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Medical Advances Soar with APAC's Clinical Trial Growth

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Acknowledgement/Feedback

Thank you so much for the interesting article on Accurate and Affordable Cancer Screening: Making a Difference in Women's Health with Portable Devices.

Arti Gupta, India

Thank you for featuring the interview with Syngene in BioSpectrum Asia's latest edition.

Mrinalini Bhat, India

The story on the biopharma jobs market scenario looks great.

Juno Zhu, China

The cover article on biotech boom and digital healthcare in the APAC region is a good read.

Angela, Taiwan

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Letter from Publisher

Ravindra Boratkar
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Dear Readers,

The clinical research landscape in the Asia-Pacific (APAC) region has changed significantly in recent years. This is driven by regulatory reforms, growing academic–industry collaboration, and rising domestic innovation. The region is currently a major driver of clinical development worldwide, thanks to multi-regional pivotal trials and first-in-human investigations. According to ClinicalTrials.gov, there were 39,843 clinical trials conducted throughout the APAC region between 2020 and mid-2025.

A comparative study of six major nations—China, South Korea, Japan, Australia, India, and Singapore—confirmed by our team, indicates that China has the most trials (25,329), followed by South Korea (5,059), Australia (3,821), Japan (2,541), India (1,914), & Singapore. While each nation contributes special qualities to the clinical development environment in the region, industry sponsorship is the most prevalent overall, with South Korea (60 per cent) & Japan (93 per cent) having the highest shares. In contrast, the bulk of trials in China and India are sponsored by public hospitals and institutes, reflecting their more academically oriented profiles. With 47 per cent of its population in industry and 53 per cent in academia, Singapore is more balanced.

Japan is reportedly the fourth-largest manufacturer of medical technology (medtech) in terms of revenue, followed by the United States, China, and Germany. But the growth of medical device businesses' sales in the Japanese market is limited, therefore they are extending their sales through worldwide expansion, with India developing as a vital market. Compared to their Western counterparts, Japanese medtech companies began their adventure in India later, in 2000. However, as more companies establish a commercial foothold in the Indian market, the pace is increasingly accelerating. In a piece, our team examines how Japan and India have been working together to overcome similar healthcare issues including ageing population and workforce shortages, setting new standards in the process.

Taiwan's biotechnology industry is growing gradually with the support of business and government cooperation, and in 2023, it was expected to generate about $23.3 billion in revenue. In the global biotech value chain, the industry is establishing itself as a significant participant. Our team has a story about how Taiwan is steadily moving closer to its biotech objectives by tackling issues with scale, talent, and regulations and strengthening international alliances to become a major player in the global biotech value chain. Age is a slow, systemic deterioration that affects everything; it is not the product of a single malfunction. This has long been known to researchers, who have charted the intricate network of genes, pathways, enzymes, and signaling molecules that are involved. The pharmaceutical industry has spent decades trying to make sense of the complicated process of ageing. An expert explains that the industry has at last created methods to handle that complexity on its terms through the use of AI and polypharmacology.

In Malaysia, the frequency of PCI procedures including stents has increased significantly in recent years and is expected to continue to climb due to demographic changes, rising CVD prevalence, and technical developments. For more than 20 years, there hasn't been a significant advancement in stent technology since the advent of DES. Experts note that the industry has just discovered a new technology called bioadaptor, which is poised to challenge DES's hegemony in the PCI market.

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

Thanks & Regards,

Ravindra Boratkar
Publisher & Managing Editor

Medical Advances Soar With APAC'S CLINICAL TRIAL GROWTH

It's a truth universally acknowledged that Asia-Pacific is a hotbed for clinical trials, with multiple reports confirming that it is the only region in the world to have seen a consistent surge in clinical trial activity. The Asia Pacific clinical trials market generated a revenue of $15.91 billion in 2023 and is expected to reach a projected revenue of $25.99 billion by 2030 at a compound annual growth rate of 7.3 per cent, according to the Grand View Research report. Between 2020 and 2025, China, India, Australia, Japan, South Korea, and Singapore emerged as key pillars of Asia-Pacific's growing clinical trial ecosystem. Together, these six countries accounted for nearly 40,000 trials (39,843 in total). We take a close look at each country's clinical trial landscape, examining who is leading in which phases, how domestic players compare to multinational sponsors, and which therapeutic areas are seeing the most activity. We also explore the challenges of running trials across such a diverse region. Let's dive in.

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IRREPLACEABLE HUMAN TOUCH

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The trend of virtual and remote healthcare—including diagnostics and treatment—is gaining traction globally. Telemedicine, in particular, saw a rapid acceleration during COVID-19, when in-person consultations were often avoided due to the risk of virus transmission. Both healthcare providers and patients embraced remote care as a safer alternative. According to a GlobalData survey, 56 per cent of healthcare professionals believe that the growth of telemedicine and remote care has enhanced patients' control over their health management. Among them, 13 per cent strongly agreed, while 26 per cent remained neutral. Only 2 per cent disagreed and 3 per cent strongly disagreed, showing widespread acceptance of this shift.

The trend is picking up significantly across Asia. Even Pakistan is exploring the use of artificial general intelligence (AGI) for diagnostics and nursing education. The Pakistan Nursing and Midwifery Council (PNMC) has partnered with a California-based AI company to address critical challenges in nursing education. The country faces a staggering shortage of skilled nurses—estimated at over 3 million—& without intervention, it would take more than 90 years to bridge this gap. AI, therefore, is being seen as a vital solution. The rise and spread of virtual care & treatment is also beneficial for the hospitals, as in several places in Asia, they are experiencing a shortage of beds. A recent report from Singapore mentioned that with rising demand for critical care, hospitals often experience a shortage of beds and experienced clinical staff, particularly for ICUs. Thus, the Singapore Health Services (SingHealth) is working on optimising the smart ICU's capacity. They can detect patient deterioration early, allowing treatments to be given even in non-ICU wards without the necessity of moving the patient to the ICU.

SingHealth is working with Royal Philips to optimise smart ICU capacity. Smart ICU systems can detect early signs of patient deterioration, enabling treatment in general wards and reducing unnecessary ICU transfers. Scenes of patients being treated on floors due to a lack of proper beds are still common in public hospitals in major cities across developing nations. Virtual care, wherever applicable, can reduce this burden, ensuring that hospital beds are reserved for patients who truly need them. In this context, virtual healthcare, telemedicine, and remote treatment are immensely beneficial. Many patients—and their families—prefer home care over hospital admission during serious illness, valuing emotional support and the comfort of home. However, home-based care poses challenges for lower-income families, who may lack space, equipment, or the ability to afford trained nursing support. For such cases, hospital admission remains the more viable option.

Considering all these aspects, hospital admission is preferable in several cases. While it is widely perceived that telemedicine surged during the pandemic, several experts argue that digital transformation in healthcare did not progress as much as expected. Many healthcare organisations in the Asia-Pacific (APAC) region still struggle with change management & system-wide transformation. Frank Koo, Founder of Nextplay—a platform that helps employees navigate workplace transitions—told Healthcare IT News that resistance to change is often rooted in cultural and structural issues. Organisations tend to treat digital transformation as a technological challenge rather than a human-centred one. He emphasises the importance of purpose-led change: Leadership should clearly articulate how digital systems will improve patient outcomes or ease clinical burden, rather than merely focusing on technological capabilities. Soon, we may even see robotic healthcare assistants working in hospitals and homes. At-home robotic caregivers could offer valuable assistance, particularly in monitoring and supporting patients around the clock. However, this raises an important concern: What happens to the human touch in healthcare? Years ago, a renowned cardiac surgeon at a public hospital in Mumbai, India, highlighted that one of the strengths of postoperative care in India was the warmth and presence of human caregivers—a "human touch" often missing in highly mechanised systems elsewhere. Emotional support, compassion, and empathy are difficult to replicate through machines. As digital healthcare evolves, the challenge will be to retain this vital human element alongside technological advancements. BS

AusBiotech & Austrade ink partnership to accelerate global expansion of life sciences industry

AusBiotech, Australia's peak body for the life sciences sector, and the Australian Government's Trade and Investment Commission (Austrade) are partnering to accelerate the global growth and expansion of Australian life science companies.

The partnership will deliver a new National TradeStart Adviser role, to support Australian biotechnology, pharmaceutical, medical technology, and digital health companies to scale and grow internationally. The National TradeStart Adviser, embedded within AusBiotech's team, will work directly with life sciences companies across Australia, connecting them with Austrade services and programmes globally. AusBiotech is the first life sciences peak body to join with Austrade as a national partner in delivering TradeStart, joining other industry peak bodies in the programme.

New Zealand grants approval to prescribe psilocybin for treatment-resistant depression

Medsafe, New Zealand's regulator of medicines and medical devices, has given approval for psychiatrists to prescribe medicinal psilocybin for treating treatment-resistant depression. This is the first time psilocybin will be prescribed outside of a research setting in New Zealand, and will give people with this severe condition more options. The psychiatrist can prescribe, supply and administer medicinal psilocybin to any patient they have assessed and diagnosed with treatment-resistant depression. There are a number of safeguards in place to ensure psilocybin is prescribed appropriately. The psychiatrist will need to follow a defined process, which includes carrying out detailed clinical assessments and considering any potential history of medicine misuse. There will also be requirements around recording-keeping and reporting to Medsafe. This ensures Medsafe can take action quickly if the need arises. There are no approved products containing psilocybin in New Zealand, so it has not been assessed for its safety and effectiveness by Medsafe. This also means that no other clinician can prescribe psilocybin, at this stage.

Singapore launches national Familial Hypercholesterolaemia genetic testing programme

The Ministry of Health (MoH), Singapore government, has launched the national Familial Hypercholesterolaemia (FH) genetic testing programme on June 30, 2025, as part of its broader strategy to enhance preventive care in Singapore. This initiative aims to identify individuals with FH early and reduce the risk of premature heart disease for these individuals with timely interventions. Genetic tests for FH at the Genomic Assessment Centres (GAC) will be subsidised for eligible Singapore Citizens and

Permanent Residents, and they can also tap on their MediSave to offset the cost. FH is a condition that affects the body's ability to process cholesterol. It affects an estimated 20,000 people in Singapore. As part of the push to enhance preventive care, MoH is targeting to open three GACs to ensure effective, efficient and sustainable delivery of genetic testing services within each healthcare cluster. Individuals referred to the GACs will undergo Pre-test genetic counselling, to understand potential outcomes and benefits before consenting to the test; Blood drawing and genetic test, arranged by the GAC; Post-test genetic counselling, to understand the implications of the results.

India opens computing facility to boost genomic research

The Indian Council of Medical Research (ICMR), under the Health Ministry, has marked a significant milestone in advancing India's public health research capabilities with the inauguration of its first High Performance Computing (HPC) facility at the ICMR–National Institute of Virology (NIV), Pune. The state-of-the-art computing cluster, named NAKSHATRA, was officially inaugurated by Dr Rajiv Bahl, Secretary of the Department of Health Research (DHR) and Director General of ICMR. Developed under the Pradhan Mantri Ayushman

Bharat Health Infrastructure Mission (PM-ABHIM), the HPC facility forms the cornerstone of a new project titled 'High Performance Computing Next Generation Sequencing (NGS) Hub'. The initiative aims to revolutionise how genomic and bioinformatics data are processed, addressing limitations faced during the COVID-19 pandemic due to conventional computing infrastructure. The newly commissioned HPC cluster features twelve compute nodes, offering a total of 700 core and 1 petabyte of storage. The infrastructure is tailored to support complex bioinformatics workflows including next-generation sequencing (NGS), transcriptomics, phylogenetics, metagenomics, and structural bioinformatics.

Indonesia and Thailand ink health MoU focusing on global capacity and collaboration

In a series of official visits by the President of the Republic of Indonesia Prabowo Subianto to Thailand, bilateral cooperation between the two countries was strengthened through the signing of a Memorandum of Understanding (MoU) in the health sector. The MoU document signed is a MoU between the Ministry of Health of the Republic of Indonesia and the Ministry of Public Health of the Kingdom of Thailand on Health Cooperation. The signing was carried out by the Minister of Foreign Affairs of the Republic of Indonesia, Sugiono, and the Minister of Public Health of Thailand, Somsak Thepsuthin. After the signing, President Prabowo said that cooperation in the health sector is an important part of strengthening joint capacity, especially in facing global challenges such as potential future pandemics. The signing of this MoU is a concrete step in encouraging cooperation between institutions between the two countries, strengthening the resilience of the national health system, and responding to cross-border challenges in a collaborative and sustainable manner.

Korea Smart Healthcare Association to build next-gen medical platform

The Korea Smart Healthcare Association and SL Foundation have signed a Memorandum of Understanding (MoU) to form a strategic partnership aimed at advancing Korea's medical technology innovation and enhancing global public health. The agreement focuses on jointly developing and building a next-generation medical platform leveraging multimodal technologies, artificial intelligence (AI), and blockchain. The Korea Smart Healthcare Association is a key institution leading the digital healthcare industry across various sectors. It operates with the approval of major government ministries, including the Ministry of Health and Welfare, the Ministry of Food and Drug Safety, and the Ministry of Science and ICT. Under this MoU, the two organisations plan to launch advanced collaborative research and commercialisation efforts in the digital healthcare sector.

PolyActiva secures AUD $40 M in Series C to advance ocular drug delivery

Australia-based PolyActiva, a clinical-stage biopharmaceutical company pioneering a novel drug delivery technology to improve outcomes for patients with ocular conditions, has secured AUD $40 million in Series C funding. The investment syndicate includes the Australian National Reconstruction Fund Corporation (NRFC), with continued support from Australia's leading biotech investor, Brandon Capital. The financing will support the continued clinical advancement of PolyActiva's lead ocular implant candidate, PA5108, a biodegradable, sustained-release ocular implant designed to deliver latanoprost for the reduction of intraocular pressure (IOP) in patients with ocular hypertension and glaucoma. With the potential to maintain IOP control for six months or longer, PA5108 could eliminate the need for daily eye drops, currently the primary method used to treat glaucoma.

AriBio licenses Alzheimer's drug to Arcera in $600 M deal

AriBio Co., a South Korean biopharmaceutical company specialising in neurodegenerative diseases, and a Swiss pharmaceutical company Acino, part of Arcera, a global life sciences company based in Abu Dhabi, have announced the signing of exclusive licensing and commercialisation, and supply agreements for AR1001, an investigational oral therapy for Alzheimer's disease. Under the terms of the agreements, Arcera will have exclusive rights to commercialise AR1001 in its key markets, including Latin America, the Middle East, Southern Africa, Ukraine and select Eurasian countries. AriBio will be responsible for manufacturing and supplying the product. The total deal value is estimated at $600 million across the development, launch and commercialisation period, contingent upon the achievement of certain milestones. AR1001 is a novel, disease-modifying, once-daily oral phosphodiesterase-5 (PDE5) inhibitor currently being studied in a global Phase 3 clinical trial (POLARIS-AD) for the treatment of early-stage Alzheimer's disease. The enrollment target for the Phase 3 trial has been reached, and the topline results are expected in the first half of 2026.

AstraZeneca inks collaboration worth $3.6 B with CSPC Pharma in China

AstraZeneca has entered a strategic research collaboration with Shijiazhuang City-based CSPC Pharmaceuticals Group. Working together on high priority targets, the collaboration aims to advance the discovery and development of novel oral candidates, with the potential to treat diseases across multiple indications. Under the terms of the agreement, AstraZeneca and CSPC agree to discover and develop pre-clinical candidates for multiple targets with the potential to treat diseases across chronic indications, including a pre-clinical small molecule oral therapy for immunological diseases. The collaboration furthers AstraZeneca's presence in China following the $2.5 billion investment in Beijing announced earlier this year and strengthens the ongoing collaboration with CSPC. Under the terms of the agreement, CSPC will receive an upfront payment of $110 million, and is also eligible to receive up to $1.62 billion in potential development milestone payments and up to $3.6 billion in sales milestone payments, plus potential single digit royalties based on annual net sales of the products.

Quadria Group takes control of HealthQuad for launching Fund III with corpus of $300 M

Quadria Group, Asia's leading healthcare-focused private equity platform, has announced the launch of HealthQuad Fund III, with a proposed raise of up to $300 million (target corpus of $200 million with a $100 million greenshoe option). As a successor to Funds I and II, the third fund seeks to build on a proven track record of identifying and scaling pioneering healthcare ventures that have significantly expanded

access, affordability, and quality of care across India. The launch is part of Quadria's long-term vision to build India's most integrated healthcare investment platform, offering capital solutions from early-stage innovation to scaled growth across the healthcare value chain. Through this new fund, Quadria Group intends to combine its pan-Asian network, institutional investor base, and operational expertise to deliver scaled impact and value. The Group recently closed Quadria Capital Fund III at $1.07 billion, with strong backing from leading global institutions.

