnology and Pharmaceutical Industries Promotion Office in Taipei. Across the Pacific, our relationships with Biocom California and Medical Alley are much valued and creating new commercial and market opportunities for Australian life science startups and SMEs.

Australia has the entrepreneurs, clinicians and innovators ready and willing to meet the offshoring challenge. And with the right incentives and durable international partnerships, we can stop life science innovations leaving our shores too quickly, only to enrich the economies of other countries. BS

the UK's 2021 life sciences strategy as a model. Its recommendations span five themes, including prevention, equitable patient access, accelerated availability of new medicines and vaccines, increased investment appeal, and achieving a net-zero health system.

In parallel, MTPConnect (along with AusBiotech) echoed these calls, urging a more coordinated national approach. Its proposal includes establishing a National Life Sciences Strategy and Council, recognising the sector as a priority under the Future Made in Australia Act, and investing in data infrastructure to guide decision-making and strengthen capabilities.

To complement these structural efforts, in 2025, AusBiotech, Australia's apex body for the life sciences sector, and the Australian Government's Trade and Investment Commission (Austrade) partnered to launch a new National TradeStart Adviser role. Embedded within AusBiotech, the position is designed to support life sciences companies in scaling globally and accessing international markets more effectively.

Australia already has a strong foundation. Now, with industry and government coming together, the push from discovery to delivery is gaining real momentum. BS

**Ayesha Siddiqui**

# "HSA is adopting a forward-looking 5P Strategy to tackle challenges"

« **Adjunct Professor (Dr) Raymond Chua,** CEO, Health Sciences Authority (HSA), Singapore

Adjunct Professor (Dr) Raymond Chua, who stepped into his role as CEO of Singapore's Health Sciences Authority (HSA) in December 2024, outlines the agency's current priorities in positioning Singapore as a regional hub for biotech and medtech innovation. As one of the world's leading regulatory bodies, HSA is balancing rigorous safety oversight with the need to support emerging technologies like cell, tissue and gene therapy products (CTGTP) and AI-driven medical tools. He also discusses HSA's collaboration with international regulators to align standards and enable faster, cross-border access to new health technologies, and how the agency is preparing to meet the biggest regulatory challenges of the next five years. ***Edited excerpts:***

---

### Presently, what are HSA's key priorities that align with positioning Singapore as a regional hub for biotech and medtech innovation?

We see ourselves as more than just a regulator. We are an enabler of innovation, a partner in progress. Science and technology have always been central to Singapore's growth story, and our role is to make sure that regulatory frameworks keep pace with the exciting developments in biotech and medtech.

In this fast-moving era — marked by breakthroughs in Artificial Intelligence, regenerative therapies, and digital health — we're focused on keeping our regulatory system robust, efficient, and yet agile. Our key priority is to ensure that Singapore remains not just a safe harbour for health products, but a launchpad for innovation.

We are working closely with our economic agencies, industry partners and healthcare institutions to build an innovative access framework. This will allow for earlier, deeper engagement with the industry and healthcare institutions, from the clinical trial stage right through to market entry. The objective is clear: accelerate access to promising health products and new technologies while upholding high standards of safety and quality.

We are also investing in reviewing new regulatory frameworks to support emerging areas like Software as a Medical Device (SaMD) and AI-powered solutions. To make it easier for companies to navigate our system, we have implemented the Priority Review Scheme and Pre-market Consultation Scheme. These initiatives foster industry-regulator engagement to create a supportive ecosystem for innovation. In 2018, we established HSA's Innovation Office to provide regulatory and scientific guidance to researchers and startups developing novel therapies and medical technologies. The supported products span cutting-edge regenerative cell and gene therapies, precision medicines, and digital health technologies such as AI medical devices (AI-MDs).

These efforts have yielded numerous positive outcomes, with companies reporting greater regulatory certainty and more efficient development pathways. This success will help position Singapore as a vibrant, trusted hub for biotech and medtech innovation, where companies can develop and launch innovative health products with confidence.

### How does HSA balance rigorous safety oversight with the need to support emerging technologies like CTGTP or digital health tools?

Balancing safety and innovation is at the heart of what we do. Our approach is always grounded

in scientific principles and risk-based assessments. While HSA recognises the transformative potential of emerging technologies, we are also mindful of the unique challenges they bring, such as complex manufacturing, long-term safety, novel mechanisms of action, and software-specific risks like cybersecurity and data integrity.

To address these, HSA has implemented targeted regulatory frameworks. For CTGTP, we introduced a fit-for-purpose, risk-based framework under the Health Products Act to facilitate innovation while ensuring safety, efficacy, and quality. For digital AI tools, we also worked with the Ministry of Health to develop comprehensive guidelines that cover the entire product lifecycle, from development to post-market monitoring to cybersecurity.

I am glad to say Singapore is leading globally with our Cybersecurity Labelling Scheme for Medical Devices. This innovative initiative was rolled out at the end of 2024 in collaboration with the Cyber Security Agency, the Ministry of Health and Synapxe, through early industry engagement, where medical device manufacturers were invited to test their devices and provide valuable feedback on the scheme's implementation through a sandbox. This scheme aims to enhance cybersecurity across the healthcare sector and protect patients' data, as medical devices become increasingly interconnected. The Innovation Office is also available to provide early guidance and consultation services to developers and clinicians for their entire product development process. Whether you are pioneering a novel biologic, gene therapy product, digital or AI tool, we are here to support your innovation journey while ensuring it reaches patients safely.

To ensure our regulations evolve alongside scientific advancements, HSA has also partnered with our national scientific research institutions to conduct regulatory science research in emerging technologies, particularly in areas such as generative AI-enabled medical devices and mRNA therapeutics.

### What's your views on the regulation of AI-MDs and SaMD?

AI in healthcare presents both opportunities and regulatory challenges. That is why since 2019, we have had a dedicated team looking into how to regulate AI-MDs and SaMD in a way that supports innovation while safeguarding patient safety.

We have developed fit-for-purpose evaluation criteria and requirements, with a focus on areas like algorithm and clinical performance validation, explainability, cybersecurity, as well as their unique characteristics, including the need for continuous learning and adaptation. We also collaborate closely with international regulators and forums, such as the International Medical Devices Regulators Forum (IMDRF), to align our approaches and reduce fragmentation in global regulation.

*"At HSA, we don't just regulate innovation — we enable it. Our mission is to build trust, reduce friction, and unlock opportunities for safe, meaningful health products and technologies. We invite innovators to walk this journey with us — early, openly, and confidently."*

We have registered approximately 160 AI-MDs, including SaMD. By the end of this year, we expect that around 180 AI-MDs and SaMD will be registered with HSA. This growth reflects Singapore's rising role as a regional leader in digital health and solidifies our position as a biomedical sciences hub in the region, and we are committed to enabling this momentum. The integration of AI and machine learning will revolutionise patient care, allowing for more personalised and responsive treatment.

