BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Buoyant Life Sciences Sector Emerges Stronger

02 December 2023 | Analysis | By Ayesha Siddiqui

As we bid farewell to another eventful year in the world of life sciences, it's time to look back at the whirlwind of advancements and changes that have shaped the industry in 2023. Back in January this year, we interacted with leaders from various market segments who shared their insights into what the year held for their particular spheres. Let's recap the 2023 predictions and find out if they panned out as predicted.

2023 was the year when the world finally emerged from the grips of COVID-19. The biopharma industry looked beyond the pandemic. Artificial Intelligence (AI) based drug discovery was a hot topic, with the industry's billions on AI finally paid off. Insilico Medicine, based in China, achieved a significant milestone with its lead drug for Idiopathic Pulmonary Fibrosis (IPF) – INS018-055. This is the first drug designed for an AI-discovered target and created by generative AI to advance to phase 2 clinical trials with patients. The other important topic that garnered attention was - ageing. The reality of the ageing population is finally catching up in the region and the countries are scrambling to deal with it. China continues its winning streak to be recognised as a biopharma innovative powerhouse, while Singapore emerged as a manufacturing powerhouse for the industry. The region also held onto its rank as a preferred destination for clinical trials. Some of the trends observed were predictable with a few surprises thrown in. Let's take a deep dive into the year gone by.

AI in drug discovery

AI has become a cornerstone technology in the drug discovery process, with virtually all companies, regardless of size, incorporating it into their drug discovery life cycles. According to a CPHI report, AI is expected to revolutionise all aspects of drug development by 2026, and by 2030, over 50 per cent of FDA approvals are anticipated to involve drugs discovered and

developed through AI.

Insilico Medicine, a China-based company, achieved a noteworthy breakthrough with its lead drug for Idiopathic Pulmonary Fibrosis (IPF) – INS018-055. This marks a pivotal moment as it is the first drug designed for a target discovered by AI and created through generative AI to progress to phase 2 clinical trials involving patients.

“The power of artificial intelligence (AI) has had a massive influence on drug discovery and development, with players like Huawei, Merck S D and Takeda Pharmaceuticals investing heavily in the capability to discover superior novel lead compounds in months rather than years, as well as to better engage with patients. It is expected that the global market for AI in biopharma will increase to $3.88 billion by 2025 at a 52.9 per cent compounded annual growth rate (CAGR), thus we can expect to see more of these deals,” said **Dr Maud Eijkenboom, CEO, Lixa**. Established in 2021, Lixa is an Australian biotechnology company developing revolutionary, broadly applicable and scalable solutions for Antimicrobial Resistance (AMR).

All eyes are on China

China continued its impressive streak as a biopharmaceutical innovator, solidifying its leadership position in the field. The country has become a sought-after destination for groundbreaking therapies, attracting major deals with prominent global pharmaceutical and biotech firms.

Notable deals include Novartis’ $100 million deal for CAR-T therapy with China's Legend Biotech. Merck, aiming to bolster its oncology pipeline, partnered with Hengrui Pharma. GSK also made a significant move by securing an $85 million ADC (antibody-drug conjugate) deal with Hansoh Pharma.

German mRNA major BioNTech, has been actively partnering with Chinese startups. It inked a substantial $1 billion oncology deal with Biotheus. Additionally, BioNTech collaborated with Doer Biologics in a biotherapeutics agreement. The firm also inked a deal with MediLink Therapeutics to develop next-generation anti-cancer ADCs.

“China has emerged and evolved significantly, especially in the past decade. International biopharmaceutical manufacturers have been adapting to the value and opportunity there, moving beyond an earlier focus on marketing established products to now regarding China as a potential market for their latest innovative medicines and a strategic global opportunity alongside their home markets in the US and Europe,” said **Jeff Weisel, Managing Director, Policy, Access, Value and Evidence APAC, Avalere Health, USA**.

Mental Health

Mental health continues to be an important sector in the region. Asia is home to several innovative digital mental health companies and the governments are also taking various initiatives to improve well-being.

Australia, in particular, is strategically enhancing its mental healthcare landscape. The Australian government has crafted a comprehensive 10-year National Mental Health Workforce Strategy. This strategic roadmap aims to ensure that Australians have timely and accessible mental healthcare by guiding coordinated efforts over the next decade. Additionally, the government is allocating $8 million for 10 projects under the fifth grant opportunity for the Medical Research Future Fund’s Million Minds Mental Health Research Mission.

In Singapore, the Inter-agency Taskforce has rolled out the National Mental Health and Well-being Strategy. This strategic initiative aims to establish an effective mental health ecosystem, combining accessible clinical care with strong community support. Adding to the momentum, ThoughtFull, Asia's first digital mental health company, secured $4 million in an oversubscribed pre-series A funding round, led by Sheares Healthcare Group, a wholly-owned entity of global investment firm Temasek. Another Singaporean digital mental health company Intellect secured significant investments from IHH Healthcare, an international healthcare leader.