Vietnam Vaccine JSC injects $77 M in new manufacturing unit

Vietnam Vaccine Joint Stock Company (VNVC) has begun construction on its 26,000 square meter factory building with an investment of VND2 trillion ($77.17 million). The new facility, with capacity of up to 100 million vaccine doses per year, represents a major advance in Vietnam's capability to produce and supply vaccines locally. The facility is anticipated to be completed by 2027 and will receive technology transfer from Sanofi, which will prioritise localisation of new and important vaccines. In addition to research and development facilities, animal laboratories, and production lines for vaccines and biological products using multiple technologies, the factory will house various sub-areas. A total of three lines including an isolator technology line and a filling line for injection pens will be installed in the beginning. Vaccine production lines have been designed for flexible conversion, making it possible to produce both mass vaccine production and focused vaccine production, which is crucial for responding to urgent public health needs, including new pandemics.

Singapore leads S$10 M national effort to tackle muscle-loss due to ageing

To tackle the growing threat of muscle loss in Singapore's ageing population, SingHealth Duke-NUS Academic Medical Centre will spearhead a S$10 million research initiative into sarcopenia, marking the country's first comprehensive, large-scale programme focused on this condition marked by loss of muscle mass and strength. Supported by the National Research Foundation, Singapore under the National Medical Research Council (NMRC) Research, Innovation and Enterprise 2025 Open Fund - Large Collaborative Grant (OF-LCG) programme and administered by the Singapore Ministry of Health through the NMRC Office, MOH Holdings Pte Ltd, the project, named MAGNET (Mechanistic Investigation and Clinical Innovation for Sarcopenia Diagnosis and Therapy), will position Singapore as a leader in sarcopenia research globally and is expected to bring critically needed innovations to how the condition is detected and treated, particularly among Asian patients. To date, over 400 patients with sarcopenia from Sengkang General Hospital have been recruited for the studies (including clinical evaluation), and their relevant biological samples (e.g. blood cells and muscle tissues) have been collected for investigations.

Lupin, Sino Universal ink license and supply agreement for Tiotropium DPI in China

Indian pharma major Lupin has signed a license and supply agreement with Sino Universal Pharmaceuticals (SUP), for the commercialisation of Tiotropium Dry Powder Inhaler (DPI), 18 mcg/capsule, in the Chinese market, for the treatment of chronic obstructive pulmonary disease (COPD). As per the agreement, SUP will obtain regulatory approvals for selling Tiotropium DPI in China, while Lupin will be the marketing authorisation holder and responsible for manufacturing of the product. Tiotropium DPI is known for its efficacy in improving lung function and quality of life for patients suffering from respiratory conditions. This partnership will enable Lupin to expand its footprint in China, ensuring that patients have timely access to innovative and high-quality healthcare solutions, considering the increasing prevalence of respiratory conditions.

Sanofi to accelerate development of new global vaccines in Abu Dhabi

The Department of Health – Abu Dhabi (DoH), the regulator of the healthcare sector in Abu Dhabi, has signed a Memorandum of Understanding (MoU) with Sanofi, a research and development-driven, AI-powered healthcare biopharma company. The collaboration will leverage the Emirate's health-tech ecosystem and advanced research infrastructure to drive the development of new global vaccines and strengthen regional capabilities in vaccine manufacturing. Both entities will work together to streamline regulatory processes, enhance manufacturing preparedness, and promote knowledge sharing between local and international experts. This partnership reflects Abu Dhabi's strategic goal to establish itself as a leading centre for bio- and pharmaceutical innovation and underscores the emirate's commitment to advancing proactive, technology-driven healthcare solutions. The Department and Sanofi will advance clinical research and development planning, optimise resource allocation and establish the foundational terms for funding and access. These efforts are designed to enhance healthcare resilience and sustainability across Abu Dhabi's healthcare sector and beyond, expanding access to quality care for patients locally and globally.

Serum Institute of India partners with DNDi to advance development of new dengue treatment

Serum Institute of India (SII), a part of Cyrus Poonawalla Group, and the not-for-profit medical research organisation Drugs for Neglected Diseases initiative (DNDi) have signed a Memorandum of Understanding (MoU) to accelerate the clinical development of a monoclonal antibody treatment for dengue that will be affordable and accessible in low- and middle-income countries (LMICs). Through this collaboration, both

SII and DNDi will develop a work plan to implement R&D, additional Phase III clinical trials, and access activities, along with a joint strategy to raise necessary funds and resources. Additionally, a joint project team will be formed to advance clinical trials, with the goal of registering and deploying the dengue monoclonal antibody in India and other dengue-endemic countries, provided the studies confirm its safety and efficacy. SII has already conducted pre-clinical studies and Phase I and II clinical trials that show the candidate (formerly VIS513) is safe and effective.

Samsung Biologics launches drug screening services, Samsung Organoids

South Korea-based Samsung Biologics, a leading contract development and manufacturing organisation (CDMO), has announced the launch of Samsung Organoids, advanced drug screening services to support clients in drug discovery and development. Organoids are emerging as a new research model due to their high similarity to live tissues and potential applications in biomarker discovery and drug efficacy prediction. Samsung Organoids support precision screening to predict patient responses, streamline preclinical development, and accelerate timelines toward investigational new drug (IND) filings through data-driven analysis of candidate molecules. With the launch, Samsung Biologics expands its business to include preclinical research, with service offerings spanning target discovery, lead selection, preclinical development, and clinical trial planning. Leveraging its expertise in development and manufacturing, the company will provide data-driven, multi-modal insights into the characteristics and mechanisms of candidate molecules.

Olympus announces full market release of AI-powered emphysema screening programme

Japan headquartered medtech firm Olympus Corp. has announced the full market release of its artificial intelligence (AI)-driven emphysema screening programme, SeleCT Screening. The SeleCT Screening AI platform, powered by 4DMedical, helps identify severe emphysema patients who may benefit from a clinically proven and minimally invasive procedure to improve lung function called bronchoscopic lung volume reduction (BLVR). SeleCT Screening automatically reviews existing chest computed tomography (CT) scans throughout a health system to help identify patients who may benefit from BLVR with endobronchial valves such as the Spiration Valve System. Physicians are notified if a potentially qualified patient is identified so that they can be contacted for further evaluation for the Spiration Valve. The Spiration Valve System includes an umbrella-shaped device that is placed in targeted airways of the lung during a short bronchoscopic procedure

ClavystBio and A*STAR partner to grow medtech ventures in Singapore

ClavystBio, a life sciences investor and venture builder established by Temasek, and the Agency for Science, Technology and Research (A*STAR), Singapore's lead public sector R&D agency, have signed a Memorandum of Understanding (MoU) to create and grow medtech ventures in Singapore. This partnership will support venture creation, product development, and commercialisation by bringing together ClavystBio and two national initiatives hosted by A*STAR, MedTech Catapult and the Diagnostics Development Hub (DxD Hub), along with A*STAR's broader medtech and venture creation capabilities. The partnership comes amid growing momentum in Singapore's biomedical landscape, with medtech output reaching S$20 billion in 2023. As Asia's medtech market is projected to grow to $225 billion (S$304 billion) by 2030, these efforts aim to better position Singapore-based innovations to scale and enter new markets. Over this two-year partnership, the parties will work towards the co-creation of new medtech ventures, investments into A*STAR affiliated companies, and fostering collaborations between A*STAR and ClavystBio's portfolio companies.

GenepoweRx and MGI Tech to accelerate AI-driven genomic solutions in personalised medicine

Indian startup GenepoweRx, a trailblazer in artificial intelligence (AI)-powered personalised medicine based on genomic insights, has announced a strategic collaboration with China-based MGI Tech Co. This partnership aims to revolutionise the landscape of predictive healthcare, precision medicine, and longevity science through cutting-edge sequencing and AI-powered analytics. With a shared vision to make personalised, preventive healthcare more accessible and effective, GenepoweRx and MGI will integrate their respective strengths in genomics, bioinformatics, and AI to deliver rapid, clinical-grade genomic services to individuals and institutions worldwide. By integrating MGI's advanced genomic technologies with GenepoweRx's innovative AI-driven analytics, both companies aim to not only strengthen GenepoweRx's genomic offerings but also empower healthcare providers and patients alike.

Gene Solutions, Shenzhen USK Bioscience to establish next-gen sequencing lab in Southern China

Vietnam-based startup Gene Solutions and Shenzhen USK Bioscience Co. (USKBio), a molecular diagnostics startup in China, have entered a strategic partnership through a Memorandum of Understanding (MoU). The landmark agreement paves the way for the establishment of a state-of-the-art next generation sequencing (NGS) laboratory in southern China, advancing localised oncology diagnostics. The collaboration will leverage USKBio's existing infrastructure, and Gene Solutions' advanced next-generation artificial intelligence (AI) and genomics capabilities to jointly establish a NGS laboratory. The lab will focus on accelerating access to early cancer detection and molecular residual disease (MRD) monitoring using AI-powered circulating tumour DNA (ctDNA) technologies, tailored to address the unique clinical needs of southern China's healthcare landscape. USKBio brings extensive expertise in Polymerase Chain Reaction (PCR)-based In Vitro Diagnostics (IVD) and Good Manufacturing Practice (GMP)-certified production capabilities.

Brain Navi achieves US FDA approval for neurosurgical robot NaoTrac

Brain Navi Biotechnology, a medical robotics company founded in 2015 in Taiwan by surgeon and serial entrepreneur Jerry Chen, has reached another major milestone. Following previous approvals from the Taiwan Food and Drug Administration (TFDA) and the CE Mark for Europe, Brain Navi has now received FDA 510(k) clearance for its stereotaxic guiding surgical device, NaoTrac, reinforcing its commitment to innovation, patient safety, and continuous improvement in the neurosurgical field. For Brain Navi, this is a significant step forward, opening the door to new high-potential markets while affirming the quality and reliability of NaoTrac, its flagship robotic system. This milestone not only expands global footprint but also validates the years of clinical research and development invested in the technology. The firm has received FDA 510(k) clearance, which confirms that NaoTrac is substantially equivalent in safety and effectiveness to legally marketed devices in the US. This recognition enables the startup to bring NaoTrac to US hospitals and surgical teams, helping them achieve even higher levels of precision and efficiency in the operating room and save more lives.

MarkHerz signs MoU with German university hospital for research on next-generation gene therapies

MarkHerz Inc., a South Korea-based biotechnology startup specialising in AAV-based gene therapies targeting cardiovascular and metabolic diseases, has signed a Memorandum of Understanding (MoU) with Klinikum rechts der Isar, the university hospital affiliated with the Technical University of Munich (TUM), Germany. The agreement aims to establish a broad-based collaboration on the joint research and development of next-generation gene therapies for ischemic heart and peripheral vascular diseases. This will center around MarkHerz's proprietary MAAV Platform, which enables the development of precision-targeted AAV (adeno associated virus) gene therapies, particularly its MRTF-A candidate. The collaboration will include preclinical and clinical trials, technology consulting, and the sharing of research infrastructure. MarkHerz's entry into Germany reflects a strategic initiative to complement Korea's increasingly regulated domestic environment by leveraging Europe's flexible clinical trial pathways, such as EMA's Early Access programmes and Investigator-Initiated Trials.

UltraGreen.ai acquires Perfusion Tech

UltraGreen.ai, a Singapore-headquartered leader in surgical imaging technology, has announced the acquisition of Perfusion Tech, a clinical software innovator focused on real-time perfusion quantification during surgical procedures. This strategic acquisition positions UltraGreen at the forefront of fluorescence-guided surgery (FGS) and opens a broader commercial pathway into perfusion assessment. By combining UltraGreen's fluorescence imaging products, its advanced data and imaging infrastructure with Perfusion Tech's validated clinical quantification engine, this creates a comprehensive surgical intelligence platform that transforms intraoperative imaging, delivering standardised, objective and reproducible perfusion assessments that drive safer, more precise surgical outcomes. This acquisition marks a significant milestone in the evolution not only for fluorescence-guided surgery but for how the startup is focusing on tissue viability across multiple clinical domains.

HekaBio teams up with Alfresa Holdings accelerating access to innovative therapies in Japan

HekaBio K.K. has announced the signing of a strategic partnership agreement with Alfresa Holdings Corporation, a leading pharmaceutical wholesaler group in Japan. As part of this agreement, Alfresa Holdings has also made a capital investment in HekaBio. The partnership aims to accelerate the commercialisation of innovative medical products in Japan. In recent years, Japan has implemented policy reforms to address the growing access gap, where innovative therapies

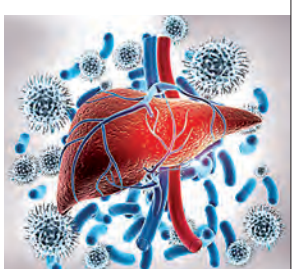
approved overseas are slow to come to the Japanese market. This partnership with Alfresa Group will enable the startup HekaBio to advance and expand its portfolio and impact, particularly in CNS and regenerative medicine where Alfresa Group has strengths in manufacturing and in sales, including various other aspects of sales-related operations across the supply chain. HekaBio and Alfresa Group aim to accelerate the introduction of high-impact, potential blockbuster therapies into the Japanese market, expanding treatment options for patients. The companies also plan to explore commercialisation strategies across the Asia-Pacific region and beyond.

CEPI signs new agreement with US Dept of Defense focusing on disease outbreaks

Norway-based Coalition for Epidemic Preparedness Innovations (CEPI) and the US Department of Defense, Joint Programme Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND), have signed a new agreement that will enable the two organisations to collaborate on projects that expand global defences against disease outbreaks. Under the terms of the Collaborative Research and Development Agreement (CRADA), CEPI and JPEO-CBRND will work together on projects of identified mutual interest and, where appropriate, take a collaborative approach to the development of medical countermeasures. This approach helps to accelerate the availability of potentially lifesaving medical countermeasures for global populations, including the US joint forces who are serving missions around the world, against emerging infectious diseases and to avoid duplication of efforts. The first agreed-upon project will support the development of a Nipah monoclonal antibody (MBP1F5), contributing to the missions of both organisations. JPEO-CBRND will transfer doses of a Nipah monoclonal antibody (MBP1F5), currently undergoing Phase 1 testing in the US with JPEO-CBRND, to CEPI for the conduct of a CEPI-funded Phase 1b/2a clinical trial in India and Bangladesh, two countries affected almost annually by Nipah virus outbreaks.

Joint action plans to tackle viral hepatitis in Africa

Considering the general decline in funding for research and development, Africa Centres for Disease Control and Prevention (Africa CDC), in collaboration with the World Hepatitis Alliance (WHA) and the African Viral Hepatitis Action Group (AVHAG), has developed a capacity-building programme for hepatitis elimination and advocacy. Burundi, Cameroon, Gabon, São Tomé and Príncipe, and Chad benefited from this high-impact empowerment programme, which aims to strengthen the role of affected populations and community groups as key drivers of advocacy, policy influence, and community engagement in the elimination of viral hepatitis in Africa. It recognises civil society organisations as crucial allies in the fight against disease, particularly in the prevention and control of hepatitis B and C. According to the latest report from the World Health Organization, Africa alone accounts for 63 per cent of new hepatitis B virus infections. What's more, fewer than 5 per cent of people with the virus are screened, and less than 1 per cent are receiving treatment. As for hepatitis C, although curable, only around 13 per cent of people carrying the virus are screened, with just 3 per cent receiving treatment.



Eastern Caribbean launches project to strengthen pandemic preparedness

A landmark initiative to boost pandemic preparedness and response in the Eastern Caribbean has been launched in Castries, Saint Lucia, bringing renewed focus to building resilient, integrated health systems that can better detect and respond to future health threats. The project, titled 'Strengthening Prevention, Preparedness and Response to Emerging Health Threats in the Eastern Caribbean', is funded by the Pandemic Fund and will benefit Antigua and Barbuda, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines. It is implemented through a partnership between the Pan American Health Organization/ World Health Organization (PAHO/WHO), the Food and Agriculture Organization (FAO), and the World Bank. By taking a One Health approach, which recognises the interconnectedness of human, animal, and environmental health, the project focuses on preventing outbreaks before they begin, detecting them early, and responding quickly and efficiently when they do occur.

UK to boost clinical trials under 10 Year Health Plan

Patients will receive the most cutting-edge treatments years earlier than planned under the government's 10 Year Health Plan, which will speed up clinical trials so the UK becomes a hotbed of innovation. Millions of people will now be able to search for and sign up to life-changing clinical trials, via the National Institute for Health and Care Research (NIHR) Be Part of Research service on the NHS App, allowing patients to browse and find the trials best suited to their interests and needs. Eventually the plan will see the NHS App automatically match patients with studies based on their own health data and interests, sending push notifications to your phone about relevant new trials to sign up to.