As AI becomes more embedded in healthcare delivery and clinical decision-making, our frameworks will continue to evolve to ensure trust, transparency, and safe use.

### Could you share some insights on HSA's collaboration with international regulators that help align standards and enable faster, cross-border access to new health technologies?

No regulator can work in isolation, especially in today's interconnected world. HSA is a strong believer in global cooperation to build strong partnerships for mutually beneficial outcomes, whether it's through the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) or IMDRF or through our multiple strategic partnerships with trusted regulatory authorities.

We have also been an active participant in international collaborative platforms like Access Consortium and Project Orbis, which allow us to share workload, exchange insights, and speed up access to important treatments, including oncology


*Singapore offers a unique combination of scientific excellence, clear policy support, and regulatory confidence. If you are building something that can transform care, we are here to help you make it real—safely, efficiently, and meaningfully.*

drugs. As a World Health Organization (WHO)-Listed Authority for medicines and vaccines and a WHO Stringent Regulatory Authority for in vitro diagnostic medical devices, our regulatory assessments and decisions are trusted globally, and that trust has a real impact. This should give confidence to our pharmaceutical and medical device companies to register their products in Singapore. In some cases, countries may rely on and leverage our evaluations to make their own informed regulatory decisions, supporting global health access and equity of essential health products.

These partnerships do not just enhance access—they also help us learn, benchmark, and stay ahead of emerging trends. At the end of the day, good regulation travels across borders, just like innovation.

### Which are some of the key regulatory challenges that you're anticipating in the next 5 years, and how would you tackle them?

We're entering a period of regulatory transformation — fueled by demographic shifts, evolving care models and manpower changes and digital disruption. Some of the biggest challenges ahead include:

- **Complexity of New Therapies:** The rise of personalised and regenerative treatments is blurring the lines between therapeutics and procedures.
- **Digital Disruption:** AI, remote diagnostics, and digital twins will change how healthcare is delivered, and regulators need to keep pace, as digital products also become closely intertwined with the delivery of healthcare services.
- **Cybersecurity:** As more devices get connected, cybersecurity is no longer optional—it is foundational.
- **Workforce Pressures:** An ageing population and tight talent markets mean we need to do more with less and do it faster.

To tackle these challenges, HSA is adopting a forward-looking 5P Strategy:

**1. Products:** Streamlining processes and transforming our frameworks to match the complexity of new technologies and products, and further strengthen our integration with the national economic and healthcare ecosystem.

**2. Platforms:** Embracing digitalisation and automation to increase efficiency.

**3. People:** Equipping our team with the skills, agility and mindset needed for tomorrow's healthcare.

**4. Partnerships:** Deepening our regional and global collaborations to share knowledge and accelerate access.

**5. Profiling:** Strengthening public and stakeholder trust through transparent communication and a strong regulatory voice.

This is not just about adapting to change—it is about shaping it.

### If you could send one message to biotech innovators looking to enter the Singapore market, what would it be?

Engage early. Engage often. Emerge together.

Innovation does not happen in a vacuum, and neither does regulation. At HSA, we believe in walking the journey with you. Our Innovation Office is here to help you navigate the path—from bench to bedside—especially if you're working on novel products and technologies.

Singapore offers a unique combination of scientific excellence, clear policy support, and regulatory confidence. If you are building something that can transform care, we are here to help you make it real—safely, efficiently, and meaningfully.

So do not wait until your product is ready for approval. Reach out early. Let us know what are the emerging technologies that you are developing so that we can plan our resourcing and capabilities. Let us make Singapore a trusted and shining biomedical hub across the world together. BS

**Ayesha Siddiqui**

# “ASEAN has become an imtportant fulcrum in the global pharmaceutical production supply chain”

Asia-based BioDlink, a full-service Contract Development and Manufacturing Organisation (CDMO) specialising in biologics and antibody-drug conjugates (ADCs), has built a strong track record over the past decade, offering integrated solutions from early-stage R&D to commercial manufacturing. With globally compliant quality systems and high-potency Occupational Exposure Bands (OEB)-5 facilities, the company has supported over 100 projects and passed nearly as many GMP audits, including a zero-defect European Union, Qualified Person (QP) inspection. Recently, BioDlink strengthened its global compliance credentials with GMP certifications from Argentina and Brazil. Dr Jun Liu, CEO and Executive Director, BioDlink shares insights into the company’s capacity expansion plans, the role of continuous manufacturing in its long-term strategy, and key trends shaping the CDMO landscape, etc. ***Edited excerpts:***

« **Dr Jun Liu,** CEO and Executive Director, BioDlink

## What are your plans for capacity expansion in biologics and ADC manufacturing?

We are already among the largest biologics CDMO providers within China, and our capacity infrastructure reflects this leadership. Currently, we operate with a combined bioreactor capacity of 20,000 litres for antibody drug substance, with two independent production centres for antibody stock solutions and another three for ADCs, delivering more than 100 clinical projects worldwide, including European and the U.S., in the past three years.

We also have four complete commercial drug production lines — two for antibody-based manufacturing and another two for ADCs. These production lines are outfitted with international world-class equipment, fully validated for antibodies and ADC drug substance and drug product production, compliant with U.S., EU and China standards. This strong foundation gives us the flexibility to seamlessly transition projects from development to full-scale commercialisation. We run one of the most advanced ADC production lines in the region, including a 40-square-meter liquefaction unit — a critical and often capacity-limiting step in ADC manufacturing, with up to 150 batches per year. Looking ahead, we will further enhance our production capacity to cater to our clients’ diverse and customised requirements. As of May 2025, we're actively supporting multiple pre-FDA Biologics License Application (BLA) projects — producing clinical material, executing Process Performance Qualification (PPQ) runs, and preparing for regulatory inspections.

## How do you leverage presence in Asia-Pacific to differentiate from global CDMO players?

Our roots in Asia-Pacific afford us a distinct advantage to meet the diverse needs of our clients: proximity to the world’s fastest-growing pharmaceutical markets and a nuanced understanding of regional regulatory landscapes. We leverage this by offering compliance with global quality standards and flexibly allocating resources, offering a combination of antibody and XDC CDMO platforms to realise faster delivery and cost effectiveness. Moreover, our bilingual, cross-cultural scientific teams enhance collaboration and reduce communication friction for our multinational clients. It’s a combination of speed, compliance, & cultural competence that sets us apart.