Ageing

1 in 7 individuals in Asia Pacific were aged 60 or older. This demographic trend is accelerating, with projections suggesting that by 2050, 1 in 4 people in the region will fall into this age group, according to the United Nations, Economic and Social Commission for Asia and the Pacific (ESCAP), 2022. To address the growing concern of an ageing population, the APAC

region is actively taking steps to tackle longevity-related issues. In August 2023, Singapore marked a significant milestone by inaugurating the world's very first Healthy Longevity Medicine Clinic. This achievement is part of a broader wave of developments in the region that focuses on the science of ageing and longevity. This is also expected to increase further in the coming year.

Singapore manufacturing

Singapore emerged as a hotbed for biopharma manufacturing. Last year almost all the big pharma firms announced plans to advance biologics manufacturing in the region. This year too there has been a spate of developments in this sector. Notable developments include Hilleman Lab's $20 million investment to launch a new ACES cGMP Facility, Leica Microsystems' $60 million investment for a next-gen facility, and Thermo Fisher Scientific's expansion of sterile manufacturing and research capabilities in the Asia-Pacific region.

Further contributing to Singapore's prominence in biopharma manufacturing, several companies have inaugurated new facilities and expanded capabilities. SCG has opened a new cell therapy manufacturing facility and research and development (R&D) centre, while West Pharmaceutical Services has inaugurated an advanced manufacturing facility. ACTRIS and Biosyngen have also unveiled new cell therapy facilities, emphasising Singapore's growing prowess in cell and gene therapy capabilities. Biosyngen, specifically, has opened a new cell therapy GMP facility, further solidifying Singapore's position at the forefront of the biopharma industry.

Genomic testing and precision medicines

In a rapidly evolving landscape of healthcare, precision medicine took centre stage.

“The development of a national project for precision medicine and to support the development of new drugs and enable new markets for existing drugs is picking up. Several countries are officially working on national programmes or about to declare it publicly,” said **Nino da Silva, Managing Director APAC, BC Platforms, Switzerland**. BC Platforms is a global leader in building data networks for the life sciences industry and provides versatile technology platforms for personalised medicine, accelerating the translation of innovations into clinical practice.

Singapore's Precision Health Research (PRECISE) leads the implementation of phase II in the 10-year National Precision Medicine (NPM) strategy. Focused on leveraging Asian genome insights, it aims to transform healthcare with data-driven solutions for improved patient outcomes.

“Multi-omic technologies are fueling the next wave of precision medicine, ranking them as the first among the five healthcare trends to watch this year. While genomics technologies have paved the way for precision medicine, current efforts aim to overcome the limitations of genomics technology and advance precision medicine by utilising next-generation technologies, such as proteomics. Consequently, large-scale projects are being pursued to secure multi-omics data. In China, the government has launched the Proteomic Navigator of the Human Body (?-HuB) project, aiming to systematically map and analyse protein profiles related to human cells and major diseases over the next 30 years,” said **Seungman Han, CEO, Bertis, South Korea**. Bertis, specialises in the development of proteomics-based precision medicine technology.

Riding on this trend and responding to market demands, Bertis launched the multi-omics analysis service PASS in Korea last year and expanded its reach to the United States this year. The PASS service has experienced remarkable growth, continually receiving service orders from national government agencies, government-funded research institutes, and private companies.

Non-communicable diseases are rising in the region, which can be addressed by precision medicine, leveraging genomics.

“We saw the proliferation of genomic technologies across the Asia Pacific, attracting investors' investments. Based on engineered or bacterial nucleases, the development of genome technologies has opened up the possibility of directly targeting and modifying genomic sequences. The impact of the application of genomics extends beyond increasing healthcare standards for the citizens. Indonesia stands to benefit from further economic benefits totalling $100+ billion, as indicated in our white paper on genomics, titled “Genomics: Leapfrogging into the Indonesian healthcare future”. The benefits are the combination of incremental productivity and healthcare savings incurred through genomics,” said **Wesley Tay, Principal at East Ventures, Indonesia**.

New Diagnostic Tech

“The impact of the COVID-19 pandemic has led to a broader consensus on the importance of diagnostic technology, resulting in a rapid growth of the diagnostic market. Companies in the diagnostic and vaccine sectors have achieved impressive sales results. They are now compelled to actively engage in the development and commercialisation of new diagnostic technologies, leveraging their business expertise and financial resources accumulated during the COVID-19 period, given the sharp decline in sales due to the COVID-19 endemic. Governments worldwide are also making continuous investments in diagnostic research to enhance public health and mitigate medical costs,” says Seungman Han.

In October, Bertis entered a contract with SaudiVax Inc., a Saudi biotechnology firm, to supply MASTOCHECK™ —a blood test for the early detection of breast cancer developed using proteomics technology—to seven countries in the Middle East.

Given the focus on health policies and industrial demands, the heightened interest and active investments in new diagnostic technologies are expected to persist, further evidenced by recent partnerships such as Boehringer Ingelheim's agreement with a Chinese startup Burning Rock Biotech for oncology companion diagnostics, Fapon and Halodoc driving the development of Indonesia's in-vitro diagnostics industry, and Japan's GHIT collaborating with Institut Pasteur de Dakar in Africa to develop new diagnostics and vaccines.