Global leaders unite to accelerate cervical cancer elimination efforts

Governments, donors, multilateral institutions, the private sector and partners have announced significant policy, programmatic and financial commitments to eliminate one of the most preventable cancers. At the 2nd Global Cervical Cancer Elimination Forum, hosted in Bali, Indonesia, from June 17 to 19, leaders announced a wave of new investments and policy pledges to expand access to HPV vaccination, screening and treatment, bringing the world closer to making cervical cancer the first cancer to ever be eliminated. The Global Strategy for the elimination of cervical cancer sets clear targets for 2030: 90 per cent of girls fully vaccinated with the HPV vaccine by age 15; 70 per cent of women screened with a high-performance test by age 35 and again at 45; and 90 per cent of women identified with cervical disease receiving appropriate treatment. Progress across all three pillars is essential to achieve and sustain elimination.

US FDA halts new clinical trials that export Americans' cells for genetic experiments

The US Food and Drug Administration (FDA) has announced an immediate review of new clinical trials that involve sending American citizens' living cells to China and other hostile countries for genetic engineering and subsequent infusion back into US patients, sometimes without their knowledge or consent. This action by the FDA follows mounting evidence that some of these trials failed to inform participants about the international transfer and manipulation of their biological material and may have exposed Americans' sensitive genetic data to misuse by foreign governments including adversaries. The agency is also working closely with the National Institutes of Health (NIH) to ensure that no federally funded research is compromised by these practices. Additional enforcement and policy measures could be forthcoming.

WHO issues first global guideline to improve pregnancy care for women with sickle cell disease

The World Health Organization (WHO) has released its first-ever global guideline on the management of sickle cell disease (SCD) during pregnancy, addressing a critical and growing health challenge that can have life-threatening consequences for both women and babies. Health risks associated with SCD intensify during pregnancy, due to heightened demands on the body's oxygen and nutrient supply. Women with SCD face a 4- to 11-fold higher likelihood of maternal death than those without. They are more likely to experience obstetric complications like pre-eclampsia, while their babies are at greater risk of stillbirth or being born early or small. The guideline includes over 20 recommendations spanning folic acid and iron supplementation, including adjustments for malaria-endemic areas; management of sickle cell crises and pain relief; prevention of infections and blood clots; use of prophylactic blood transfusions; and additional monitoring of the woman and the baby's health throughout pregnancy.

WHO calls for global expansion of midwifery models of care

The World Health Organization (WHO) has released new guidance to help countries adopt and expand midwifery models of care - where midwives serve as the main care provider for women and babies throughout pregnancy, childbirth, and the postnatal period. The guidance promotes strong communication and partnership between women and midwives, and offers proven health benefits for both women and their babies. Women who received care from trusted midwives are statistically more likely to experience healthy vaginal births and report higher satisfaction with the services they receive. Despite progress, maternal and newborn deaths remain unacceptably high, particularly in low-income and fragile settings. Recent modelling suggests that universal access to skilled midwives could prevent over 60 per cent of these deaths, amounting to 4.3 million lives saved annually by 2035.

WHO outlines recommendations to protect infants against RSV

The World Health Organization (WHO) has published its first-ever position paper on immunisation products to protect infants against respiratory syncytial virus (RSV) – the leading cause of acute lower respiratory infections in children globally. Published in the Weekly Epidemiological Record (WER), the position paper outlines WHO recommendations for two immunisation products: a maternal vaccine RSVpreF that can be given to pregnant women in their third trimester to protect their infant and a long-acting monoclonal antibody nirsevimab that can be administered to infants from birth, just before or during the RSV season. WHO recommends that infants receive a single dose of nirsevimab right after birth or before being discharged from a birthing facility. If not administered at birth, the monoclonal antibody can be given during the baby's first health visit. Both products were recommended by the Strategic Advisory Group of Experts on Immunisation (SAGE) for global implementation in September 2024. In addition, the maternal vaccine received WHO prequalification in March 2025, allowing it to be purchased by UN agencies.

Medical Advances Soar With APAC'S CLINICAL TRIAL GROWTH

It's universally acknowledged that Asia-Pacific (APAC) is a hotbed for clinical trials, with multiple reports confirming that it is the only region in the world to have seen a consistent surge in clinical trial activity. In the last five years, China, India, Australia, Japan, South Korea, and Singapore emerged as key pillars of APAC's growing clinical trial ecosystem. Together, these six countries accounted for nearly 40,000 trials (39,843* in total) from 2020 to mid-2025.

A comparative analysis of six major countries—India, Australia, China, South Korea, Japan, and Singapore shows that China leads in the absolute number of trials (25,329), followed by South Korea (5,059), Australia (3,821), Japan (2,541), India (1,914), and Singapore (1,179). While each country brings unique strengths to the region's clinical development ecosystem, industry sponsorship dominates overall, with particularly high shares in Japan (93 per cent), Australia (83 per cent), and South Korea (60 per cent). In contrast, India and China have a more academically driven profile, with public institutions and hospitals sponsoring the majority of trials. Singapore is more balanced (47 per cent industry / 53 per cent academia), but again, most industry trials are from global companies, not domestic biopharma.

In a phase-wise analysis, Australia and South Korea show a clear focus on early-to-mid-phase research, with over 60 per cent of trials in phase 1 or phase 2, reflecting their role in first-in-human, dose-ranging, and proof-of-concept studies. Japan and India are more concentrated in phase 3 trials, with Japan conducting 1,116 and India 506, which together account for nearly half of all trials in each country. China presents a strong early- and mid-phase pipeline with 4,177 phase 1 and 5,808 phase 2 trials, along with 6,684 non-phased studies that likely include real-world, traditional medicine, or device-focused research. Singapore, though smaller in overall volume, follows a mid- to late-stage pattern with 200 phase 2 and 260 phase 3 trials.

Across the region, oncology dominates clinical trial activity, with China leading at 11,111 cancer trials, accounting for 44 per cent of its total. Australia follows with 1,437 oncology studies, around 38 per cent of its trial base. South Korea (1,708), Japan (967), and India (1,207) also place cancer at the forefront. Singapore, despite lower volumes, maintains oncology among its top areas of research. Other key indications include neurological diseases, with high trial numbers in China (2,785), South Korea (531), and Australia (517); cardiovascular diseases, with notable activity in China (3,055), South Korea (741), and India (161); and respiratory illnesses, which saw strong focus in China (2,885), South Korea (627), and Australia (563). Infectious diseases remain prominent in China (816), India (264), and Singapore, influenced by pandemic-related efforts. Diabetes and endocrine disorders featured less prominently but registered significant numbers in China (664) and South Korea (212). Let's look at each country in detail.

(*The data presented here is extracted from ClinicalTrials.gov and excludes studies funded by the NIH and other U.S. federal agencies. The period under review spans from January 1, 2020, to June 1, 2025.)

India

India's clinical trial landscape comprised a total of 1,914 studies between 2020 and 2025. Industry-sponsored trials accounted for 898 studies, while academic institutions, individuals, and other organisations led 1,133. It is worth noting that among the industry-sponsored studies, more than 50 per cent were backed by foreign sponsors.

The largest share of studies across this period were phase 3 trials (506), highlighting India's strength in late-stage development, especially in generics, biosimilars, and vaccines. Early-phase trials remained modest, with just 2 classified as

List of clinical trials in APAC countries*

*(From January 1, 2020, to June 1, 2025)

Country	Total Studies (2020–2025)	Industry Sponsored	Academic/Others Sponsored	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
India	1914	898	1133	2	96	184	506	115	685
Australia	3821	3169	939	28	1173	1176	1100	62	463
South Korea	5059	3036	2309	4	955	990	1110	231	1217
Japan	2541	2356	318	4	482	644	1116	41	103
China	25329	7771	19146	655	4177	5808	2579	1169	6684
Singapore	1,180	552	719	4	133	200	260	23	436

Source: clinicaltrials.gov

early-phase 1 and 96 as phase 1, highlighting the country's continued positioning as a trial execution hub rather than a site for first-in-human studies. Phase 2 trials numbered 184, and phase 4 trials stood at 115. A significant portion, 685 studies, were marked 'not applicable' suggesting a large presence of observational research.

Year-on-year, 2021 saw the highest number of trials (380), likely driven by COVID-19-related activity, with phase 3 studies dominating throughout all years. Industry participation peaked in 2022 (187 trials), while academia-led research steadily outpaced industry in every year. In 2023 and 2024, while the number of new trials slightly declined, the distribution across phases remained consistent, and the share of non-phased studies grew. In 2025 so far, the number of trials is lower (124), with industry accounting for just 45 studies and over 45 per cent of trials falling under 'not applicable.'

Indication wise, oncology dominated India's clinical trial landscape with 1,207 studies. Infectious diseases followed with 264 trials, while neurology (229), cardiovascular (161), and respiratory (161) were other key focus areas. Overall, India's trial profile in these five years reflects a stable phase 3 strength, rising academic involvement, and underutilised early-phase potential.

No of clinical trials in India*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2020	653	552	154	2	197	197	198	9	63
2021	745	612	180	6	210	238	202	6	99
2022	726	596	192	3	232	238	220	16	74
2023	676	561	170	4	196	209	208	10	88
2024	690	591	146	7	234	196	202	11	80
2025	276	210	88	6	90	72	59	10	53

*(From January 1, 2020, to June 1, 2025)

Australia

Australia's clinical research landscape between January 2020 and June 2025 highlights its position as a global hub for early-phase, industry-led trials. A total of 3,821 trials were initiated during this period. Of these, 3,169 trials, or 83 per cent, were industry-sponsored. Nearly 90 per cent of these industry sponsors were foreign companies. The remaining 939 trials were conducted by academic institutions, hospitals, or independent investigators, indicating steady academic engagement, albeit at a lower proportion compared to countries like India and China.

Clinical trial activity in Australia peaked in 2021 with 745 trials, then stabilised across 2022–2024, averaging around 700 annually. In 2025, 276 trials have already been initiated, indicating a steady trend.

By the trial phase, Australia continued to solidify its standing in early-stage research, with 1,173 phase 1 and 1,176 phase 2 trials conducted, together comprising over 60 per cent of all registered studies. Phase 3 trials remained strong (1,100), underscoring Australia's growing role in late-stage multicentre studies, while phase 4 trials were relatively limited (62), consistent with its focus on pre-approval testing rather than post-marketing surveillance.

Therapeutically, oncology dominated, accounting for 1,437 trials, or nearly 38 per cent of all studies. Other high-focus areas included respiratory (563 trials), neurological (517), cardiovascular (405), and infectious diseases (174).

Australia's early-phase strengths, streamlined approvals, robust infrastructure, and favourable tax incentives ensure that it remains a critical node in the global clinical trial ecosystem.

No of clinical trials in Australia*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2020	653	552	154	2	197	197	198	9	63
2021	745	612	180	6	210	238	202	6	99
2022	726	596	192	3	232	238	220	16	74
2023	676	561	170	4	196	209	208	10	88
2024	690	591	146	7	234	196	202	11	80
2025	276	210	88	6	90	72	59	10	53

*(From January 1, 2020, to June 1, 2025)

China

China's clinical research activity between 2020 and 2025 reflects its emergence as a major global player in clinical development. During this period, a total of 25,329 clinical trials were initiated, highlighting the scale and ambition of China's R&D ecosystem., Majority of these trials—over 75 per cent (19,146 studies)—were sponsored by academic institutions, hospitals, or other non-industry organisations, highlighting the significant role of government-backed research centres, public hospitals, and universities in advancing clinical science. That said, 7,771 trials were led by industry (largely domestic companies,) a number that continues to grow as more domestic biopharma companies shift from generics to innovative R&D.

China's clinical trial activity from 2020 to 2025 is heavily concentrated in early and mid-stage development. Phase 1 (4,177) and phase 2 (5,808) trials together make up nearly 10,000 studies, reflecting a strong pipeline of investigational therapies. Phase 3 trials (2,579) show China's rising participation in late-stage and pivotal studies. The country also recorded 1,169 phase 4 trials and 6,684 studies marked not applicable, indicating a broad base of observational research, device studies, traditional medicine, and post-marketing surveillance. Early Phase 1 trials (655) point to growing, but still developing, capacity for first-in-human research.

Clinical trial activity in China rose steadily from 2020 to 2024, peaking at 5,433 trials in 2024, driven by ongoing NMPA reforms, and government efforts to position China as a hub for innovation and global multicentre studies. In 2025 2,020 trials have already been launched, signalling continued momentum.

Therapeutically, China's focus is broadly aligned with its shifting disease burden. Oncology leads overwhelmingly, with 11,111 cancer trials, making up nearly 44 per cent of all studies—driven by an urgent need for more effective treatments, local innovation in cell therapies, and the globalisation of cancer R&D. Other key indications include Cardiovascular (3,055), respiratory (2,885), and neurological disorders (2,785), infectious diseases (816) and diabetes (664).

Chinese pharmaceutical companies are rapidly expanding their clinical development footprint beyond domestic borders, signalling a shift toward global innovation.

"In recent years, dozens of China-based biotech and pharma companies are conducting clinical trials within Asia-Pacific. In 2024, about 136 clinical trials sponsored by Chinese pharmaceutical companies were conducted mostly in North America, Australia, and Asia outside of China. The R&D areas of Chinese pharmaceuticals are changing from me-too or me-better to innovative new drugs. Global standards of study design, endpoint assessments, clinical operation, statistical analysis, and data management are widely applied in local trials. NMPA also published lots of guidance and working procedures to shorten the study start-up and drug approval timeline. An increasing number of Chinese sites and investigators have experience conducting MRCTs to support new drug global marketing applications," said ***Masayuki Takahashi, Director, Asia Business Office and Project Management, Linical.***

No of clinical trials in China*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2020	3,480	1,024	2,692	83	542	787	380	160	829
2021	4,415	1,520	3,219	90	749	1,022	494	267	1,042
2022	4,667	1,440	3,520	108	782	1,050	430	224	1,197
2023	5,314	1,643	4,017	138	876	1,169	528	237	1,452
2024	5,433	1,542	4,171	167	859	1,253	533	210	1,579
2025	690	210	480	6	90	72	59	10	53

*(From January 1, 2020, to June 1, 2025)

Key Insights:

- China leads on volume and diversity, driven by academic strength and rapid regulatory reform. It is emerging as a full-spectrum R&D hub
- Australia leads in early-phase industry trials, benefiting from its policy incentives and efficient trial start-up timelines
- India is a dominant phase 3 hub, with rising domestic innovation (e.g., CAR-T and ADCs) but limited early-phase output
- South Korea blends balanced academic-industry contributions with growing prominence in oncology and chronic disease trials
- Japan, while heavily industry-led, shows moderate early-phase activity but remains crucial in late-stage development due to its strong regulatory system and patient safety infrastructure
- Singapore, though smaller in scale, plays a strategic role in multicentre trials

South Korea

South Korea's clinical trial activity between January 2020 and June 2025 reflects a steadily expanding ecosystem. A total of 5,059 clinical trials were initiated—60 per cent (3,036) were industry-sponsored and 40 per cent (2,023) came from academic institutions, hospitals, and research centres. Among industry trials, 56.8 per cent were backed by foreign sponsors and 43.2 per cent by domestic ones, reflecting a near-even split.

The country continues to play an increasingly important role in early- and mid-stage development, with 955 phase 1 trials and 990 phase 2 trials, indicating its attractiveness for both first-in-human and proof-of-concept studies. A significant number of phase 3 trials (1,110) and over 230 phase 4 trials also underline its capabilities in late-stage and post-marketing studies.

South Korea saw peak trial activity in 2021, driven by both COVID-19 research and a strong surge in early-phase oncology trials. Activity stabilised around 950–1,000 trials annually in subsequent years.

Oncology remains the most researched area by far, with 1,708 trials, followed by cardiovascular (741), respiratory (627), neurological (531).

South Korea continues to punch above its weight in global clinical research, both in volume and sponsor engagement.

"In terms of global trial activity, Korea ranked 4th worldwide in clinical trial registrations in 2023, with Seoul ranking 1st among cities. For pharma-sponsored global trials, Korea held the 5th position in 2022–2023, and in 2024, it ranked 6th globally with a market share of 3.46 per cent, following the United States, China, Australia, Spain, and Germany," said Takahashi.

No of clinical trials in Korea*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2020	1022	568	504	1	179	202	216	47	260
2021	1138	666	529	2	230	239	224	48	272
2022	996	594	473	1	189	188	212	50	233
2023	945	581	407	0	166	180	212	46	245
2024	731	490	287	0	138	139	204	27	145
2025	228	139	108	0	53	42	44	13	62

*(From January 1, 2020, to June 1, 2025)

Japan

Japan's clinical trials landscape between January 2020 and June 2025 reflects a stable, industry-led ecosystem that continues to attract multinational pharmaceutical companies. During this period, a total of 2,541 clinical trials were initiated. Of these, 2,356 trials, or 93 per cent, were sponsored by industry. Most of these were led by multinational corporations.

Only 318 trials were sponsored by academic

institutions, hospitals, or other non-industry organisations, underscoring the heavily commercial nature of clinical research in the country and the relatively limited role of investigator-initiated trials compared to peers like South Korea or India.