## How do emerging technologies like continuous manufacturing fit into your growth strategy?

We see continuous technological innovation as a core pillar of our strategic growth, focusing on building distinctive, customiable technology platforms designed to address specific customer needs. By advancing and personalising these cutting-edge solutions, we strengthen our competitive edge and enhance our ability to support a broad spectrum

*As the APAC pharmaceutical market is diverse, biopharma brands adopt a flexible strategy in the region while minimising some of the problems caused by cultural differences and geopolitical factors. In addition, these brands seek to increase efficiency, enhance speed to market, and achieve cost efficiency. Therefore, we see an increase in demand for one-stop CDMO services with segmented production capabilities. The challenges with this model are to control the quality risks, industrial safety, and other factors.*

of customer projects with flexible, high-impact technical capabilities. The continuous manufacturing approach we employ—Perfusion Fed-batch—is not just an incremental process improvement; it's a paradigm shift. This technology significantly lowers manufacturing costs while enhancing efficiency. We've integrated Perfusion Fed-batch into our large-scale commercial production. Meanwhile, BioDlink continues to advance its technology platform, accelerating innovation cycles to more effectively meet the evolving and diverse needs of our clients. We incorporated the GL-DisacLink technology, a competitive solution for next-generation XDC (xenobiotic drug conjugate) bioconjugation. The platform stands out with its precision and efficiency, enabling a single-enzyme, one-step reaction with rapid turnaround and high completion rate.

## Which key practices have enabled BioDlink's regulatory success across multiple markets?

Our regulatory strategy is built on proactive alignment with global standards. We engage early and often with regulatory agencies, ensuring our data packages meet or exceed expectations. Internally, we've established robust quality systems and a culture of continuous improvement. Transparency, traceability, and technical rigour are the cornerstones of our compliance model. With ISO 27001 certification in Information Security Management Systems, we also provide excellent customer information security. Quality is our core, with extensive global compliance experience. Our facilities and processes have consistently met the rigorous standards of the National Medical Products Administration (NMPA), and we've successfully passed EU QP inspections four times in the past two years— a rare feat that underscores our operational excellence. Recently, we passed our first-ever on-site PIC/S (Pharmaceutical Inspection Co-operation Scheme) audit conducted by Brazil's National Health Surveillance Agency (ANVISA). Our quality system is now GMP-compliant in the six key markets of Brazil, Indonesia, Egypt, Colombia, Argentina and Nigeria.

## Could you share BioDlink's strategic goals for the next 5–10 years?

Looking ahead, our vision is to establish BioDlink as a global, top-tier CDMO specialising in biologics, including bispecific antibodies, XDCs, and others. We're actively expanding our footprint in global markets with local partners, strengthening international operational capabilities while accelerating our adoption of digital manufacturing technologies and AI-driven process optimisation to elevate service quality and efficiency. We see ourselves not merely as a service provider, but as a trusted partner that grows alongside our clients. Long-term strategic partnership is the key to further growth, and we are actively exploring a milestone-based model beyond traditional fee-for-service to establish a longer-term strategic partnership to complement and empower our clients, such as leading global pharmaceutical companies and biotech companies with strong innovative capabilities.

## What key trends are you seeing in the CDMO space, particularly in Asia-Pacific?

Asia-Pacific, especially ASEAN, has become an important fulcrum in the global pharmaceutical production supply chain. As the APAC pharmaceutical market is diverse, biopharma brands adopt a flexible strategy in the region while minimising some of the problems caused by cultural differences and geopolitical factors. In addition, these brands seek to increase efficiency, enhance speed to market, and achieve cost efficiency. Therefore, we see an increase in demand for one-stop CDMO services with segmented production capabilities. The challenges with this model are to control the quality risks, industrial safety, and other factors. At BioDlink, we address these pain points with consistent quality and possess a strong track record with a one-stop, one-site production platform. By providing biopharma brands with a seamless and traceable solution, from cell line development to process optimisation to commercial production, we accelerate speed-to-market while better managing the production value chain and implementing quality management more smoothly. BS

**Ayesha Siddiqui**

# “We plan to enter India, Japan, Thailand, and Vietnam to improve the safety of researchers”

As biotech research laboratories, in both industry and academic settings, engage in increasingly complex projects worldwide, ensuring the safety of personnel, equipment, and the surrounding environment becomes paramount. Beyond the immediate health impacts, accidents can disrupt the scientific process, leading to data loss, damage to expensive equipment, and significant delays in research progress. Focusing on these critical aspects, South Korea-based startup Connietec has developed innovative solutions that were launched during the recently held ICPI Week 2025 event in South Korea. BioSpectrum Asia spoke with Aden (Seong-Ho) Do, Chief Executive Officer of Connietec, to find out more about the startup’s new product line addressing lab safety. ***Edited excerpts:***

« **Aden (Seong-Ho) Do,** Chief Executive Officer, Connietec, South Korea

## Which are the new products launched by Connietec at the ICPI Week 2025?

ConnieTOP, which was released in ICPI Week 2025, is a safety cap system that prevents or purifies fume volatilisation of organic solvents and waste liquid when operating instrument by connecting with analysis instrument such as liquid chromatography that uses a lot of organic solvents such as methanol and acetonitrile, so that it can protect the environment of the laboratory and the health of the researchers and achieve reproducible experimental results.

First, the solvent bottle safety cap (CT-SSC, Solvent Safety Cap) uses a filter designed to prevent the solvent from volatilising out of the solvent bottle when the solvent flows into the analysis instrument, and this filter (CT-CVF12M, Check Valve for 12 Months) applies a PE-based Frit that is different from other companies' membrane filter types, increasing the recommended usage period to about one year compared to six months of other companies' products, which can be managed at a lower maintenance cost.

In addition, CT-SSC is designed to allow one to three solvent lines of various OD sizes to be inserted freely in one cap, and in particular, the body part and screw fitting material of the cap are unified with PTFE materials to seal well. The newly designed CT-SSC grip introduces a new design that increases the grip and stability of existing products, and a safety cap that reflects the colour accordingly. Liquid chromatography is designed to increase the grip when users frequently change the solvent of the solvent bottle and open and close the safety cap, reducing the burden on fingers and wrists, and slightly increasing the weight and volume so that they feel secure in their grasp.

The CT-WSC (Waste Safety Cap), a safety cap for waste liquid containers, is designed to effectively connect waste liquid lines from various analysis instrument brands and is equipped with a filter (CT-CF6M, Charcoal Filter for 6 Months) filled with granular-type small charcoal particles to catch fumes with a large surface area and emit only purified gas.

## What are the key challenges being addressed through your new products?

I believe that laboratory environment and safety are the most important things in a laboratory these days. Although the structure of the laboratory varies widely, if the experimenter is exposed to organic solvents that are mainly used in the laboratory, the fumes are always inhaled, so they should not neglect even a small thing because it can interfere with their health and future work.

I think it is our task to inform the researchers

and experimenters that they are not aware of the harmful fumes generated by touching the organic solvents used in the analysis instrument and preventing them using ConnieTOP safety cap system although they are only paying attention to fatal factors such as gas cylinders, strong organic solvents, or acid types, which are the most noticeable risk factors.

**How do you plan to strengthen your presence in the Korean life sciences market?**

Whenever I suggest and recommend products to researchers, I have emphasised their differences from other companies' products. So, as I explained about our products at the beginning, our products were planned and manufactured based on such differentiation. We plan to strengthen our position by systematically documenting whether the product can improve the environment of the laboratory and protect the safety of the researcher in the market by differentiating it from products that have only form, as low-cost materials.