Funding Drought

2023 turned out to be a difficult year for biotech funding as the funding avenues dried up.

“A very obvious trend has been the ongoing difficulty for life sciences companies, particularly smaller and private companies, to raise new capital. Larger, publicly traded companies have been able to raise capital but often at a significant discount to a share price that has already been squeezed over the past couple of years. The impact is that existing shareholders have seen the value of their investment shrink (through both share price reduction and dilution of their holdings), while incoming investors have been able to get more ‘bang for the buck’. It has been very much a buyer’s market, with incoming investors being able to take their time and pick and choose the best deals. This environment has forced companies to reduce expenses to make their existing cash last longer, as well as cut back on the scope of their fundraising activities. For many, the focus for 2023 has been on survival, with the hope that the financing environment will improve in 2024,” said **Dr Ian Nisbet, Chief Operating Officer, Cartherics, Australia**. Cartherics’ is developing novel, ‘off-the-shelf’ (allogeneic) immune cell therapy products for the treatment of cancer.

Echoing similar sentiments, **Ben McLaughlin, Partner, Baker & McKenzie, Australia** said “2023 has been a difficult year for biotechs, health techs, and other companies seeking funding. Of course, biotechs and the like are generally unsuitable for ‘bricks and mortar’ traditional bank funding. We’ve seen macroeconomic headwinds, stock market volatility, and spiking interest rates. The IPO market has been extremely quiet across Asia-Pacific. Moreover, venture capital and private equity investment and deal value globally have declined by 30 per cent. The global private equity industry ended 2022 with a record $3.7 trillion in ‘dry powder’; (uncommitted funds), and that amount has not been substantially reduced in 2023.”

Venture capital (VC) funding, especially early-stage, is at its lowest level since 2019. VCs have battened the hatches as they triage their portfolios, with their portfolio companies making survival cuts to pipelines and staff. With VCs shifting focus from growing to surviving, more of their capital is reserved for their existing portfolios – meaning less is available for investment, says a report from ICON plc.

Another report by Bay Bridge Bio estimated there to be an $8 billion shortfall of follow-on capital for series A in 2023 companies compared to a year ago in 2022.

A study co-led by The University of Queensland (UQ) has found Australia is lagging behind similar countries in funding basic research, particularly in the medical, biotechnology and pharmaceutical sectors.

APAC is the favoured destination for clinical trials

The global clinical trial landscape has changed significantly, and the Asia-Pacific (APAC) region has emerged as the hot spot for conducting clinical trials and the region continues to be the global hub for clinical trials. According to GlobalData’s Clinical

Trials Database, during the five-year period (October 2019-October 2023), over 74,000 new clinical trials were registered in the APAC, US, and EU5 (France, Germany, Italy, Spain and the UK). The APAC region accounted for more than 60 per cent of the trials, the largest contributor, followed by the US and the EU5, and this trend is expected to continue in the future. During this period, the APAC region registered the highest growth, followed by the US and EU5. Among all the countries, China registered the largest number of new trials during the assessed period, followed by the US and India," said **Nadim Anwer, Managing Consultant, Healthcare, GlobalData**.

The high growth in the APAC region was due to the ease of regulatory compliance, the growing patient population, the low cost of conducting studies, and the presence of a few top clinical institutions acting as sites.

Innovations in CAR T-Cell Therapies

Cancer continues to remain a health concern in the APAC region due to the ageing population, changes in lifestyle associated with economic development, and epidemiologic transition. Chimeric Antigen Receptor (CAR) T-cell therapy can be very effective against some types of hard-to-treat cancers and is the established treatment for a variety of blood cancers, such as CD19 CAR-T for B-cell malignancies and BCMA CAR-T for MM.

"APAC is emerging as a key region in the development of CAR-T therapies, with China leading the race. There are four approved CAR-T therapies in China and one in India. China is expected to dominate research and development in this space, with more than 50 companies involved in the development of CAR-T therapies. Notably, there are four CAR-T therapies in late-stage clinical development in China. According to GlobalData's Clinical Trials Database. China is the largest contributor to CAR-T clinical trials, accounting for more than 50 per cent of global CAR-T clinical trials. The reason for the high number of trials in China could be attributed to government initiatives to ensure new treatments come to market. Moreover, as part of Healthy China 2030 and other pharma and healthcare visionary programmes, China enhanced its focus on innovative therapies," said Nadim.

India, too, is not behind in the race. ImmunoACT received the approval of India's first CAR-T cell therapy, NexCAR19 (actalycabtagene autoleucel), for the treatment of r/r B-cell lymphomas and leukaemia. Immuneel Therapeutics' IMN-003A CAR-T is also in Phase II for B-cell lymphomas and leukaemia. With the approval of NexCAR19, ImmunoACT has set the standard for indigenous CAR-T cell therapy in India.

While 2023 was marred by uncertainties, widespread conflicts, economic downturns, and an overall sense of gloom, the life sciences sector in APAC region exhibited remarkable resilience and persistence.

Ayesha Siddiqui