Japan continues to serve as a key site for late-stage clinical development. Phase 3 trials (1,116) made up nearly 44 per cent of all activity, reflecting the country's importance in confirmatory studies and regional registration strategies. Phase 1 and 2 trials accounted for 482 and 644 studies, respectively, indicating a moderate but steady pipeline of early-phase innovation. Phase 4 trials (41) remained relatively limited, aligning with Japan's focus on pre-approval evidence generation over post-marketing research.

Trial volumes remained consistent year over year, peaking in 2021 with 566 trials, followed by slightly lower but stable activity from 2022 to 2024, with an average of around 450 trials annually.

Therapeutically, oncology dominates, with 967 cancer trials, making up more than one-third of the total. Other focus areas include respiratory (416 trials), cardiovascular (306), and neurological disorders (277)—each aligned with Japan's ageing population and shifting disease burden.

No of clinical trials in Japan*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2020	491	447	74	1	107	128	203	5	19
2021	566	531	61	2	118	146	241	10	24
2022	457	429	51	0	76	105	224	8	16
2023	450	417	55	0	70	108	206	6	22
2024	432	405	50	1	85	113	185	6	13
2025	147	129	27	0	26	44	58	6	9

*(From January 1, 2020, to June 1, 2025)

Singapore

Singapore's clinical trial ecosystem from January 2020 to June 2025 reflects its role as a strategically positioned, innovation-friendly hub. A total of 1,179 clinical trials were initiated during this period, with industry sponsors accounting for 551 trials (47 per cent) and academic institutions, hospitals, and research organisations contributing 718 trials (53 per cent). While this suggests a balanced ecosystem on paper, the majority of industry-led trials were driven by multinational companies.

By trial phase, the country's research leaned moderately toward mid- and late-stage development, with 133 phase 1 trials, 200 phase 2, and 260 phase 3 studies. Phase 4 trials remained low at just 22, while a significant number—436 trials were marked as 'Not Applicable,' likely representing observational studies, device trials, or early feasibility studies outside standard classification.

On a year-wise basis, trial volume remained stable, averaging around 220 trials annually, with a slight dip in 2024 (179 trials). The peak came in 2021 (276 trials), coinciding with heightened global research activity during the COVID-19 pandemic. Overall, Singapore remains a key contributor to global drug development.

No of clinical trials in Singapore*

Year	Total	Industry	Academic /Others	Early Phase 1	Phase 1	Phase 2	Phase 3	Phase 4	Not Applicable
2025	63	23	45	1	7	10	9	1	27
2024	179	78	115	0	10	27	43	1	78
2023	202	99	118	0	19	33	57	1	80
2022	243	117	141	2	36	44	42	6	98
2021	276	133	166	0	36	49	50	9	97
2020	216	101	133	1	25	37	59	4	56

*(From January 1, 2020, to June 1, 2025)

Addressing APAC trial challenges

Conducting clinical trials is inherently complex, and in the Asia-Pacific region, these challenges are compounded by the diversity of regulatory frameworks, healthcare systems, and cultural landscapes. Navigating this complexity requires deep local knowledge, strategic coordination, and adaptive operational models.

"APAC countries have varying regulatory

Facts on APAC Clinical Trials Market

The Asia Pacific (APAC) clinical trials market size was estimated at $15.9 billion in 2023 and it is projected to grow at a CAGR of 7.3 per cent from 2024 to 2030. This projected growth can be attributed to various aspects, such as the shift of biopharmaceutical companies from developed countries to other regions like APAC, disease variations in developing economies, and government support in multiple countries. In addition, factors such as the adoption of new technology in clinical research, the shifting trend towards personalised medicine, and the increasing prevalence of chronic diseases are further expected to propel the market growth. In 2023, the clinical trials market in APAC accounted for a 19.7 per cent share of the global clinical trials market revenue. Many biopharmaceutical companies are shifting their clinical trial businesses from developed countries to regions like APAC, owing to rising costs associated with clinical trials.

- The APAC clinical trials support services market generated $4,871.8 million in 2024 and is projected to grow at a CAGR of 8.7 per cent from 2025 to 2030
- The APAC clinical trial supplies market is expected to reach $ 846.5 million by 2030, with a CAGR of 7.7 per cent from 2025 to 2030.
- The rare disease clinical trials market in APAC is expected to reach $3,858.2 million by 2030, with a CAGR of 8.4 per cent from 2025 to 2030.

Source: Grand View Research

requirements and startup timelines, which can complicate trial planning," said ***Dr Yooni Kim, Managing Director - Asia Pacific, Novotech.*** She added, "Beyond formal regulations, understanding the cultural and institutional nuances of each country is essential."

This becomes particularly important when addressing broader operational challenges in countries such as China. "The challenges include meeting China RA submission dossier requirements, adapting study plans to Chinese clinical practice, selecting the best possible sites based on specific demographic and epidemiological characteristics, managing linguistic and cultural aspects, fostering effective communication between all parties involved in the project (sponsor, investigators, site's staff, etc.), data management being aligned with international standards, and maintaining interaction with local regulatory authorities," said Takahashi.

Some of the other challenges in conducting clinical trials across APAC include streamlining contract negotiations and ensuring data quality and participant recruitment. Contracting processes can become bottlenecks due to site-specific legal requirements and lengthy review procedures, often delaying study startup.

"While APAC offers one of the largest and most diverse ethnic populations in the world, some sponsors face challenges in obtaining consistently high-quality data in certain countries," said Dr Kim. Addressing this requires strong local oversight, active site engagement, and standardised operational practices across trial locations to ensure consistency and reliability.

Takahashi agrees, "In some countries, for example, in Korea, it can sometimes be challenging to find and enroll patients, especially for high-demand indications like cancer. To address this, sponsors and CROs engage patient communities and utilise online recruitment platforms to reach a broader population."

Finally, building and retaining skilled clinical trial talent is essential to the long-term success of research across the Asia-Pacific region. Workforce capacity and capability remain key determinants of trial quality and execution. Addressing this requires sustained investment in training, professional development, and partnerships with academic and research institutions to ensure a robust and future-ready talent pipeline.

Over the recent years, the APAC region has undergone a significant transformation in its clinical research landscape. This is driven by regulatory reforms, growing academic–industry collaboration, and rising domestic innovation. From first-in-human studies to multi-regional pivotal trials, the region is now a key engine of global clinical development.

"The demand for more sophisticated trials, including early-phase studies and advanced therapies, is catalysing infrastructure upgrades across APAC. Asia-Pacific countries are investing heavily in the infrastructure and talent needed to support these modalities. Many sites now feature state-of-the-art laboratories, biomanufacturing facilities, and specialised teams trained in cutting-edge research. This positions the region as a competitive and attractive destination for global sponsors pursuing innovative therapeutic solutions. As a result, APAC is no longer seen as a secondary or backup region but as a strategic hub for global clinical development," concludes Dr Kim. BS

Ayesha Siddiqui

Taiwan's biotech gathers momentum

Leader: Backed by coordinated efforts from both government and industry, Taiwan's biotechnology sector is expanding steadily, with revenues reaching approximately $23.3 billion in 2023. The industry is positioning itself as an important player in the global biotech value chain. But what will it take for Taiwan to grow into a $32 billion biotech economy? Let's find out.

Biomedicine is a key focus under Taiwan's '5+2' Innovative Industries Plan, with the government aiming to establish the country as a leading hub for biomedical research and development in the Asia-Pacific region. Taiwan has reaffirmed its commitment to biotechnology as a strategic industry for 2024 and 2025, introducing new legislation and increasing funding to support growth.

In August 2024, Premier Cho Jung-tai announced a comprehensive set of biotech policies. The country also approved the Regenerative Medicine Act and related product regulations, aimed at advancing the development of cutting-edge therapies. The government also increased its budget for 2025, allocating NT$146.6 billion (approximately $4.6 billion) for technology, marking a 14.9 per cent increase. The funding will support AI-driven medical research and development, as well as workforce training across the Education, Economic, and Science ministries.

Taiwan aims to replicate its semiconductor success in the biotech sector, and a key step in that direction was the launch of the Taiwan Bio-Manufacturing Corporation (TBMC) in May 2023. Modelled after Taiwan Semiconductor Manufacturing Company (TSMC), the government holds a 40 per cent stake in TBMC, underscoring its strategic importance. While biotech has long been identified as a priority sector for Taiwan, its capital-intensive nature and long development timelines have made sustained government and consortium support essential.

The experience during the COVID-19 pandemic, when Taiwan faced delays in accessing mRNA vaccines due to limited domestic production capacity, highlighted the need for a strong local biomanufacturing ecosystem. The ability to rapidly produce advanced biologics through Contract Development and Manufacturing Organisation (CDMO) services is now seen as central to national health security. TBMC, formed in collaboration with the Development Center for Biotechnology (DCB) and the Industrial Technology Research Institute (ITRI), focuses on advanced platforms such as viral vectors, cell therapies, and protein technologies. Equipped with technologies like Raman spectroscopy and automated cell culturing systems, TBMC is positioning itself as Asia's first Pharma 4.0 CDMO. The goal is to deliver high-quality biologic medicines and secure Taiwan's place in the global biomanufacturing value chain.

As of 2022, 172 companies were officially recognised by the Ministry of Economic Affairs (MOEA) as biotech firms in Taiwan. Their work spans diverse areas, including gene therapy and vaccines for HIV and dengue. Several of these companies are also listed on international stock exchanges, reflecting Taiwan's expanding presence in the global biotech industry.

"Taiwan's biotech industry stands at the

Top biotech companies in Taiwan

- Oneness Biotech Co., Ltd.
- Center Laboratories, Inc.
- TaiMed Biologics Inc.
- Medigen Vaccine Biologics Corporation
- Microbio Co., Ltd.
- Ever Supreme Bio Technology Co., Ltd.
- ScinoPharm Taiwan, Ltd.
- PharmaEngine, Inc.
- OBI Pharma, Inc.
- TaiGen Biopharmaceuticals Holdings Limited

Source: StockViz

forefront of innovation in Asia, with strong government support, advanced infrastructure, and a growing international presence," said ***Dr Wallace Lin, Secretary General, Taiwan Bio Industry Organization (Taiwan BIO) and Vice Chair, International Council of Biotechnology Associations (ICBA).***

Where Taiwan fits in the global biotech value chain

Taiwan's domestic biotech industry has grown leaps and bounds in recent years, but where does the country truly stand in the global biotech value chain?

"Taiwan plays an important role in the global biotech value chain. For example, there are many CDMO services focused on cell and gene therapies, and also those that are AI driven diagnostics and Bio-tools. It's pretty dynamic in Taiwan, allowing for impact to the global biotech value chain in terms of innovation and the IP generation. I would say that Taiwan is strong in innovation and manufacturing. Taiwan has already exported a significant amount of biotech products, including our own. We are well positioned as a leader in the entire biotech value chain in terms of export readiness," said ***Dr Jung-Chi Liao, CEO of Syncell,*** a life science tools company revolutionising proteome and biomarker discovery.

"Taiwan occupies a rising and strategically significant position in the global biotech value chain, particularly in the convergence of digital health, chronic disease management, and real-world data applications. While traditionally not a hub for large-molecule pharmaceutical innovation, Taiwan has carved out a competitive niche in scaling health technologies, piloting digital therapeutic models, and enabling rapid public-private collaboration," said ***Ed Deng, Co-founder and CEO of Health2Sync*** that provides a comprehensive health management platform, enabling patients to connect with family, friends, and care providers.

Taiwan's strategic focus on digital healthcare has been formally integrated into national industrial policy. This digital push aligns with Taiwan's broader momentum in biotech, as the country steadily strengthens its role in the global value chain. A growing number of Taiwan-developed products are gaining international regulatory approval. In March 2024, Formosa Pharmaceuticals received US FDA approval for APP13007, a nanotech-based eye drop and the first new ophthalmic steroid approved in over 15 years. In oncology, OBI Pharma secured FDA orphan-drug designation in August 2024 for its Trop2-targeting antibody-drug conjugate, OBI-992. Taiwan also marked a milestone with the world's first HLA-G targeted exosome therapy for cancer entering US clinical trials in June 2025.

"In addition to the global new drug development, Taiwan has a vibrant innovation ecosystem, with a strong pipeline in AI-driven healthcare, regenerative medicine, and precision medicine. Taiwanese companies and research institutes regularly showcase over 50 new technologies at major international conventions, reflecting a robust capacity for innovation and R&D. The country's focus on AI integration, synthetic biology, and advanced diagnostics has accelerated drug discovery and improved healthcare management," said Dr Lin.

He added, "In addition to the above-mentioned global new drugs and innovative medical devices with IP's, Taiwan's biotech sector benefits from solid intellectual property protection and enforcement, supported by transparent legal frameworks and government incentives. The country's clinical trial capabilities and translational research infrastructure facilitate the generation and protection of new IP, positioning Taiwan as a credible partner for global pharmaceutical development."

An increasing number of biotech companies are also entering international markets. For example, JelloX Biotech Inc., a Taiwan-based cancer pathology startup, recently announced plans to open a lab in the US. Bora Biologics, a CDMO, also expanded its manufacturing footprint in the US.

Taiwan is also expanding its regional biotech ties. It is exploring new collaborations with India

in biotech and pharma. In Japan, Taiwan's BPIPO and DCB joined LINK-J and FIRM to host the first Regenerative Medicine Investment Forum in Tokyo. At AusBiotech 2024, Taiwan and Australia strengthened their partnership to advance biotech innovation across the region.

Role of biotech parks

Taiwan's biotech ecosystem includes key parks such as Ankang Biotechnology Park, Nankang Biotech Plaza, the National Biotechnology Research Park (NBRP), Hsinchu Science Park, Hsinchu Biomedical Science Park, Southern Taiwan Science Park, Taiwan Orchid Plantation, and Pingtung Agricultural Biotechnology Park. In 2023, Taipei Bioinnovation Park opened in Nangang with lab space, pilot production units, and an incubator for over 100 companies.

"Besides a supportive capital market in Taiwan to biotech sectors, the government policies, including biotech parks are key supporting factors. Biotech is a national strategic industry, supported by favorable laws such as the Biotech & New Drug Development Act. Recent regulatory amendments have improved the business and legal environment, laying the groundwork for sector growth," said Dr Lin.

These parks serve as innovation hubs, foster collaboration, accelerate R&D timelines, and attract leading foreign companies and research teams to Taiwan.

"Taiwan is very advanced in terms of the government investing in biotech startups. The government pushes many important policies with biotech as a key of the focus over the course of the last 15 years. Bioparks like National Biopark, Biotech Research Park, or Hsinchu Biomedical Park or Taipei Biopark are accelerators and incubators of innovation, driving the startup energy in Taiwan," said Liao.

He further added, "In terms of international collaboration, I think that many bioparks, especially MBRP, are helping catalyse this but there is more that can be done in terms of connecting with global experts and global venture capital sources."

Bridging the Gaps

By 2025, the country aims to develop 20 new drugs, bring 80 high-value medical devices to market, and grow its biomedicine industry into a trillion-NT-dollar sector, or around $32 billion.

While progress is visible, deeper integration with global biotech networks remains a key challenge. As Liao puts it, "The global connection between the biotech industry in Taiwan and the rest of the world is relatively weaker than in some other industries (like the semiconductor industry). I see that as a big opportunity for Taiwan—to better integrate with global markets, innovators. Many of the venture capitalists in other countries may not know the unique strengths of companies in Taiwan."

Access to capital and stronger corporate linkages are also areas that need attention. ***Cole Wu, Co-Founder, Coherence Bio*** observed, "Where Taiwan still lags is capital and deep corporate ties. Early-stage checks remain rare and thin, and strategic investment or M&A activity inside Taiwan is still the exception rather than the rule. Embedding multinationals earlier—e.g. via cross-border seed funds, year-round partnering circuits, and incentives for foreign CVCs—would give founders the oxygen and networks needed to turn fast prototypes into export-ready platforms." Coherence Bio accelerates AI-driven drug discovery with a programmable, modular benchtop automation system.

Attracting and retaining international talent especially in AI, advanced biologics etc. remains a priority. Building cross-disciplinary teams that are equipped for global engagement is essential.

"Rapid advances in mRNA, gene therapy, and AI diagnostics outpace existing regulatory frameworks. Updated, agile regulations and harmonization with global standards are expected to facilitate product approvals and market entry," said Dr Lin.

Talent development will also be critical in areas beyond research. As Liao pointed out, "Taiwan is strong in manufacturing, but perhaps there are still opportunities to develop the type of talent pharmaceutical and biotech companies need to thrive – particularly in global regulatory and business development functions – which are needed to connect with larger pharma companies or to enter new markets. Taiwan also does not have a very notable brand presence so it becomes even more important to build strong global sales and marketing teams."