**Are you planning to develop more products this year or next?**

Yes, we have plans to improve the shape of existing products and further develop them. We need to improve the filter size of the solvent bottle safety cap (CT-SSCM) for MPLC, which was released for the first time in the world last year, so we plan to increase the overall size of the check valve and filter within this year and change some designs of the filter for waste liquid (CT-CF6M). In addition, a safety cap suitable for other large-capacity square cans has been in design since last year, and we plan to release it as soon as the design is completed.

**What are your views on strengthening academia-industry partnerships to enhance life sciences innovation in Korea and other Asian countries?**

I think academia and industry are inseparable. Academia will need additional instruments, and instruments are necessary to focus on research and development. But if such parts are not commercialised, researchers will not be able to make or obtain them one by one, so there will be restrictions on research. Life sciences will develop further only when the industry moves with a partnership to research and develop instruments and instruments that meet the needs of researchers.

I think it has a much more ripple effect than moving independently. In particular, overseas markets have limitations in terms of distance in business, so it would be effective to attend conferences and exhibitions related to academia and industry to introduce products.

Currently, Korea is participating in the largest Korea Lab in the industry every year, participating in the analysis science conference this year, and in the second half of the year, we will introduce our products by participating in two overseas exhibitions and the government-organised international research and industry convention.

**Do you have any major expectations from the Korean government to support the growth of life sciences-based startups?**

Korea supports startups through various life science R&D support projects, but it is not easy to receive support due to high competition and strict conditions compared to the opportunities. It is worth challenging whether it is a prerequisite for a startup. There is support for research projects by year, and the government, which was cut by the previous government, expects additional budgets to be supplemented, and systematic government policies and support are expected.

**Are you planning to make new hires shortly? Are you planning to enter new markets besides Korea, within Asia or others?**

Yes. Since we are about to start overseas sales in earnest, we hope that professional and competent employees will join us in hiring employees to support product promotion through social network service and participation in overseas exhibitions. We are planning to enter Asia, such as India, Japan, Thailand, and Vietnam.

**What new opportunities and challenges do you foresee by launching your products in the Indian market?**

India is the world's largest pharmaceutical supplier, and we expect that there will be a lot of demand for our products because there are many factories of each pharmaceutical company. I think they can accept ConnieTOP well and contribute to improving the laboratory environment and the safety of the researchers. However, I think it is a challenge to overcome the price priority with technical product performance because the prices of Indian and Chinese products are so low. BS

**Dr Manbeena Chawla**
manbeena.chawla@mmactiv.com

# "UK-India Free Trade Agreement helps deepen Genomics Collaboration"

Oxford Nanopore Technologies, a global company with its headquarters in the United Kingdom, has signed Letters of Intent with India's Centre for DNA Fingerprinting and Diagnostics (CDFD), and the National Institute of Biomedical Genomics (NIBMG), to develop two new genomic Centres of Excellence Institutes. Their goal is to support skills development, which will position India as a regional leader in advanced genomics, R&D in rare diseases, newborn screening, oral cancer, antimicrobial resistance (AMR), and multi-omics. The company brought its 'What Your Missing Matters' (WYMM) tour to Bangalore in India for the first time, in April, with an intent to further strengthen collaborations with researchers, clinicians, and public health bodies in the region. BioSpectrum Spoke to Dr Gordon Sanghera, Co-founder and Chief Executive Officer, Oxford Nanopore Technologies, UK and Tonya McSherry Vice President of Commercial, EMEAI about WYMM, their presence in India and APAC region, UK-India Free Trade Agreement and much more. ***Edited excerpts;***

« **Dr Gordon Sanghera,** Co-founder and Chief Executive Officer, Oxford Nanopore Technologies, the UK

## What is the purpose and goal of organising WYMM for the first time in India?

**Tonya McSherry:** We are committed to deepening our presence in India, and hosting the first WYMM tour in the country is a key part of this for us. It provided a unique opportunity to bring together our experts and leading local scientists to engage in meaningful discussions on a range of topics, from clinical applications to public health strategy. Some personal highlights included conversations around clinical genetics, pioneering microbiome-based wellness initiatives, implementing full-length sequencing in acute healthcare settings, and strengthening the blueprint for future public health resilience.

India faces unique and complex challenges in areas like infectious and rare diseases, and we are committed to work alongside local teams to address these. This is why it was especially great to see deep interest in projects such as building a national respiratory metagenomic network for clinical care, enhancing bio surveillance, and understanding structural variants within Indian populations. Over the course of the tour, hundreds of scientists from across the country joined us and took part in hands-on workshops on full length- sequencing alongside the discussions, demonstrating there is a desire to build sequencing capacity and expertise. Based on the overwhelming and brilliant response we received to the Bangalore Tour, we are looking forward to expanding our team and growing our partnerships across India over the coming months and years.

## How are you building your presence in India and APAC region?

**Tonya McSherry:** Over the past eight years, we have built strong relationships with key partners across India to support a wide range of sequencing projects, and we have worked with teams across from Kerala and Kamataka, to Delhi, to West Bengal. These partnerships support a multitude of programmes including infectious disease, drug resistance in tuberculosis, and plasmid sequencing as well as deep research, discovery, and pioneering technology, which are driving advancements in healthy aging for India.

We have long-standing research projects and collaborations with organisations including the Centre for Cellular & Molecular Biology and Institute of Genomics & Integrative Biology, as well as the Asian Institute of Gastroenterology in Hyderabad, which has implemented an Oxford Nanopore based solution for a gut microbiome test. This is Asia's largest Institute in this field, and one of only seventeen hospitals in the world designated as a Centre of Excellence for Gastroenterology. These partnerships - alongside our more recently established ones - reflect the importance we place on collaboration and expanding

our investment within India.

Beyond individual research projects, we believe our nanopore sequencing technologies are well-positioned to support broader national genomic initiatives, including the Genome India Project, the Programme on Paediatric Rare Genetic Disorders, the Infectious Disease Biology Programme and, the National One Health Mission recently launched by the Office of the Principal Scientific Advisor.

And we are building the infrastructure to support this growth. We recently established our new office in Bangalore, and we are increasing the number of channel partners we work with in India, further strengthening our long-term commitment.

More broadly our activity in APAC is growing too. We are expanding our presence across the APAC region, with a commercial team in Japan and a growing footprint in Singapore. We have expanded our laboratory facilities in the latter, to support training, knowledge transfer, and upskilling of local technical staff, which have received further support through collaborations with Singapore's National Precision Medicine programme and a new distribution partnership with UPS Healthcare. Together, the aim is to create one of the world's most extensive and inclusive reference genome datasets.

## Why is the recent UK-India Free Trade Agreement (FTA) so exciting?

**Dr Gordon Sanghera:** The UK-India Free Trade Agreement represents far more than a trade policy. It's a catalyst for action and collaboration. At Oxford Nanopore, we've always believed that innovation should be borderless and accessible to all. This agreement provides the confidence and framework for companies like ours to invest, scale, and co-create with India's scientific and healthcare ecosystems in transformative ways, that weren't possible before. With its depth of scientific talent and global ambition, we believe that India is uniquely positioned to lead the next phase of genomics innovation.

As mentioned already we're working alongside leading Indian government research institutions to support key national health initiatives on newborn screening to antimicrobial resistance. However, the FTA enables us to move beyond technology deployment, toward building shared capability, research excellence, and real-world impact. Once in place the Agreement will allow UK based companies to competitively bid for government procurement contracts, which is a significant opportunity for our respective companies. For example, a specific area the Free Trade Agreement discusses is AMR and Oxford Nanopore has a lot of expertise in this area that could benefit Indian citizens and industries. FTA also helps deepen UK-India Genomics Collaboration.

Beyond the FTA, we also have significant expertise we could share with the India Government and healthcare system around infectious diseases, and pandemic prevention, preparedness, and response, a key area outlined in the India/UK Health and Life Sciences MOU for co-operation, and the India/UK Technology Security Initiative.

So, as genomics shifts from centralised labs to portable, real-time sequencing, India's scale and momentum make it a critical partner for us. This is a two-way collaboration rooted in shared goals and trust, and we're proud to help turn bold ideas into real outcomes.

## Where do you see the biggest opportunities in sequencing in the near future?

**Dr Gordon Sanghera:** I'm particularly excited about the potential of proteomics. Over the past two decades, we've transformed our understanding of biology through DNA and RNA sequencing, but proteins remain one of the most complex and underexplored layers of biology. They are the true workhorses of the cell and central to disease pathways, diagnostics, and therapeutic development. We believe the ability to read proteins directly, in their native form, could unlock entirely new dimensions in personalised medicine and biological research.

At our 2025 London Calling conference, we announced our first steps into this space, focusing on protein biomarker detection and barcoded protein sensing using our core nanopore technology. These approaches aim to deliver simple, scalable tools for early disease detection and diagnostics. Looking further ahead, our vision is to enable full-length, de novo protein sequencing, allowing researchers and clinicians to identify unknown proteins, post-translational modifications, and structural variations in real time. Just as we've done with DNA and RNA, our goal is to make protein analysis accessible, fast, and decentralised. It's a bold ambition, but one we believe will fundamentally shift how we understand and treat disease.

**Narayan Kulkarni**
narayan.kulkarni@mmactiv.com

# The Future Formula: What's Driving Recruitment Innovation in Pharma

*The pharmaceutical recruitment process is becoming more organised, strategic, and data-driven, adapting to changing demands and needs.*

« **Roop Kaistha,** Regional Managing Director-APAC, AMS, Singapore

The pharmaceutical and life sciences industry has been undergoing a transformation driven by rapid technological change, demographic shifts, regulatory complexity, and globalisation over the last five years. This shift is especially visible in areas like data science, clinical development, regulatory affairs and digital trials, where the pace of progress demands both depth and flexibility. As organisations respond to faster product cycles and increasingly specialised needs, pharma companies are not behind. Capability-based hiring is becoming central to how they build and manage their teams.

To support this, many companies are deploying focused hiring teams for specific functions such as clinical operations, safety monitoring, and product launch support. These teams, often structured through modular partnerships, allow organisations to access niche talent and expertise at speed without having the need to have a long-term Talent acquisition team. This approach has helped reduce time to hire by 33 per cent and cost to hire by 36 per cent, which is especially valuable when hiring delays risk impacting regulatory timelines or market readiness.

## RPOs and Embedded Talent Partners Are Enabling Agility

Recruitment Process Outsourcing (RPO) firms and embedded talent partners are playing a growing role in helping pharma companies stay responsive to shifting demands. By acting as integrated extensions of internal HR teams, these partners are improving hiring speed, ensuring consistency in experience and enabling access to global candidate pools. Their involvement is especially effective in supporting high-growth or expansion markets, where internal teams may not have the capacity or reach.

## New Talent Pools Are Emerging in Tier 2 & 3 Cities

Digital infrastructure and hybrid work models have opened access to wider talent pools. Companies are now hiring from tier 2 and 3 cities to meet the demand for roles in clinical research, pharmacovigilance and quality assurance. These regions offer a stable and often cost-effective talent base. In markets like India and across Southeast Asia, smaller cities are producing job-ready candidates across various life sciences functions. Companies are investing in onboarding processes and digital tools that make it easier to integrate remote hires into core teams. This approach reduces cost pressures, diversifies operations, and builds resilience across delivery locations.

## Niche R&D Roles

Scientific innovation is driving demand for specialised roles in precision medicine, real-world evidence, synthetic biology and drug-device combinations. These profiles require rare cross-disciplinary expertise and are limited in availability across global markets. To meet this need, organisations are moving beyond passive recruitment. Passive recruitment focuses on engaging professionals who aren't actively job hunting but may be open to the right opportunity. It involves reaching out to experienced candidates with in-demand skills, often through targeted outreach or executive search, especially for senior or specialised roles. This effort is supported by stronger employer positioning in research and academic networks. R&D hiring has become highly strategic. Lead times are longer, expectations are higher & the opportunity cost of vacant roles is significant.

## Talent Development Is Becoming a Business Priority

Pharma companies are placing greater emphasis on internal talent development. In functions such as digital trials and data-focused research, upskilling existing employees is proving both practical and cost-efficient. Organisations like BMS and Sanofi are equipping scientists with data competencies and enabling transitions into adjacent roles. This reduces dependency on constant external hiring and strengthens long-term capability from within.

## Workforce Planning Is Moving Upstream

As recruitment becomes more data-enabled, companies are strengthening their workforce planning capabilities. Rather than reacting to attrition or growth cycles, hiring teams are anticipating talent needs aligned with evolving clinical and commercial strategies. Scenario-based planning is helping align hiring with business development timelines, reduce mismatch and improve execution speed. This makes recruitment more predictive and better integrated with overall business planning. 58 per cent of recruiters and HR decision-makers understand how strategising is driving the results and thus, already use tools, including AI, to augment their current recruitment technology stack, further supporting these forward-looking approaches.

## Automation and Analytics Are Making Recruitment More Predictable

Recruitment is becoming more data-driven. With hiring cycles under constant pressure, companies are turning to automation to handle routine tasks and using analytics to guide decision-making. Screening tools, virtual interview platforms and candidate matching systems are helping improve quality and consistency. Predictive analytics supports workforce planning by modelling future demand based on business scenarios and clinical timelines. Today, 65 per cent of companies report using artificial intelligence in hiring decisions. These tools have helped reduce recruitment costs by up to 30 per cent and saved recruiters an average of 15 hours per week. The global AI recruitment market is currently valued at $661.56 million, with enterprise adoption expected to grow at a CAGR of 6.78 per cent between 2023 and 2030. Metrics such as time-to-offer, 12-month retention and cost-per-hire are being used as critical indicators of hiring effectiveness. These measures enable talent teams to continuously improve delivery outcomes and stay aligned with business objectives.