Already halfway through 2025, Taiwan is making steady progress toward its biotech goals. By addressing talent, regulatory, and scale-related challenges, and deepening global partnerships, Taiwan is well-positioned to become a leading force in the global biotech value chain. This is crucial to reaching its target of one trillion NTD, or around $32 billion. Achieving this would not only mark a national milestone but also set a benchmark for other countries looking to strengthen their biotech sectors. BS

Ayesha Siddiqui

Japan's strategic medtech alignment with India

Given Japan's ageing population and the increasing number of patients with chronic and lifestyle diseases, Japan's market for medical devices continues to be among the world's largest. According to reports, Japan is the fourth-largest producer of medical technology (medtech) in terms of revenue, following behind the United States, China, and Germany. However, there is a limit to the growth of sales of medical device companies within the Japanese market only, thereby necessitating an extension of sales through global expansion, with India emerging as a key market. Let's explore the growing cross-collaboration and investment by the Japanese medtech companies within the Indian market, to strengthen their leadership position.

Japan has one of the highest life expectancies in the world, with over 28 per cent of its population being 65 years or older. And this demographic shift is driving a greater demand for medical devices, as older individuals typically require more healthcare services, including monitoring and treatment equipment. According to the Japan Ministry of Internal Affairs, the number of people aged 65 and older is projected to reach about 36 million by 2040, significantly increasing the demand for an array of medical devices.

Based on this current scenario, market analysts estimate that the medical devices market in Japan, encompassing a diverse range of products including medical equipment for chronic conditions management in healthcare systems and home care settings, drug delivery devices, diagnostic devices, invasive devices, and electronic medical devices, is expected to grow from $21.44 billion in 2024 to $45.2 billion by 2035.

Although Japan boasts high medical standards and manufacturing technology, making it an environment with sustained potential to develop medical devices, there is a limit to the growth of sales of medical device companies within the Japanese market only, thereby necessitating an extension of sales through global expansion. While the US market is regarded as most lucrative for global expansion and economic returns, the Indian market is gradually emerging as a strong field for the Japanese medtech companies to invest into.

And a key reason behind this observation might lie within the recent assessment by the International Monetary Fund (IMF), in its World Economic Outlook (WEO) report released earlier this year, pointing out that India is expected to be the fourth largest economy in the world, surpassing Japan by the end of 2025. Therefore, strategic partnerships between the medical technology players in both countries can prove to be a win-win situation for the entire industry.

Capturing the right beat in India

Backed by rising bilateral confidence and demand for healthcare innovation, India is emerging as a strategic hub for Japanese companies aiming to scale in emerging markets. As of 2024, over 1,450 Japanese companies operate in India; with the medtech sector right now occupying a small part of it.

Although the journey of Japanese medtech players started late in India (in the year 2000), as compared to the Western counterparts, the pace is now picking up with more companies opening their commercial presence within the Indian market, namely Terumo, Olympus, Nipro, Canon, Tosoh, Pentax, Asahi, Omron, Fujifilm, Horiba, Sysmex, Jeol, Konica Minolta, Paramount Bed, TDK etc.

Back in 2021, JMDAI, a medical device subcommittee under the Japan Chamber of Commerce and Industry in India (JCCII) was officially formed. The purpose is to create a common platform for Japanese medical device companies in India, facilitating mutually beneficial interactions to foster a conducive environment for medical device companies.

Additionally, JMDAI acts as a nodal point of reference for Japan medical device companies on key industry and government issues, while collaborating with various government authorities to shape the procurement and regulatory framework. It is also promoting the latest Japanese quality products in India to enhance business opportunities for Japanese medical device companies in the country.

According to ***Ashish Behera, Strategy Manager, Accenture,*** "Japanese players who had a late start to the Indian market than western players like GE, Siemens, Phillips, have had a slow and careful growth strategy sans few players like Terumo, mostly adopting an import and sell model, with few players until recently transitioning to local manufacturing through Production Linked Incentive (PLI) scheme such as Omron Group (BP monitors) and Nipro Medical Corporation (dialysers). As the Indian market transforms from a standalone device model to a connected care service model, Japanese players will have to rethink their digital transformation strategy to bundle new services with existing devices and lock in the customer stickiness along the value chain leveraging their superior service quality such as Fujifilm with NURA and AI screening."

Highlighting the company's growth strategy in India, ***Naoshi Kikumoto, Managing Director, Olympus India*** said, "Training and education have been the key factors where the company has invested in supporting the training needs from clinicians to technicians. Improving the footprint in making value driven propositions of product and services has been the key to the company's presence in India. Olympus's key strategic priorities for the next 3-5 years focus on innovation, patient safety, and productivity to drive growth and enhance the global medtech industry."

Likewise, ***Shishir Agarwal, President and Managing Director, Terumo India*** pointed out, "Our strategic focus over the next 3 to 5 years is anchored in advancing patient care, strengthening partnerships, and building future-ready capabilities. We aim to move beyond products to deliver integrated healthcare solutions, combining devices, digital tools, and clinical education. The idea extends beyond the device, incorporating interconnected technologies, data-informed insights, and smooth integration with healthcare systems. Deepening collaboration with healthcare providers will help us enhance access and trust across the ecosystem. Internally, we're investing in talent, innovation, and agility to fuel long-term growth."

"We are focusing on the emphasis of skill development in the clinical domain, along with digitalisation, regenerative medicine and infection control, as our growth strategy in the medtech sector", said ***Milind Pappu, Director, Nipro Medical India.***

Japaneese Healthcare and Medtech companies operating in India

Comapnies	Year of Inception
Shimadzu Medical (India)	2001
CBC Corporation India	2005
Fujifilm India	2007
Astellas Pharma India Private Ltd.	2008
A&D Instruments India	2008
Mitsubishi Chemical India	2008
Omron Healthcare	2010
Olympus Corporation Services India	2010
Nipro Medical India	2010
Konica Minolta Healthcare India	2010
Nihon kohden india	2011
PENTAX Medical India	2012
Terumo India	2013
ASAHI INTECC CO	2014
Tosoh India	2015
Mani Medical India	2017
Canon Medical Systems India	2023

Source : List of Japanese enterprises JICA, Japanese Business Establishments in India JETRO, Aranca Analysis

While there are multiple focus areas such as manufacturing, education, training, collaboration, being picked up by the Japanese medtech companies to strengthen their presence in India, growing use of new technologies such as artificial intelligence (AI), robotics, virtual reality is expected to further shape the Japanese medtech industry's growth in the coming years.

Banking on Technology

The Japanese government has advanced AI technology in recent years through various initiatives. The Society 5.0 framework is a key government policy that envisions a human-centred society powered by AI and other advanced technologies. Moreover, the government has established AI R&D guidelines, which provide a structured approach to the safe and ethical development of AI technologies.

As reported by the Japanese government, there has been a 15 per cent increase in spending on high-tech medical devices over the past five years, highlighting the market's shift toward advanced technologies. Further, the government is promoting the development of medical devices using digital technology by building a data utilisation platform available to companies for medical device

Some of major recent investments & strategies of the Japanese medtech companies in India

- Terumo has advanced its India Skill Lab (TISL) this year, with advanced models for simulation-based training to train interventional radiologists in minimally invasive procedures
- Omron, renowned for its digital blood pressure monitoring machines, has invested Rs 128 crore to make its first India-based facility operational in Chennai in 2025
- Olympus Corporation announced its strategic initiative in 2024 to establish a Research & Development (R&D) Offshore Development Centre (ODC) in Hyderabad
- With India as a key market, Canon has furthered focus on bolstering the rapidly growing medical business in 2025
- Fujifilm is expanding its NURA health screening centres in India, equipped with its medical devices including CT scan and mammography system, as well as medical IT system based on AI technology
- Horiba has opened one of the largest medical equipment and consumables manufacturing facility in India (Nagpur) in 2024, with an investment of Rs 200 crore
- Sysmex Corporation's new manufacturing base in India, with production capabilities for both diagnostic reagents and instruments as the first of its kind for the Group, began full-scale operations in April 2025, and that the company has commenced manufacturing the XQ-Series Automated Hematology Analyser (XQ-320) in the Indian market in response to the "Make in India" policy
- Electronics giant TDK Corporation deepened its footprint in India in 2025 with the launch of its sixth manufacturing facility. TDK has also partnered with Gopalakrishnan-Deshpande Centre for Innovation & Entrepreneurship (GDC) at the Indian Institute of Technology (IIT) Madras to foster innovation in healthcare technology and diagnostics
- MediBuddy, India's digital healthcare company, has partnered with Elecom, a leading Japanese electronics company, to jointly develop and introduce cutting-edge smart health IoT devices to the Indian market
- Japan's Medical and Biological Laboratories (MBL) has transferred protein test technology to Agappe Diagnostics for diagnosing kidney diseases, sepsis, infertility, and diabetes
- Small & Medium Enterprises and Regional Innovation, Japan (SMRJ) is hosting CEOs business meetings, in collaboration with the Confederation of Indian Industry (CII), for Japanese medtech companies in India in August 2025

development in a way that satisfies both 'medical data' and 'ease of access'.

Citing a few recent developments in this direction, Olympus has launched its first AI-powered clinical decision tool, integrating advanced imaging analytics and machine learning; Terumo Corporation has introduced AI-based Autocath Fractional Flow Reserve (FFR) software in the Japanese market to deliver a cutting-edge, minimally invasive solution for assessing coronary artery health; Omron has partnered with Tricog to launch AI-based cardiac care platform in India; Eureka α, developed by Anaut Inc., is Japan's first software as a medical device to support surgeons' visual recognition in real time, utilising AI to analyse real-time video from laparoscopic and robotic surgery.

Japanese companies are investing judiciously in these new technologies to develop new solutions, not only for their domestic needs, but also for the global markets, including India.

"The convergence of AI, robotics, and personalised care will revolutionise the medtech sector, leading to enhanced diagnostic accuracy, precision surgeries, proactive patient management, and improved access to healthcare, especially in underserved areas. AI will enable the creation of tailored treatment plans based on individual patient data and risk factors; while augmented reality and virtual reality will revolutionise surgical training, providing surgeons with realistic simulations and advanced visualisation tools", said Kikumoto.

On this note, Agarwal adds, "In a nation like India, characterised by its large population and significant healthcare inequalities, the integration of AI, robotics can help close essential gaps in access, affordability, and quality of care."

Redefining the medical technology landscape, collaborative efforts by both India and Japan can set new examples to address common healthcare challenges such as workforce shortages, ageing population and the regional disparities. But this requires collective support of all stakeholders inclusive of the government, industry, startups, academia, suppliers etc. from both countries. BS

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"Many US-based firms are actively seeking new opportunities in Asia for R&D partnerships, clinical trials, and commercialisation"

As Hong Kong accelerates its transformation into a global biotech and MedTech powerhouse, BioSpectrum Asia spoke with Andy Wong, Head of Innovation & Technology at Invest Hong Kong (InvestHK), at BIO International in Boston. Wong discussed increasing American interest in Hong Kong's innovation landscape, spotlighted promising local companies, and shared insights on how strategic partnerships, robust policy frameworks, and cross-border collaborations with Mainland China are positioning Hong Kong as a vital bridge between Western innovators and Asia's thriving biotech ecosystem. ***Edited excerpts;***

« **Andy Wong,** Head of Innovation & Technology, Invest Hong Kong (InvestHK)

How do you view American interest in the HK/China biotech sector?

We see an increasing level of curiosity and engagement from American biotech companies toward the Hong Kong/Mainland China market. Many US-based firms are actively seeking new opportunities in Asia for R&D partnerships, clinical trials, and commercialisation. Hong Kong serves not only as an efficient entry point to Mainland China's vast market but also as a hub of global capital and world-class research.

Which companies should we pay attention to?

We recommend paying attention to both established and up-and-coming companies in Hong Kong's biotech landscape. A number of homegrown start-ups focusing on cell therapy, gene editing, and advanced manufacturing are gaining international recognition. In particular, companies that have formed research or clinical collaborations with local universities and the Hong Kong Science and Technology Parks (HKSTP) are experiencing notable growth. We would be pleased to facilitate introductions and provide details on companies well-positioned to partner with American investors or development partners.

Hong Kong's 8 core advantages for biotech and MedTech growth

Government Policy Support and Initiatives: Hong Kong's government actively supports the biotech and MedTech industries through targeted policies, funding schemes (like the InnoLife Healthtech Hub and New Industrialisation Acceleration Scheme), and infrastructure investment to catalyse growth and innovation.

Strategic Location and Mainland China Market Access: Hong Kong's integration with the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) provides immediate access to a population of 86 million and a $2 trillion GDP market. Hong Kong-registered drugs and devices enjoy streamlined entry into the GBA, and Hong Kong serves as a springboard to Asia, particularly mainland China.

Robust Fundraising and Financial Infrastructure: With its world-class financial markets and a favourable biotech listing regime (including the ability to list pre-revenue companies under Chapter 18A and 18C), Hong Kong is a premier hub for biotech IPOs and venture funding. This financial infrastructure attracts startups and established firms globally.

World-class Research & Development Ecosystem: Hong Kong boasts leading universities, advanced R&D facilities, and partnerships with international institutions. This strong academic and research foundation fuels innovation in new drugs, devices, and digital health solutions.

International Talent Pool: The city attracts top global professionals—researchers, clinicians, and engineers—backed by renowned medical schools and hospitals. This critical mass of talent supports world-leading discovery and

commercialisation efforts.

Legal and Intellectual Property Protections: Hong Kong has a robust common law system and strong intellectual property protections, giving companies and investors' confidence to develop and commercialise breakthrough technologies.

Global Collaboration and Networking Opportunities: A dynamic calendar of international trade fairs, conferences, and exhibitions (e.g., Asia Biotech Invest, Hong Kong International Medical Devices and Supplies Fair) provides networking, partnership, and knowledge-sharing opportunities, accelerating market entry and business development.

Testing, Regulatory, and Commercialisation Platform: Hong Kong is piloting new regulatory initiatives, such as a local FDA-like approval system, to fast-track MedTech product approvals. Its established healthcare networks, proximity to a diverse population, and links to China's broader regulatory environment make it an ideal testbed for scaling innovations both regionally and globally.

What is the current and anticipated impact of HKSTP and Cyberport in supporting translational science and startups?

HKSTP and Cyberport are central hubs for supporting translational science and startups in Hong Kong. Both offer advanced research and development (R&D) facilities, lab spaces, and access to state-of-the-art equipment crucial for biotechnology, artificial intelligence, health sciences, and robotics startups. HKSTP, specifically, has established a strategy focusing on transforming research into market-ready products through a model of Research, Innofacturing, and Finance (RIF). This approach accelerates commercialisation and supports re-industrialisation in Hong Kong, facilitating rapid growth not only locally but also across the Greater Bay Area (GBA) and globally.

As of March 2022, HKSTP hosted over 1,100 enterprises and approximately 17,000 staff, including 11,000 R&D professionals. The government-backed InnoHK clusters at the Science Park are spearheading advances in biomedical technology and AI. Furthermore, HKSTP's education and training initiatives now prioritise technology translation to ensure that research is transformed into real-world impact, supporting Hong Kong's ambition to be a hub for translational R&D in health and other fields].

Cyberport, meanwhile, provides digital and innovation-focused startups with infrastructure, funding opportunities, and business community access, further amplifying the city's startup ecosystem and supporting cross-sector innovation.

Please describe the Cross-border opportunities with the Greater Bay Area (GBA) and China

Cross-border collaboration with the GBA and China presents significant growth opportunities. Both HKSTP and Cyberport have mapped out strategies to extend their reach beyond Hong Kong, leveraging Hong Kong's role as a super-connector to Mainland China's markets and resources. The GBA initiative provides Hong Kong startups with:

- Easier access to the vast Mainland China consumer base
- Opportunities for joint research, commercialisation, and manufacturing
- Collaborative programmes to facilitate cross-boundary flow of talent, ideas, and capital

Shared infrastructure, such as the upcoming Hong Kong-Shenzhen Innovation and Technology Park (HSITP), offering space and resources for R&D and translational science.

This integration accelerates the movement of innovative products and technology from research labs in Hong Kong to mass manufacturing in the GBA, enhancing startup scalability and competitiveness.

Talent pipeline from 5 globally ranked universities—how does this impact/support the sector?

Hong Kong's five globally ranked universities provide a robust pipeline of scientific and entrepreneurial talent, which is a cornerstone for sustained sector growth. These universities collaborate closely with HKSTP, Cyberport, and industry to drive knowledge transfer, translational research, and commercialisation. Many programmes and clusters encourage joint projects and internships, integrating university graduates and researchers directly into startup ventures, R&D, and innovation activities.