## APAC in Global Talent Strategy

Asia Pacific continues to shape the global pharmaceutical hiring landscape. The region has seen significant growth in manufacturing, R&D investments and early-stage partnerships. As a result, local hiring activity has become a strong indicator of global industry momentum. A study of 900+ pharma companies across 14 countries in APAC revealed that firms with strong innovation scores also showed higher talent maturity and hiring capability. These companies were more effective at linking workforce planning to development strategy. A leading pharma company alone posted 10,170 jobs in Q2 2024, accounting for 38 per cent of total pharma hiring activity across the region. This level of activity reflects how APAC markets are becoming hubs for specialised talent development and scientific advancement.

## Evolving Organisational Design

As pharma hiring becomes more decentralised, companies are rethinking how recruitment teams are structured and governed. Central talent acquisition hubs are now being supplemented with regional or business-unit-aligned recruiters who understand local needs. This distributed approach allows organisations to respond faster to role-specific requirements without sacrificing process consistency. To manage complexity, companies are building shared frameworks that define hiring principles, candidate experience standards and data practices across teams. This balance between autonomy and alignment is essential for companies that operate across multiple therapeutic areas, product types and geographies. It also strengthens accountability at the hiring manager level, which supports better planning and ownership of workforce outcomes.

## What's Shaping How Pharma Attracts Talent?

Top talent in pharma is not just chasing salaries. They are drawn to companies where the work has meaning, the culture is authentic, and the path ahead is clear. For candidates in scientific and digital roles, who often have multiple options, these factors influence where they choose to invest their time and skills. Pharma companies are responding by refining how they communicate their mission, culture and career development pathways during the hiring process. Employer brand presence across digital platforms, transparency in interview timelines and personalised candidate engagement have become important differentiators. This shift has helped increase acceptance rates in critical functions where delays or offer declines can set back key milestones.

## The Next Phase

Hiring in the pharmaceutical sector is moving toward a more structured, strategic, and insight-led approach. Companies that once relied on fixed job roles and centralised processes are now building systems that respond to variable demand, geographic expansion and advanced scientific needs. Skills-based evaluation, modular hiring models, internal development, and workforce planning are now central to recruitment strategies. These are not temporary adjustments. They are defining the next phase of workforce planning in pharma. BS

# Martin Fischer steps in as President and CEO of Zeiss Greater China

Zeiss Group, an expert in Semiconductor Manufacturing Technology, Industrial Quality & Research, Medical Technology and Consumer Markets, has announced that Martin Fischer will officially take on the role of President and CEO of Zeiss Greater China, effective from October 1, 2025, reporting directly to Andreas Pecher, President and CEO of the Zeiss Group. Fischer succeeds Maximilian Foerst, who joined the Executive Board of the Zeiss Group as the President and CEO of Carl Zeiss Meditec AG on June 1, 2025. Zeiss Greater China manages all business activities in China's mainland, Hong Kong SAR, and Taiwan Region. Fischer joined Zeiss in 2006 and has held positions at various business segments. Since 2022, he has been Global Head of Sales, Service & Marketing for Research Microscopy Solutions (RMS). In this position, he has expanded the commercial organisation to include marketing and customer experience. In addition, he has made important contributions to regional growth projects in the US and APAC, and to the strategic programs for the Zeiss Group.

# TVM Capital Healthcare on-boards Dr Su-Lin Chong as Operating Partner in Malaysia

TVM Capital Healthcare, a leading international healthcare private equity firm and operator focused on emerging markets, has announced the appointment of Dr Su-Lin Chong as Operating Partner and Investment Committee member. Based in Kuala Lumpur, Dr Su-Lin brings decades of operational leadership and clinical expertise to support the firm's investment strategy in Southeast Asia. Dr Su-Lin has nearly 30 years of experience across pharmaceuticals (including oncology and respiratory drugs), ambulatory and post-acute care, specialty care, and hospital management. Her knowledge of the Malaysian and regional healthcare landscape, and track record in driving operational excellence, will be key as TVM Capital Healthcare continues to expand its footprint in the region. She began her career in hospital management at Subang Jaya Medical Centre, now part of Asia OneHealthcare, and later became founding CEO and Project Director for International Medical University's planned medical centre.

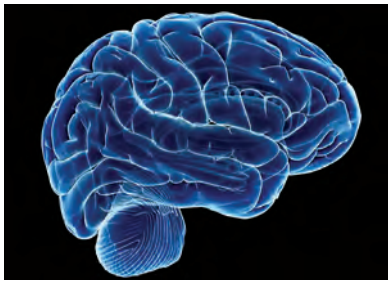
# Epsilon Healthcare appoints Daniel Kaplon as CFO

Australia-based Epsilon Healthcare has announced the appointment of Daniel Kaplon to the role of Chief Financial Officer (CFO). Kaplon is a Chartered Accountant and seasoned executive with over 25 years' experience spanning finance, operations, and commercial leadership roles across ASX-listed and private companies in healthcare, health technology, and manufacturing. Notably, he was recently CFO at an ASX-listed small cap digital health company and has held senior leadership roles at Ramsay Health Care in its pharmacy division and served as CFO/COO at MediSecure, an electronic prescription exchange service. The addition of Daniel to Epsilon Healthcare is aimed at assisting with enhanced reporting, delivering operational efficiency, and laying the foundations for long-term sustainable growth of the company.

# Australia develops new ultrasound imaging device to map drug delivery into brain

A new device combining ultrasound and advanced imaging to provide crucial information for the safe delivery of drugs into the brain has been developed by University of Queensland researchers in Australia.

The device allows real-time observation of individual cells after ultrasound treatment, which is an emerging technology for the delivery of drugs past the blood-brain barrier. The information learned about how treated cells respond and change could



ultimately benefit the treatment of neurodegenerative brain disorders such as Alzheimer's and Parkinson's disease. The custom-built device will examine sonoporation-based drug delivery. Sonoporation is an emerging strategy involving ultrasound-based treatment combined with injected 'microbubbles'. In this process, sound waves interact with the microbubbles causing them to vibrate and exert force on the blood-brain barrier to create a tiny pore at the cell surface. The device, developed over 5 years, will allow researchers to identify and map changes in treated cells and observe how they respond and recover.

## Researchers in India design simple sensor for liver cancer detection

Researchers at the Indian Institute of Science (IISc), Bengaluru have developed a unique luminescent probe that uses terbium, a rare earth metal, to sense the presence of an enzyme called β-glucuronidase, which can potentially aid in the detection of liver cancer. The roots of the project trace back nearly a decade, beginning with the team's experiments on metal ions and their gel-forming properties. The team found that terbium ions couched in a gel matrix derived from bile salts can emit green fluorescence. Within the same gel matrix, the team added an organic molecule called 2,3-DHN (2,3-Dihydroxynaphthalene) masked with glucuronic acid. When β-glucuronidase slices this modified molecule, 2,3-DHN gets released. The researchers then shined UV light on the sample. For ease of application, the team has designed this assay as a simple paper-based sensor by anchoring the gel matrix onto a paper disc. When β-glucuronidase pre-treated with modified 2,3-DHN is added, the disc exhibits a much stronger green glow under UV light. The researchers say that clinical studies will still need to be carried out to validate the assay. But they are hopeful that such sensors can bring down the cost of detecting clinically significant biomarkers.