The strong focus on nurturing talent for technology translation ensures that Hong Kong's innovation ecosystem remains vibrant, adaptive, and competitive. It also helps attract top-tier global talent and investment, reinforcing the city's reputation as a leading centre for life sciences and health technology innovation. BS

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"APAC is dynamic and rapidly evolving, with tremendous growth in R&D and attractive market conditions"

With cell and gene therapy (CGT) representing a major advancement in medical treatments by directly targeting the root causes of diseases at the cellular or genetic level, GlobalData's latest report predicts the CGT market to be worth $76 billion by 2030. Reports also reveal that the North America region captured the highest revenue share of the CGT market in 2024. To find out more about the new developments taking place in the CGT sector, particularly in the US, BioSpectrum Asia spoke with Amy C Hay, Chief Business Officer, Cell Therapy Manufacturing Center (CTMC), a joint venture between University of Texas MD Anderson Cancer Center and National Resilience, Inc. in the United States. ***Edited excerpts:***

« **Amy C Hay,** Chief Business Officer, Cell Therapy Manufacturing Center (CTMC), Greater Houston, USA

What are the current developments taking place at CTMC, and what are your major plans for the next five years?

CTMC, a joint venture between Resilience + MD Anderson Cancer Center, was founded in 2022 to accelerate driving life-saving cell therapies to patients. In just three years, CTMC expanded its pipeline, supporting both MD Anderson investigators and biotech companies to advance novel cell therapies through Investigational New Drug (IND)-enabling studies and FDA interactions.

CTMC's portfolio has expanded from five to 13 partners, with a mix of 65 per cent biotechs and 35 per cent academic. CTMC has also submitted and cleared eight IND's, all delivered on or ahead of schedule. Notable products include Obsidian Therapeutics' novel tumour-infiltrating lymphocyte (TIL) therapy, OBX-115, and Invectys' lead engineered human leukocyte antigen A (HLA-G) targeting chimeric antigen receptor (CAR) T cell therapy for the treatment of solid tumours.

We have also collaborated with several companies to enable new technology in the field to be evaluated, utilised, and easily accessed by our customers. Current collaborators include Ori Biotech (automated cell therapy manufacturing) and Syenex (enhanced gene delivery systems).

On a global scale, we've developed the Network Alliance programme designed to democratise access to cell therapy through international partnerships and regional manufacturing enablement. We expect to announce our first international member this fiscal year. Also, the Center has been awarded $9.1 million from the Cancer Prevention & Research Institute of Texas (CPRIT) through the Texas New Technologies Company grant, with an additional $1.3 million awarded in May 2025.

Over the next five years, we are focused on accelerating access to cell therapy through digital innovation, expanded manufacturing capabilities, and a growing global alliance network.

We have made significant strides in the digitalisation of our development and manufacturing processes., We are on track to have a fully integrated digital process by the end of 2025, one that enables seamless data capture, analytics, and process control across our operations. This digital backbone will increase efficiency and allow us to support our global partners to scale faster.

Second, we are expanding our current facility to support pivotal trials and, ultimately, commercial launch. Expanding our capabilities reduces the risks and delays of tech transfer and gives our partners a faster path to market.

Third, my personal goal is to ensure the development of the Network Alliance, an ecosystem of cell therapy developers, manufacturers, and academic partners across Latin America, Asia-Pacific, Canada, and Europe. Our objective is to elevate standards, implement best practices, build scalable infrastructure, and expand access for both

established and new cell therapy programmes in these global communities.

How is CTMC strengthening its presence within the Asia Pacific region? Are you exploring collaborations, partnerships there?

The Asia-Pacific region is dynamic and rapidly evolving, with tremendous growth in research and development and attractive market conditions. I anticipate the Asia-Pacific region to be a global leader in cell and gene therapies in the next few years due to increased funding, strategic investment, and expanding clinical trial infrastructure.

On the capital front, the Chapter 18A listing rule on the Hong Kong stock exchange allows pre-revenue biotech companies to go public. More than 70 early-stage biotech companies have used this mechanism to fund the development. The main stock market index in Hong Kong rose 15.94 per cent since the beginning of 2025, demonstrating continued growth driven in part by China's biotech rise and internationalisation driven by the digitalisation of the industry.

On the development front, growing investment in cell therapy is seen in China, Japan, South Korea, and Australia from both the private and public sectors. Countries like Japan are offering regulatory incentives such as expedited approvals or Fast Track designation to attract innovation. China now has the highest number of active cell therapy clinical trials in the world.

We have instituted two areas of focus for the Asia-Pacific market: To identify promising cell therapy biotech companies in the region for co-development and deployment of clinical trials in the United States. This enables promising research from Asia-Pacific to enter the US market more efficiently and at reduced risk. CTMC has the regulatory expertise to support international customers through this process with a successful track record of eight IND clearances over the last three years. And to expand the Global Network Alliance programme within Asia-Pacific to provide tools, training, and support to enable regional manufacturing capabilities.

Is CTMC focusing on other diseases besides cancer?

CTMC is focused on oncology indications and those adjacent to oncology. Most of our development and manufacturing customers are focused on CAR-T or TIL therapy assets. We have expertise in TIL therapy and have developed proprietary platforms and reagents in TIL manufacturing to support our customers.

As of 1Q25, the American Society of Gene and Cell Therapy reported 33 approved gene therapies globally, including genetically modified cell therapies - 18 (55 per cent) of which target oncology indications. Additionally, there were 71 non-genetically engineered modified cell therapies, primarily focused on oncology and rare diseases. From a pipeline perspective, 2,154 gene and genetically modified cell therapies are currently in trials, with 49 per cent targeting cancer. Of these, CAR-T remains the dominant platform, accounting for 50 per cent of all genetically modified therapies, with 97 per cent of CAR-T developments focused on oncology.

More than 960 non-genetically modified cell therapies are under development with 27 trials initiated in 1Q25, with 26 per cent for oncology indications showing a decrease from the last few quarters.

These numbers indicate a shift toward genetically modified cell therapies in the future. Our vast experience in this modality coupled with our development of proprietary reagents put CTMC in a good position to support our partners now and in the future.

How can deployment of new technologies such AI, robotics, machine learning enhance CGT sector globally?

In the next few years, we anticipate that automation and robotics will play a pivotal role in improving scalability and cost-efficiency as the demand for advanced therapies continues to grow.

Equally exciting is the opportunity to incorporate artificial intelligence and machine learning into the overall continuum of cell therapy, starting with patient selection. Innovations that allow us to better understand who will respond to cell therapy, how they will respond, and the likely outcomes of the treatment will position the industry to demonstrate the value of predictive intelligence.

Utilising digital biomarkers during cell therapy and into survivorship will provide real-world evidence to consistently evaluate the body's response to cell therapy, thereby providing an opportunity to develop early interventions. Ultimately, we shift the cost curve and take another step toward preventive medicine. BS

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"The burden on medical and long-term care systems due to ageing is expected to intensify in Japan"

Japan-headquartered Asahi Kasei has appointed Ken Shinomiya, President of Asahi Kasei Life Science, as the Leader of its Healthcare Sector in April this year. Under Shinomiya, Asahi Kasei's Healthcare Sector plans to further advance its portfolio and global presence of pharmaceuticals, life science, and critical care products and services. BioSpectrum Asia took this opportunity to interact with the new leader to find out more about the company's growth plans within Japan and internationally. ***Edited excerpts:***

« **Ken Shinomiya,**
President,
Asahi Kasei Life Science,
Japan

What major initiatives are lined up for Asahi's healthcare business in 2025 and beyond? Are you planning any major investments or partnerships to strengthen the business globally and within Asia?

Our healthcare business spans a diverse range of fields, including Critical Care, Pharmaceuticals, and Life Sciences. Since fiscal 2023, we have established our healthcare headquarters in the United States to manage the business from the world's largest healthcare market, thereby advancing global business development. From fiscal 2025 onward, we will focus not only on realising the returns from previous growth investments—especially in Pharmaceuticals—but also on continuing to invest for sustainable mid- to long-term growth.

Key priorities beyond fiscal 2025 include integrating our three Pharmaceutical businesses under a unified global strategy to drive future M&A to assure the scale for funding clinical developments through 2030, as well as to accelerate in-licensing global assets to build up a solid clinical pipeline that contributes to sustainable growth beyond 2030. In the Critical Care business, reinforcing organic growth with existing product lines in the severe cardiopulmonary space while pursuing new business opportunities in adjacent areas. Also, further expanding our Life Sciences business, which provides products and services for the pharmaceutical industry.

How much revenue growth/generation is expected in FY25-26 from the healthcare business? Could you break it down with respect to the various sectors such pharma, medical devices, life sciences, critical care and bioservices?

Along with certain investments and expenses related to the points described above, the operating income target after purchase price allocation (PPA) for the Healthcare sector in fiscal 2025 is ¥67 billion, with ¥26.4 billion expected from the Pharmaceuticals and Life Sciences businesses, and ¥40.6 billion from the Critical Care business. Looking ahead to fiscal 2027, we project a 42 per cent increase to ¥95 billion in operating income after PPA, with targets of ¥40 billion for Pharmaceuticals and Life Sciences, and ¥55 billion for Critical Care.

Could you highlight your market presence across different sectors (within the healthcare vertical)? Which sector generates the maximum revenue?

In the Pharmaceuticals business, we will accelerate growth primarily in the United States, centred on Envarsus XR and Tarpeyo, which were acquired through the acquisitions of Veloxis Pharmaceuticals in 2019 and Calliditas Therapeutics in 2024, respectively. We also plan to actively pursue additional growth investments through M&A and licensing-in activities by FY2027.

In the Life Sciences business, we launched a new virus removal filter, Planova FG1, specifically tailored to the needs of Biopharmaceutical products in fiscal 2024, and will continue to pursue steady growth. Bionova Scientific, a Contract Development and Manufacturing Organisation (CDMO) company acquired in 2022, has entered

The cell and gene therapy (CGT) market faces several key challenges, including complex and difficult-to-scale manufacturing processes, high production and treatment costs, and supply chain constraints. Regulatory frameworks are still evolving, leading to uncertainty and longer approval timelines. Coordinating treatment logistics and identifying eligible patients early also pose significant hurdles to widespread adoption. Especially in gene therapy, there have been a small number of regulatory-approved products launched thus far.

the plasmid CDMO services space. Moving forward, we aim to further expand both businesses within the biopharmaceutical market. Biosafety Testing Service providers, ViruSure and Bionque, are both expanding their laboratories and preparing for new service launches in this fiscal year. In the Critical Care business, we aim to drive growth by increasing market share for defibrillators and automated external defibrillator (AEDs), as well as further penetrating the market with our wearable defibrillator LifeVest. In addition, we are working to accelerate the growth of our sleep apnea businesses by leveraging our strong business foundation and expertise in the cardiovascular field.

In fiscal 2024, the Critical Care business generated the highest operating income, reaching ¥40.6 billion. By the end of fiscal 2027, as mentioned above, we expect the "Pharmaceuticals & Life Sciences" subsector would contribute a similar level of top income to Critical Care.

Could you shed light on the launch of your plasmid DNA business last year? What are the major objectives and plans forward?

To support the growing demand for advanced therapies, especially Cell & Gene Therapy, we have decided to construct a dedicated facility in The Woodlands, Texas, for the launch of Bionova Scientific's plasmid DNA (pDNA) business. In fiscal 2024, we completed a laboratory for process development as an initial phase. Moving forward, a 50-litre GMP manufacturing facility will start operation in FY25Q2, which enables us to accept small-volume orders and then proceed with plans to build facilities capable of a 200-litre scale.

How do you view the growth of the cell and gene therapy market in Asia and globally? Also, what are the major challenges surrounding this field?

The cell and gene therapy (CGT) market faces several key challenges, including complex and difficult-to-scale manufacturing processes, high production and treatment costs, and supply chain constraints. Regulatory frameworks are still evolving, leading to uncertainty and longer approval timelines. Coordinating treatment logistics and identifying eligible patients early also pose significant hurdles to widespread adoption. Especially in gene therapy, there have been a small number of regulatory-approved products launched thus far. We will continue working closely with industrial thought leaders and key opinion leaders to monitor the evolving situation.

What are the major challenges and opportunities in store for the Japanese healthcare sector in the next five years? How is Asahi approaching those to strengthen its business?

In Japan's healthcare market, where approximately 30 per cent of the population is aged 65 or older, the burden on the medical and long-term care systems due to ageing is expected to intensify. At the same time, the need for innovative treatments is rising, particularly in response to the growing prevalence of chronic diseases. To address these challenges, we are contributing through the development of therapeutics targeting unmet medical needs such as osteoporosis, kidney diseases, rheumatic and autoimmune disorders.

In addition to addressing the domestic market, we are also advancing strategic initiatives from a global perspective. For now, there is no change in our stance regarding the United States. We are actively creating global collaboration opportunities and developing businesses in regions such as Europe and Asia. Furthermore, we are investing in and developing advanced technologies that support pharmaceutical production, particularly focusing on Planova, our virus removal filter, which serves as a critical component in the manufacturing of biopharmaceuticals and other pharmaceutical products. In the meantime, given the recent geopolitical uncertainty evolved, not only in healthcare but also in many other industries, along with drug price pressures, we are proactively collecting information and analysing insights to manage such situations, where risks would be increased while opportunities would emerge globally. BS

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"By removing structural dependence, we unlock the full potential of AI for drug discovery"

Gero, a Singapore-based biotech company focused on aging and chronic diseases, launched ProtoBind-Diff, an AI model that generates small molecules for specific protein targets—using only the amino acid sequence, without needing 3D structural data. This is a major shift from traditional drug discovery tools, which rely heavily on high-quality structural information that often doesn't exist for many disease-relevant proteins. It can generate drug-like compounds for targets that have been historically difficult or impossible to hit by opening up new possibilities for oncology, infectious disease, immunology, and aging-related conditions. In an interaction with BioSpectrum Asia, Dr Peter Fedichev, CEO, Gero, Singapore shared his views on how ProtoBind-Diff performs, tackles challenges and play a role in fast-tracking treatments during future pandemics. ***Edited excerpts;***

« **Dr Peter Fedichev,** CEO, Gero, Singapore

How does ProtoBind-Diff tackle the challenge of targeting proteins without 3D structural data?

ProtoBind-Diff was designed from the ground up to overcome a fundamental bottleneck in drug discovery: the limited availability of high-quality 3D structural data for protein–ligand complexes. While structure-based approaches like docking or AlphaFold-guided generative models rely on resolved protein structures or predicted pockets, these are not available or reliable for a significant fraction of biologically relevant targets—especially novel, disordered, or poorly characterized proteins. This scarcity of structural data restricts the druggable target space, especially in challenging therapeutic areas such as cancer, aging, and neurodegeneration. ProtoBind-Diff sidesteps this dependency entirely by using only the linear amino acid sequence of a protein as its input. The model is a masked diffusion language model that learns the joint distribution between protein sequences and chemically valid small molecules that bind to them. This allows it to operate effectively in sequence space, bypassing the need for any structural input.

What makes ProtoBind-Diff perform better than models like Pocket2Mol on harder targets?

Pocket2Mol and similar models have made impressive strides in structure-based generation. However, these models are fundamentally limited by the narrow set of protein–ligand co-crystal structures available in public databases like the PDB. These structures tend to represent well-behaved targets—mostly kinases, GPCRs, and other classical drug targets with highly conserved binding pockets. ProtoBind-Diff differs in both training data scale and model architecture. First, we trained on a dataset more than an order of magnitude larger than what Pocket2Mol or traditional structure-based generative models typically use. Our million-plus protein–ligand pair dataset includes diverse protein families, assay types, and chemical scaffolds. This breadth gives it much more generalizable predictive power, especially for novel or low-data targets.

Second, the model architecture itself—based on masked diffusion and language modelling—enables more flexible generation. Rather than relying on precise geometric constraints from a binding pocket, it generates molecules conditioned on learned sequence motifs, protein family context, and prior examples of active compounds. This sequence-centric strategy proves especially powerful for "hard" targets—those lacking resolved structures, exhibiting high flexibility or disorder, or belonging to poorly annotated protein families. In internal benchmarks, ProtoBind-Diff outperformed Pocket2Mol on multiple fronts: (1) success rate in generating active-like compounds for challenging targets, (2) chemical diversity of the outputs, and (3) predicted binding strength using orthogonal bioactivity predictors. Importantly, it also exhibited stronger scaffold novelty, suggesting a greater capacity to explore untapped chemical space beyond template-based approaches.

How could this sequence-only approach impact drug discovery for diseases like cancer and aging?

The sequence-only approach of ProtoBind-Diff is

especially impactful in therapeutic areas like cancer and aging, where many relevant targets fall outside the conventional druggable genome. In cancer, for example, oncogenic drivers such as transcription factors, intrinsically disordered proteins, and non-canonical protein–protein interactions have historically been difficult to target due to their lack of well-defined binding pockets. Structural disorder, low expression levels, and poor solubility have made many of these proteins resistant to crystallography or AlphaFold modelling. Yet these are precisely the kinds of targets that could dramatically shift the treatment paradigm if made accessible to drug design. ProtoBind-Diff can address these targets because it relies only on the primary sequence—something available for nearly every human protein. This allows us to systematically generate small molecules against long-overlooked or "undruggable" targets, such as MYC, FOXO, or IDPs implicated in cellular senescence and age-related inflammation.

In the context of aging, the opportunity is even greater. Gero has developed a physics-informed large model of human health based on 50 million longitudinal patient records. This model allows us to identify the biological root causes of aging and the earliest upstream regulators of disease progression. In short, it expands the druggable universe—especially for age-related and oncology targets that have remained beyond reach for structure-reliant platforms.

Why was training on a million protein–ligand pairs crucial to the model's success?

Training on such a large and diverse dataset was essential to ensure ProtoBind-Diff's broad generalizability and real-world applicability. Unlike structure-based generative models, which are typically trained on a few hundred thousand resolved protein–ligand structures, it leverages a vastly larger set of experimental activity data, much of which is tied to sequence but lacks corresponding structural information. This large training corpus allows the model to learn nuanced relationships between sequence motifs and chemical features—essentially capturing the statistical co-occurrence of specific residues or domains with ligand scaffolds, functional groups, and pharmacophores. These associations would be impossible to infer reliably from smaller or more structurally constrained datasets. Finally, the breadth of chemical space covered by our dataset ensures that the model does not overfit to a narrow set of well-explored compounds. Instead, it learns a rich chemical language that allows for scaffold diversity, novel linker formation, and the generation of truly first-in-class molecules.

What role could ProtoBind-Diff play in fast-tracking treatments during future pandemics?

One of the critical lessons of the COVID-19 pandemic was the need for rapid drug discovery platforms that can respond to emerging pathogens without waiting for structural biology or wet lab screening to catch up. ProtoBind-Diff is uniquely suited to address this challenge. Because it requires only the amino acid sequence of a protein to begin molecular generation, it can be deployed immediately after sequencing a novel viral genome. There's no need to wait for expression, purification, crystallography, or cryo-EM data. This ability to "go from genome to drug candidate" in a matter of days could shave critical months off the therapeutic development timeline in a pandemic setting.

Moreover, ProtoBind-Diff's flexible architecture allows it to generate diverse compounds against multiple viral targets in parallel—such as proteases, polymerases, or host interaction factors—enabling a multi-pronged response strategy. These candidates can then be triaged using high-throughput virtual screening and prioritized for synthesis and testing based on binding predictions, ADMET properties, and chemical novelty. We believe it represents a key enabling technology for real-time response drug development, with the potential to dramatically compress the discovery-to-clinic timeline in future health crises.

What's next for Gero in bringing ProtoBind-Diff into real-world drug development?

Our focus now is on operationalizing it into Gero's internal discovery engine and partnering ecosystem. Internally, we've already integrated the model into our AI-driven drug discovery pipeline, targeting age-related diseases with high unmet need—such as fibrotic disorders, immune aging, and neurodegeneration. We are also actively validating ProtoBind-Diff-designed compounds in vitro and in vivo. Externally, we are engaging with potential partners in pharma and biotech to co-develop drugs against challenging or novel targets. Ultimately, we view it as the foundation of a new paradigm in drug discovery—one that treats protein sequences as the universal design language of molecular therapeutics. By removing structural dependence, we unlock the full potential of AI for drug discovery—making previously intractable biology accessible and accelerating the path to new medicines. BS

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Why AI-Enabled 'Dirty Drugs' are Future for Longevity Medicine

Ageing is not a result of a single malfunction; it's a gradual, systemic breakdown that touches everything. Researchers have long understood this and have mapped the tangled web of genes, pathways, enzymes, and signalling molecules involved. For decades, the pharmaceutical industry tried to simplify its way through the complexity of ageing. But now, with AI and polypharmacology, we finally have the tools to meet that complexity on its terms.

What if a key part of the solution to Asia's looming demographic crisis lies in embracing something we in the pharmaceutical industry have long avoided, complex, multi-target, so-called 'dirty' drugs? Across the region, a slow-burning emergency is unfolding. Birth rates are plunging, life expectancy is climbing, and the population pyramid is inverting. In countries like Japan, South Korea, China, and Singapore, this is already translating into overburdened health systems, lonely older populations, frustrated youth, and stifled economic growth. The conventional tools of medicine, clean, single-target therapies, are falling short in the face of the complexity underlying chronic diseases and the ageing process itself.

Tackling them effectively demands therapies that engage multiple biological 'levers' at once, without triggering chaos. Until recently, the complexity and risk involved in designing drugs of this kind were, for all intents and purposes, unmanageable. But that is now changing- emerging artificial intelligence (AI) models, particularly graph neural networks, allow us to navigate ageing's complexity and design effective, multi-target compounds with exceptional precision and efficacy.

Ageing Is a Systems Problem

Ageing is not a result of a single malfunction; it's a gradual, systemic breakdown that touches everything. Metabolic regulation slips. Immune signals misfire. Neuroendocrine rhythms falter. Regeneration slows. These aren't isolated failures; they're deeply interconnected.

Ageing researchers have long understood this. We've mapped the tangled web of genes, pathways, enzymes, and signalling molecules involved. But understanding that complexity exists is not the same as being able to address it. As with other aspects of medical research, most drug discovery efforts in longevity biotech have focused on single levers: one gene, one protein, one pathway at a time.

There were good reasons for this. Multi-target drugs were, justifiably, seen as unacceptably risky. They raised too many questions: Which effect is helping? Which is harmful? Will regulators approve something so unpredictable?

And that's the problem. In systems as interconnected as human ageing as well as chronic disease, this reductionist approach delivers only incremental gains. It's why so many "silver bullet" interventions have fallen short in translation, from antioxidant cocktails to NAD boosters, to senolytics. Tackling one pathway while others fail around it is like fixing a single wire in a burning circuit board. If we are to truly intervene in ageing, we need an approach that doesn't simplify complexity, but works with it.

Polypharmacology Is Powerful

Some of the most successful drugs in medicine turn out to work not because they are clean but because they are complex, though their multi-target nature was often discovered only after their development and approval. Imatinib (Gleevec), for instance, was designed to shut down a single malfunctioning protein in leukaemia. But it also blocks other targets, like c-KIT and PDGFR. That 'off-target' activity helped make it a blockbuster.

Or consider clozapine, a gold-standard treatment for schizophrenia. It doesn't just block dopamine (like other antipsychotics). It interacts with serotonin, histamine, and even immune-related receptors. That messy profile gives it both its unmatched efficacy (and its complicated side effect profile).

Nowhere is the need for innovation in ageing medicine more urgent than in Asia, and few other places are better positioned to lead. Singapore, for example, has made longevity science a national priority. The Healthy Longevity Translational Research Programme at the National University of Singapore (NUS) is a flagship initiative linking clinical trials, biomarker research, and translational ageing science. Meanwhile, China's AI ecosystem is scaling at breathtaking speed, with companies like DeepSeek pioneering large multimodal foundation models. Perhaps most notably, Asia is already producing world-class operators in AI-driven drug discovery.

Over and over again, we see examples like these, now classic cases where clinical success stemmed from unexpected multi-target activity. Slowly, we have begun to accept that polypharmacology isn't a flaw. Rather, it is the hidden engine of efficacy. Yet, geroscience is lagging, still chasing the illusion of single-pathway interventions in a deeply multifactorial process. Now, with the right tools, that can finally change.

A Step Change in Capability

In our recent collaboration with Scripps Research, researchers at Gero used a graph neural network to deliberately design compounds that modulate multiple biogenic amine receptors, key players in neuroendocrine ageing. The results exceeded expectations: over 70 per cent of the AI-identified compounds extended lifespan when tested in C. elegans. Eight of them extended lifespan by more than 50 per cent. One compound achieved a 74 per cent lifespan extension, placing it in the top 5 per cent of all known geroprotectors in the DrugAge database.

These were phenotypic assays: the compounds were tested directly in lifespan extension models, and their mechanisms of action were confirmed using genetic knockdowns of their predicted targets. But what matters most is not so much the specific numbers, it's the turning point this represents. AI models can now rationally navigate the tangled, multi-target biology of ageing. For the first time, we have a proof-of-concept that we can engineer polypharmacology at scale, rather than stumbling into it. Of course, C. elegans are simple organisms, they don't have organs like hearts, so side effects such as cardiotoxicity (e.g., via hERG channel binding, a classic polypharmacology safety concern) don't manifest. Safety remains a major hurdle. But here too, proteome-scale in silico prediction may offer a solution. With AI expanding to cover off-target toxicity across the human proteome, even complex safety profiles may soon be tractable.

Why Asia Has the Opportunity to Lead

Nowhere is the need for innovation in ageing medicine more urgent than in Asia, and few other places are better positioned to lead. Singapore, for example, has made longevity science a national priority. The Healthy Longevity Translational Research Programme at the National University of Singapore (NUS) is a flagship initiative linking clinical trials, biomarker research, and translational ageing science.

Meanwhile, China's AI ecosystem is scaling at breathtaking speed, with companies like DeepSeek pioneering large multimodal foundation models. Perhaps most notably, Asia is already producing world-class operators in AI-driven drug discovery. Insilico Medicine, founded in Hong Kong and now operating globally, has advanced multiple AI-discovered drug candidates into clinical trials, including one for idiopathic pulmonary fibrosis, showing that end-to-end AI pipelines are no longer speculative. This combination of demographic urgency and technological capability makes AI-enabled multi-target drug discovery a natural fit and a potential growth driver for the region. Asia has the opportunity to define this field, not merely participate in it.

Complexity Is the Future

The future of longevity medicine won't come from ignoring complexity, but from embracing it; from letting go of isolation and embracing orchestration. For decades, the pharmaceutical industry tried to simplify its way through the complexity of ageing. But now, with AI and polypharmacology, we finally have the tools to meet that complexity on its terms.

There is something deeply Asian in this approach. In Taoist and Zen traditions, progress doesn't come from resisting the current, but from learning to flow with it. The same may now be true in medicine.

This is not just a technical evolution, but a philosophical one. The age of AI-designed complexity is here. Let's shape it. BS

Dr Peter Fedichev,
Founder, Gero, Singapore

PCI Growth in Malaysia: Innovations Transforming Cardiovascular Care

The number of PCI procedures with stents has risen dramatically in Malaysia in recent years and is set to see further significant growth, driven by rising CVD prevalence, demographic shifts, and technological advancements. Since the introduction of DES, there has not been a successful major technological advance in stent technology for over two decades. However, results from the INFINITY-SWEDEHEART Trial, published in The Lancet in November 2024 indicate that a novel technology is set to challenge the dominance of DES in the PCI market.

Innovation in Percutaneous Coronary Intervention (PCI) (formerly called angioplasty) procedures helps to better manage coronary artery disease (CAD) not just in older patients, but in younger patients living longer, more active lives. The number of PCI procedures with stents has risen dramatically in Malaysia in recent years and is set to see further significant growth, driven by rising cardiovascular disease prevalence, demographic shifts, and technological advancements. The market is projected to expand from $18 million in 2022 to $27 million by 2030, reflecting a compound annual growth rate (CAGR) of 4.95 per cent.

Worryingly, this growth is not just being driven by the ageing population but also by cardiovascular disease presenting in younger patients. Data from the National Health and Morbidity Survey reveals a concerning upward trajectory in cardiovascular morbidity and mortality in recent years, particularly among younger people, with over 35.2 per cent of heart attack fatalities aged below 60 years of age according to the Ministry of Health (MoH).

The data also shows the average age of Malaysian patients undergoing PCI is 57, significantly younger than the global average of 65 and 14 years younger than Japan's average age of 71. As the average age of stent recipients lowers, it is highlighting an inherent problem with the current standard of care, the drug eluting stent (DES).

Drug-eluting Stents

The introduction of the DES in 2003 and 2004 was one of the most significant and successful developments in the history of stent technology. The DES was designed to address restenosis, which is the narrowing of a blood vessel following a PCI, within or immediately adjacent to a previously stented region. This was a common complication with bare-metal stents, which the DES overcame by releasing medication to prevent the re-narrowing of arteries, thus significantly improving the outcomes in interventional cardiology. This innovation reduced restenosis rates to less than 10 per cent, a dramatic improvement from the 32 to 55 per cent seen in the early days.

While the DES has become a cornerstone in the treatment of coronary artery disease (CAD), it still has several limitations, such as Rigid Structure- Traditional rigid stents prevent the natural movement and pulsation of the artery, which can lead to complications such as restenosis and late stent thrombosis; Permanent Implantation- This can interfere with the artery's natural healing process and lead to long-term complications; Risk of Adverse Events- There is a risk of adverse events such as heart attacks and the need for repeat procedures. With contemporary DES, very-late stent-related events, including ischemia-driven target lesion revascularisation (TLR) and stent thrombosis, occur at a rate of roughly 2 per cent per year. Even after achieving successful initial outcomes, there is a consistent 1 to 2 per cent annual increase in target lesion failure (TLF).

A 1 to 2 per cent annual increase in TLF might not sound like much, but the risk compounds over the years. In medical statistics, risk accumulation is often calculated multiplicatively rather than additively. If the failure rate is 1 to 2 per cent per year, then the cumulative risk after 10 years would be approximately 9.6 to 18.3 per cent, depending on whether the annual risk is closer to 1 or 2 per cent. After 20 years, the failure risk would range between 18.1 and 33.2 per cent.

While far from ideal, the TLF rate was, and is, considered acceptable when the average age of a stent recipient was 65 or older. But as patients get younger and have the potential to live longer, active lives, that failure risk has become less acceptable, bringing to raise the need for a PCI implant with better long-term performance.

New Innovations in PCI Procedures

Data from large patient registries, such as the SWEDE-HEART registry, shows that while some stents perform better than others, none of the newer DES have resolved the long-term issue of incremental failures. This highlights the limitations of stents as a long-term solution and underscores the need for continued innovation to address the underlying issues of CAD.

Since the introduction of DES, there has not been a successful major technological advance in stent technology for over two decades. However, results from ongoing studies such as the INFINITY-SWEDEHEART Trial, published in The Lancet in November 2024 indicate that a novel technology is set to challenge the dominance of DES in the PCI market. The DynamX Drug Eluting Coronary Bioadaptor System (bioadaptor), was developed as a long-term solution to address the concerns and limitations of conventional DES.

The SWEDEHEART trial provides robust evidence supporting the efficacy and safety of the bioadaptor compared to contemporary DES in PCIs performed in Sweden. The single-blind, non-inferiority, registry-based, randomised controlled trial included 2,399 patients undergoing PCI for chronic or acute coronary syndrome (CCS or ACS) who were randomised to receive either the bioadaptor or a contemporary brand of DES.

The primary outcome, target lesion failure (TLF), a composite of cardiovascular (CV) death, target vessel myocardial infarction (TV-MI), or ischemia-driven target lesion revascularisation (ID-TLR), was assessed at 12 months. The results demonstrated non-inferiority of the DynamX Bioadaptor compared to the DES, with TLF rates of 2.4 per cent V/s 2.8 per cent, respectively. Additionally, the DynamX Bioadaptor showed a significant reduction in TLF in patients with ACS and complex lesion subsets.

Potential Challenges and Future Direction

The future of the bioadaptor looks promising, but it is essential to address potential concerns and challenges that may arise in its adoption and implementation.

Learning curve for clinicians: The introduction of the new bioadaptor may require training and education programmes to help cardiologists understand its unique benefits and become proficient in its use.

Reimbursement: Although already FDA approved and available in some Asian countries including Malaysia, securing reimbursement from healthcare payers will be a critical step for the widespread adoption of the bioadaptor.

Patient selection and indications: Identifying the appropriate patient population and indications for the use of the bioadaptor is crucial. Ongoing research and real-world experience can also help refine patient selection criteria and optimise outcomes.

The bioadaptor has significant implications for healthcare systems and economies worldwide. Reducing the need for repeat procedures and long-term complications is an important benefit for younger stent recipients and can lead to cost savings for both patients and healthcare providers in the long run, as well as improved quality of life for the patient. Additionally, the reduced risk of adverse events can lead to shorter hospital stays, fewer follow-up visits and decrease the burden on healthcare facilities and resources. BS

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Sun Pharma names Kirti Ganorkar as new Managing Director

Sun Pharmaceutical Industries, based in India, has announced the appointment of Kirti Ganorkar as the Managing Director (MD) to succeed Dilip Shanghvi, effective September 1, 2025, with the entire business and all functions reporting to him. Ganorkar has been heading India Business at Sun Pharma since June 2019. Under his leadership, the company's India Business has grown consistently, further increasing its market share. Previously, he has held various leadership roles across business development, marketing, M&A, new product introduction, project management, IP and litigation at Sun Pharma. He played a key role in driving Sun Pharma's foray into specialty by securing rights for innovative products such as Ilumya. Ganorkar led Sun Pharma's entry into Japan and laid initial groundwork for the company's entry into Europe. He supported the US business with stewardship of several notable generic projects from concept to commercialisation.