## Hong Kong launches gene-related therapy trials to eradicate chronic hepatitis B infection

Researchers in gastroenterology and hepatology at the LKS Faculty of Medicine, the University of Hong Kong (HKUMed), have initiated multiple clinical trials exploring pioneering gene-related therapy for chronic hepatitis B infection, potentially allowing patients to discontinue long-term medication. This positions HKUMed as one of only three global sites conducting these groundbreaking trials, alongside counterparts in Europe and New Zealand. As the trials progress, they underscore Hong Kong's status as a leader in global scientific medical research, offering hope to millions affected by chronic hepatitis B. With an expected enrollment of 30 to 40 participants by the end of 2026, the future looks promising for those seeking respite from this persistent and deadly infection. Gene-related therapy is emerging as a revolutionary approach in the treatment of hepatitis B.

# Korean study proposes toxicity-based exposure limits for indoor airborne fungi

Airborne microorganisms, including fungi and bacteria, are major contributors to indoor air pollution, with growing links to respiratory diseases. In a recent study, scientists from Korea explored the health effects of common airborne microbes by testing their toxicity in mice and calculating human-equivalent exposure limits. The results revealed that some fungi can cause lung inflammation and injury even at concentrations below current guideline levels, highlighting the need for species-specific indoor air quality standards. This is the first study to estimate human health risks from indoor microbes using benchmark doses derived from animal toxicity data. The study determined that exposure to fungi may be unsafe even at levels below current South Korean and World Health Organization guidelines. By contrast, the estimated safe limits for bacteria were consistent with existing regulations. These findings could inform multiple applications: regulatory policy, building health certification, performance standards for air purifiers, and occupational safety in high-density spaces.

# Japan engineers functional liver organoids with organ-specific vasculature

Liver organoids with proper blood vessel networks have been successfully produced, as reported by researchers from Institute of Science Tokyo, Japan and Cincinnati Children's Hospital Medical Center in the US.

This advancement addresses a major challenge in replicating the liver's complex vasculature in lab-grown tissues. Using a novel 3D culture system, the researchers achieved the self-organisation of four distinct precursor cell types into functional organoids, capable of producing essential clotting factors in a haemophilia A mouse model. This technology could lead to advances in personalised medicine, where organoids grown from a patient's own cells could be used to provide tailored treatments or serve as testing platforms for assessing drug responses. The research team plans to further explore the applications of these liver organoids and evaluate their long-term stability and safety for clinical use.

# Singapore pilots innovative approach to diabetic foot care through 3D-printed custom insoles

Sengkang General Hospital (SKH) has piloted an innovative approach to diabetic foot care through in-house production of 3D-printed custom insoles in a cross-institution collaboration with Singapore General Hospital's (SGH) 3D printing centre. Traditional pressure-relieving insoles, produced overseas, typically take up to two months to reach patients, with extended time needed for adjustments as it may involve shipping the insoles back and forth sometimes. Now,

patients can receive precisely customised insoles in just one week - marking a significant advancement in both accessibility and quality of care for patients with diabetes. This innovation transforms SKH's diabetic foot care from a manual craft into a precise science. Traditional insoles are created by hand or with the aid of CNC machines, using materials like EVA foam or other suitable materials. This manual process not only takes longer but can lead to variations in quality and fit. Any adjustments needed may mean shipping the insoles back overseas, further extending waiting times.

## Merck unveils AAW workstation to advance lab automation

Merck, a leading science and technology company, has launched the Automated Assay Workstation (AAW), a solution powered by Opentrons, a leader in lab automation and accessible robotics. The workstation automates routine laboratory experiments previously performed manually, reducing hands-on time and ensuring consistency in results across diverse experimental settings. This launch follows the earlier announcement of a multi-year partnership with Opentrons Labworks, Inc. to enhance laboratory workflows through automation. Designed to advance the lab of the future, the AAW platform offers a plug-and-play setup and an extensive library of verified assay protocols across protein, molecular, and cell biology applications. Its versatility and ease of integration make it an ideal fit for academic, biotech, and pharmaceutical labs looking to boost productivity without compromising quality.

## Waters and BD's Biosciences & Diagnostic Solutions business to merge into one

US-based Waters Corporation and BD (Becton, Dickinson and Company) have announced a definitive agreement to combine BD's Biosciences & Diagnostic Solutions business with Waters, creating an innovative life science and diagnostics leader with pioneering technologies and an industry-leading financial outlook. The agreement is structured as a tax-efficient Reverse Morris Trust transaction valued at approximately $17.5 billion. The combined company will have best-in-class liquid chromatography, mass spectrometry, flow cytometry, and diagnostic solutions, doubling Waters' total addressable market to approximately $40 billion. Over 70 per cent of the combined company's revenue is expected to be recurring annually and over half of instrument revenue is expected to be recurring within a typical five- to ten-year replacement cycle. The bioseparations portfolio will expand by combining Waters' chemistry expertise and BD's biologics expertise to unlock new ways to separate large molecules and to drive growth in biologics and novel modalities with next-generation consumables.

## Thermo Fisher introduces new assay to help advance future of precision medicine

US-based Thermo Fisher Scientific has announced that the Oncomine Comprehensive Assay Plus is now available on the Ion Torrent Genexus System helping accelerate precision oncology research. The Oncomine Comprehensive Assay Plus detects a broad range of genomic alterations in 517 genes and will now be able to deliver comprehensive genomic profiling (CGP) results as soon as the next day, enabled by Ion Torrent technology and easy, automated workflows. CGP facilitates the simultaneous analysis of a broad range of biomarkers in one test to maximise insights on the underlying oncogenic drivers in a timely manner. Already available on the Ion GeneStudio S5 systems, the Oncomine Comprehensive Assay Plus detects single-nucleotide variants, insertions and deletions, copy number variations, and fusions. Additionally, the assay detects genomic signatures such as homologous recombination deficiency (HRD), tumour mutational burden (TMB) and microsatellite instability (MSI). With the capabilities of the Genexus System, researchers can now detect a broad range of these important biomarkers, quickly and easily. The Genexus System is an automated and integrated NGS platform capable of delivering NGS results as soon as the next day.

# Bio-Rad launches four new Droplet Digital PCR platforms

Bio-Rad Laboratories, Inc., a global leader in life science research and clinical diagnostics products, has announced the launch of four new Droplet Digital PCR (ddPCR) platforms. The newly introduced instruments include Bio-Rad's QX Continuum ddPCR system along with the QX700 series of ddPCR platforms acquired as part of the company's recently completed acquisition of digital PCR developer Stilla Technologies.