A chemical engineer and MBA, Ganorkar joined Sun Pharma in 1996.

Royal Society elects Duke-NUS' Prof. Wong Tien Yin for Fellowship

Recognised for his invaluable contributions to science and innovation, Professor Wong Tien Yin from Singapore-based Duke-NUS' Office of Academic Medicine has been elected to the Fellowship of the Royal Society, the UK's national academy of sciences. Prof. Wong is among more than 90 new Fellows and Foreign Members elected by the Royal Society, the world's oldest and most esteemed scientific academy in continuous existence. These outstanding researchers come from a wide range of fields, from artificial intelligence and electron microscopy to global health and neuroscience, and bring diverse perspectives. A physician-scientist-innovator, Prof. Wong has long been dedicated to the research and application of artificial intelligence and digital technologies in the screening, diagnosis and prediction of major ophthalmic and systemic diseases. His AI research has been adopted in Singapore's national diabetes screening programmes and internationally.

Medison expands global leadership team

Israel-based Medison, the creator of a first-of-its-kind unified global commercialisation platform that accelerates the launch of breakthrough therapies in markets beyond the US, Western Europe, and Japan, has announced two key additions to its global leadership team: c. Shay Tamari, newly appointed Chief Business Officer, will lead Medison's global corporate development strategy. With over 20 years of international experience in the pharmaceutical industry, including a decade at Pfizer and a deep understanding of the US biotech ecosystem, Tamari will focus on unlocking long-term growth opportunities, fostering strategic partnerships, and amplifying the reach of Medison's platform.

Shay Tamari

Tali Mirsky

Tali Mirsky joins as Chief Legal & Compliance Officer, bringing more than 25 years of legal and compliance expertise, in both private and publicly traded companies, most recently from NICE. Her leadership in strategic global transactions, corporate governance, risk management and compliance will support Medison's expansion and further reinforce the integrity of its unique platform.

Australia develops AI tool to ensure colorectal cancer patients receive correct dose of chemotherapy

University of Melbourne and Western Health researchers in Australia have developed a new artificial intelligence (AI) tool to prevent cancer patients from receiving incorrect doses of chemotherapy. The AI algorithm uses image recognition technology and machine learning to accurately predict the precise amount of chemotherapy a patient requires based on their body make-up. Currently, around 60 per cent of colorectal cancer patients who undergo chemotherapy are either overdosed or underdosed.

The research team utilised data including CT scans from a cohort of more than 1,000 colorectal cancer patients at Western Health to help train and test the algorithm. The algorithm analysed the scans and found the patients' body compositions (percentages of fat, bone and muscle) determined how the chemotherapy drug was metabolised and stored in their bodies. Using these findings, the algorithm can now calculate tailored chemotherapy doses for patients using their body compositions. Recognising the clinical need for a patient tailored chemotherapy dosing solution, the team has formed a startup called 'PredicTx Health' to translate their research into a product.

Singapore designs new biomaterial to show how ageing in heart could be reversed

A new lab-grown material has revealed that some of the effects of ageing in the heart may be slowed and even reversed. The discovery could open the door to therapies that rejuvenate the heart by changing its cellular environment, rather than focusing on the heart cells themselves. The research was carried out by a team from the Department of Biomedical Engineering in the College of Design and Engineering (CDE) at the National University of Singapore (NUS).

The team focused on the extracellular matrix (ECM), the complex framework that surrounds and supports heart cells. This net-like scaffolding made of proteins and other components holds cells in place and sends chemical signals that guide how the cells function. As the heart ages, the ECM becomes stiffer and its biochemical composition changes. These changes can trigger harmful activity in heart cells, contributing to scarring, loss of flexibility, and reduced function.

India discovers novel nanozyme to prevent excess blood clotting

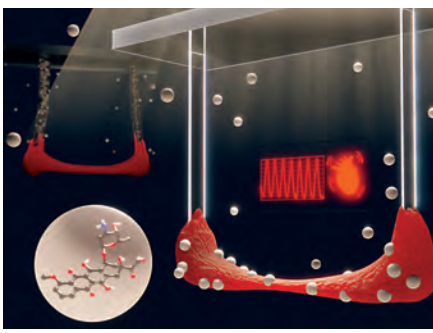
Researchers at the Indian Institute of Science (IISc), Bengaluru have developed an artificial metal-based nanozyme that can potentially be used to clamp down on abnormal blood clotting caused by conditions like pulmonary thromboembolism (PTE). These "nanozymes" work by controlling toxic Reactive Oxygen Species (ROS) levels, thereby preventing the over-activation of platelets that leads to excess clot formation or thrombosis. The team injected the nanozyme in a mouse model of PTE and found that it significantly reduced thrombosis and increased the animals' survival rates. They also observed the weight, behaviour, and blood parameters of the animal for up to five days after injecting the nanozyme, and did not find any toxic effects. The team now plans to explore the efficacy of the nanozyme in preventing ischemic stroke, which is also caused by clogging of blood vessels. Researchers are hopeful about clinical studies in humans.

Hong Kong leads global drug development using new dual immunotherapy

A research team from the School of Clinical Medicine of the LKS Faculty of Medicine of the University of Hong Kong (HKUMed) has pioneered the use of a 'dual immunotherapy' combination- nivolumab and ipilimumab (NIVO+IPI), in the treatment of liver cancer patients. This innovative treatment has proved to significantly improve survival rates and tumour control compared to current first-line treatments, lenvatinib and sorafenib. Recently it was approved by the US Food and Drug Administration (FDA), the European Medicines Agency (EMA) and China's National Medical Products Administration (NMPA) for global use, offering new hope to liver cancer patients worldwide. Liver cancer is the sixth most common cancer worldwide and the third leading cause of cancer mortality. In Hong Kong, it ranks fifth in annual cancer incidence and third in mortality. Hepatocellular carcinoma (HCC), the most common type of primary liver cancer, accounts for 90 per cent of all liver cancer cases and is often diagnosed at an advanced stage.

Japan transforms engineered heart tissues for precise drug testing

A research team at Kyoto University in Japan has developed a novel engineered heart tissue (EHT) platform using low-absorption polystyrene (PS) that overcomes the limitations of current devices, enabling rigorous in vitro evaluation of drug responses and streamlining preclinical testing by minimising the need for conventional animal experiments. Many drugs fail in clinical trials due to discrepancies between pre-clinical and clinical outcome, often stemming from the inability of animal models to replicate human biological responses accurately. Instead, to overcome this challenge, EHTs derived from human induced pluripotent stem cell cardiomyocytes (hiPSC-CMs) have been increasingly utilised to model cardiac diseases and test candidate drugs. While polydimethylsiloxane (PDMS) is favoured for its flexibility and biocompatibility, its high absorptive property significantly distorts pharmacodynamic assessments. To address this, the researchers developed a PS-based EHT device with dramatically lower compound absorption.



Korea focuses on exercise-induced protein to revive ageing muscles and bones

A joint research team, at the Korea Research Institute of Bioscience and Biotechnology and Chonnam National University, South Korea, has discovered a key protein, CLCF1 (cardiotrophin-like cytokine factor 1), that plays a central role in mediating the health benefits of physical activity. The team found that CLCF1 is secreted by muscles during exercise, where it helps strengthen both muscles and bones, thereby suppressing musculoskeletal ageing. To understand how CLCF1 changes in response to exercise and aging, the researchers divided participants into young and elderly groups and monitored changes in blood CLCF1 levels after exercise. Interestingly, CLCF1 levels increased markedly after a single exercise session in the younger group, whereas in older adults, the protein only increased after over 12 weeks of continuous exercise. Further analysis showed that CLCF1 enhances mitochondrial function in muscle cells, inhibits the formation of bone-resorbing osteoclasts, and promotes the differentiation of bone-forming osteoblasts.

Qiagen inks new partnership to develop oncology assays

Qiagen has announced a new partnership to develop oncology assays for use on the QIAcuityDx platform, a high-performance digital PCR system designed for clinical diagnostics. Gencurix is the first development partner under Qiagen's QIAcuityDx Partnering Programme. This important advancement marks a significant step towards establishing a broad menu of in vitro diagnostic (IVD) assays on the QIAcuityDx Four platform, increasing access to digital PCR diagnostics. The new partnership combines Qiagen's QIAcuityDx digital PCR platform to advance sensitive, cost-effective oncology diagnostics with Gencurix's expertise in multiplex assay development. The aim is to enable the creation of oncology IVD assays for both tissue and liquid biopsy applications, with flexible commercialisation options and global reach through Qiagen's Partnering Programme.

Sartorius expands manufacturing and R&D capacities for innovative bioprocess solutions in France

The life science group Sartorius recently celebrated the completion of a multi-year capacity expansion project at the headquarters of its French sub-group Sartorius Stedim Biotech in Aubagne. The investments highlight Sartorius' commitment to providing customers with innovative fluid management technologies. Sartorius almost doubled cleanroom space in Aubagne, enhancing production lines for 2D and 3D single-use bags. Certified with ISCC Plus, the site uses renewable raw materials for plastic components. In addition, the company adopted ISO 14001 to enhance the environmental performance of its operations. An automated logistics facility accelerates raw material handling, and a cross-functional lab space fosters collaboration with customers. The campus received several sustainability and biodiversity certifications. The Aubagne campus is part of Sartorius' global expansion of research and production capacities. These investments aim to prepare the company's infrastructure for further organic growth and to strengthen the flexibility and diversification of the production network - supporting consistent delivery reliability and product quality across all regions.

IonOpticks Generation 4 Aurora Series sets new benchmark in chromatography

Australia-based IonOpticks, developer of chromatography columns for mass spectrometry research, has announced the launch of its 4th Generation of Aurora Series columns. Following extensive testing by leading proteomics researchers, the latest generation further strengthens the qualities that made the Aurora Series famous, offering enhanced robustness, longevity, spray stability and reproducibility, while still delivering a best-in-class balance of throughput, sensitivity and depth of coverage in sample analysis. These performance gains enable Generation 4 Aurora Series columns to withstand demanding conditions, offering a practical solution for laboratories under pressure to produce reliable data with fewer resources. The Generation 4 Aurora Series features an expanded range of 150 µm capillary flow columns designed for modern proteomics workflows. These columns deliver high-throughput analysis of complex samples while maintaining sensitivity.

PacBio expands distribution in China gaining access to new clinical lab networks

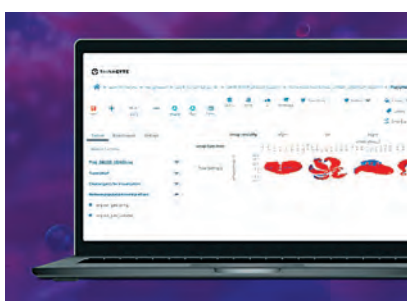
PacBio, a leading provider of high-quality, highly accurate sequencing solutions, has announced the appointment of Haorui Gene, a globally recognised leader in blood typing genomics, as an official distributor in China. The distribution arrangement is designed to expand access to PacBio's HiFi long-read sequencing technology in clinical and research settings, with a focus on transfusion medicine and hematology, areas where precision and completeness of genomic data are critical to patient outcomes. This marks an important step toward establishing PacBio's HiFi sequencing as the method of choice in blood genomics, offering exceptional accuracy across full-length genes, structural variants, and highly polymorphic regions that are critical for transfusion safety and donor matching. Under the terms of the agreement, Haorui Gene will distribute PacBio's Vega platform throughout China, which, together with other products offered by Haorui Gene, will deliver end-to-end support for clinical laboratories, blood centres, and genomics institutions aiming to build more complete, confident blood group profiles.

Waters enhances Alliance iS HPLC System software

Waters Corporation has announced the release of version 2.0 of the Alliance iS HPLC System software, a significant advancement that provides full end-to-end traceability and enhanced data security for the pharmaceutical industry. The integration of Empower Software's secure architecture with the Alliance iS HPLC system's touchscreen will improve compliance monitoring and intuitive traceability for customers. Globally, more than 80 per cent of new medicines have been submitted to regulatory authorities using Empower software. With this release, the Alliance iS HPLC system offers state-of-the-art touchscreen security by enabling individual, identifiable access control through user authentication. This innovation further strengthens the system's position as the smartest HPLC system available today, setting a new benchmark for traceability while improving troubleshooting and operational efficiency. It ensures uncompromised data integrity from sample to result.

ThinkCyte unveils cloud-based platform for AI-driven cell morphology data analysis

ThinkCyte, a Japan-based life science company pioneering advanced artificial intelligence (AI)-powered cell analysis and sorting technologies, has announced the pre-commercial launch of MorphoScan Cloud, its new cloud-based platform designed for flexible data access, faster processing, and advanced AI–driven analysis. MorphoScan Cloud expands the user experience for customers of VisionSort, ThinkCyte's flagship morphometric cell analysis and sorting platform. With secure cloud storage and multi-user access capabilities, MorphoScan Cloud enables research teams across geographies to centralise, share, and analyse VisionSort-generated data more efficiently. With an integrated suite of advanced analytical tools, purpose-built to unlock deeper biological insights from complex cellular data, MorphoScan Cloud is the next step in ThinkCyte's commitment to bringing advanced morphometric profiling hardware and software solutions to life science research.



Riding High on China & India Diabetes, Obesity Surge

Semaglutide, a drug used for diabetes and weight management, is produced by Novo Nordisk and sold under the brand names Ozempic and Rybelsus for type 2 diabetes, and Wegovy for weight management. It's a GLP-1 receptor agonist that mimics a naturally occurring gut hormone, helping to regulate blood sugar and potentially reduce appetite. Semaglutide-based products, including Ozempic (first received US FDA approval on December 5, 2017), Rybelsus (September 20, 2019), and Wegovy (June 4, 2021), generated DKK 201.84 billion (approximately $29.3 billion) in sales in 2024.

This figure represents 70 per cent of Novo Nordisk's total revenue for the year that stood at DKK 290.4 billion (nearly $41 billion). Sales of Diabetes Care (Ozempic, Rybelsus) increased by 20 per cent at constant exchange rates (CER), with a global diabetes value market share of 33.7 per cent. Similarly, the sales of Obesity Care (Wegovy) surged by 57 per cent at CER, reaching DKK 65,146 million, with a volume market share of 70.4 per cent.

According to a Mordor Intelligence report, the semaglutide market size is estimated at $31.08 billion in 2025, and is expected to reach $56.75 billion by 2030, at a CAGR of 12.8 per cent during the forecast period (2025-2030). North America (US and Canada) dominates the market, capturing 73.8 per cent of global market share in 2025. Europe represents the second most important market, offering unique strategic value through its diverse healthcare systems.

The Asia-Pacific region represents both the current challenge and future promise of the global semaglutide market, positioning itself as tomorrow's growth engine. The region's diabetes epidemic, particularly evident in countries like China and India, creates an underlying demand driver that promises sustained growth as access barriers are addressed.

Several companies are forming strategic manufacturing partnerships to ensure consistent supply in high-growth regions like the APAC, where the market is growing at about 15.6 per cent annually. Companies that can balance pricing pressures from insurers while maintaining manufacturing capacity to meet growing demand will gain the edge in this market. These business capabilities, rather than just product features, increasingly determine which companies gain or lose market share in both established and emerging markets.

Meanwhile Novo Nordisk noted in its June release that Ozempic and Rybelsus are used by over 7 million and 2.1 million people with type 2 diabetes worldwide respectively, with Ozempic being marketed in 72 countries and Rybelsus in 45 countries. Wegovy is currently available in over 15 countries.

Novo Nordisk is making significant investments to ramp up its global manufacturing capacity for semaglutide, aiming to meet the current and future demand for its popular diabetes and weight loss medications. It is investing $1.09 billion Investment in Brazil and is expected to be operational in 2028. Similarly, it is investing $4.1 billion in the US at North Carolina that will be finalised between 2027 and 2029.

The adverse effects most frequently reported and most associated with discontinuation of semaglutide include nausea, vomiting, abdominal pain, constipation, and diarrhea. Besides few more common adverse reactions include Hypoglycemia, Alopecia or hair loss, Renal problem, Gallbladder disorders, Anaphylaxis and angioedema, Pancreatitis, Risk of thyroid C-cell tumors and Diabetic retinopathy etc.

On June 27, the World Health Organisation (WHO) came up with an alert for health-care professionals and regulatory authorities about the risk of non-arteritic anterior ischemic optic neuropathy (NAION) associated with the use of semaglutide. The European Medicines Agency (EMA) Pharmacovigilance Risk Assessment Committee (PRAC), after reviewing all the available data on NAION with semaglutide, concluded that NAION is a very rare side effect of semaglutide, potentially affecting up to 1 in 10,000 users. Accordingly, the EMA has recommended that the product information for semaglutide medicines be updated to reflect this risk.

As against adverse reactions, the benefits are outpacing and more visible. The company is making the best use of this by publishing latest developments with semaglutide and entering more developing markets. BS

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