Together with Bio-Rad's existing line of QX200 and QX600 ddPCR systems, the expanded product portfolio, including over 400,000 assays, offers the most comprehensive line of digital PCR products for life science research and diagnostic applications. The end-to-end solutions feature industry-leading absolute quantification, high precision, and advanced multiplexing capabilities, combined with streamlined and simplified workflows. The QX Continuum ddPCR system is designed for translational research applications. It features qPCR-like workflow offering simplicity, performance and flexibility in an all-in-one configuration with four-color multiplexing and up to eight discrete thermal profiles per plate.

# PHC announces exclusive distribution of MaxCyte ExPERT platform in Japan

The Biomedical Division of Japan-based PHC Corporation (PHCbi), a subsidiary of PHC Holdings Corporation (PHCHD), has signed an exclusive agreement with MaxCyte, Inc. to distribute the MaxCyte ExPERT platform in Japan. In Singapore, SciMed (Asia), a subsidiary of PHCHD, separately entered into an exclusive distribution agreement with MaxCyte and launched the ExPERT platform in the country in June. MaxCyte is a leading, cell-engineering focused company providing platform technologies to advance the discovery, development and commercialisation of next-generation cell therapeutics. Under this partnership, PHCbi will offer sales and service support for MaxCyte's instruments, consumables, and solutions, providing researchers and manufacturers with access to a clinically proven, non-viral cell engineering platform. MaxCyte's ExPERT instrument portfolio is the next generation of leading, clinically and commercially validated electroporation technology for complex and scalable cell engineering.

# Agilent launches InfinityLab Pro iQ Series Mass Detectors in India

Agilent Technologies has launched its InfinityLab Pro iQ Series mass detectors in India. The highly anticipated series, designed for next-generation liquid chromatography-mass detection (LC-MS), is poised to transform how Indian scientists detect and analyze impurities, trace contaminants, and complex biomolecules with unprecedented ease and sensitivity. The InfinityLab Pro iQ Series, comprising the Pro iQ and Pro iQ Plus, represents a significant leap forward in LC-mass detection. These intelligent, compact systems are designed to meet the evolving needs of modern analytical laboratories. They offer triple quadrupole-level sensitivity within a single quadrupole system, enabling highly sensitive and accurate detection. The systems incorporate smart automation features that ensure ease of use and consistent performance across workflows. Additionally, they integrate seamlessly with Agilent's InfinityLab LC portfolio and the OpenLab software suite, creating a unified and efficient analytical environment.


# China's Innovative Approach to Universal Health Coverage

China has successfully implemented various medical insurance reforms and development tasks under five principles including promoting equity and accessibility, the rule of law, technological empowerment, coordinated development and safeguarding the security of the fund during the first four years of the 14th Five-Year Plan (the 2021-2025 period). The authorities nationwide have spent about 72.3 billion yuan (about $10.1 billion) to assist people from disadvantaged groups, providing support for 350 million instances of insurance coverage. China's basic medical insurance has maintained a coverage rate of around 95 per cent, with over 1.32 billion people enrolled in 2024. Medical assistance schemes cover approximately 80 million people in China each year, helping to ensure that they can benefit from the insurance programme.

From 2021 to 2024, nearly 20 billion medical visits received medical insurance reimbursement, a 1.6-fold increase from 2020. As of June 2025, 253 million people had participated in maternity insurance, with cumulative fund expenditures of 438.3 billion yuan and 96.1432 million benefits received. China has also optimised the "one-stop birth" process, allowing newborns to enroll in insurance with just a birth certificate. Thirty-one provinces and the Xinjiang Production and Construction Corps have included assisted reproductive services in medical insurance reimbursement. Nearly 60 per cent of coordinated regions nationwide provide direct maternity benefits to insured female employees.

As of June 2025, the number of medical institutions designated by medical insurance nationwide has reached 1.1 million. Currently, 10 types of outpatients, chronic and special diseases, are directly reimbursed across provinces. There are 644,000 cross-provincial networked-designated medical institutions nationwide. Over the past four years, direct settlement of cross-provincial medical treatment has benefited 560 million people, reducing the advance payment of insured people by 590 billion yuan. Besides, China has formulated several measures to support the high-quality development of innovative drugs, maintained dynamic adjustments to the medical insurance drug catalogue, and promoted the expedited inclusion of more new and high-quality drugs in it. In the last four years of this Five-Year Plan, 402 drugs have been added to the catalogue. The government has issued 30 batches of guidelines for the establishment of medical service pricing projects, promoting the clinical application of more new technologies and equipment that reflect new quality productivity. The various medical security assistance policies including the multi-tiered medical security system called "1+3+N" has benefited 673 million low-income rural residents, reducing their medical burden by over 650 billion yuan.

During the period, China's medical insurance authority adopted multiple measures to ensure reasonable pricing of medicines. To date, the National Healthcare Security Administration (NHSA) has issued notices to 566 companies, requiring price adjustments for 726 medicines across various specifications. In addition, the NHSA implemented measures to regulate medicine prices both online and at physical drugstores. China has intensified efforts to protect the maternity rights of working women by providing maternity insurance. 253 million people were covered by China's maternity insurance by June 2025, including rising numbers of flexible employees and migrant workers. Since 2021, the maternity insurance benefits have been accessed 96.14 million times, with cumulative fund expenditure totaling 438.3 billion yuan. NHSA attaches great importance to neonatal medical care, actively protecting the "little ones," optimising neonatal insurance policies, and vigorously promoting the "birth of one thing" programme. This has significantly increased the neonatal insurance coverage rate. This year China's central budget has allocated 90 billion yuan (about $12.6 billion) to support the issuance of childcare subsidies.

To address the historical problem of "drug backflow" from medical insurance as well as illegal and irregular practices, the authorities will launch a special campaign using traceability codes and expose a number of typical cases and by strengthening warning education. This year signifies the concluding year of the 14th Five-Year Plan. China will speed up the execution of all objectives set in the 14th Five-Year Plan for universal health coverage, guaranteeing a solid beginning for the 15th Five-Year Plan. BS

**Narayan Kulkarni**
Editor
narayan.kulkarni@mmactiv.com

# Minicircle DNA
## The small alternative

PlasmidFactory®
The *Minicircle* Company

PlasmidFactory's
ingenious & reliable

# Minicircle

- No bacterial backbone
- Improved yield – minimized costs
- Approved in clinical trials
- Ready to use

**References**


Bexte et al., 2024
Pommersberger et al., 2022
Monjezi et al., 2016
Schnödt et al., 2016


MADE IN GERMANY FOR **GLOBAL** DISTRIBUTION!

**PlasmidFactory.com**


**PlasmidFactory GmbH | Meisenstraße 96 | 33607 Bielefeld | Germany**


# Precision and Efficiency

Delivering the Future Now

EVA AIR Cargo

Visit www.brcargo.com for routes, reservations and tracking information.