

Press Release // 10 March 2022

SCG Cell Therapy and A*STAR's BTI Collaborate to Advance Antibody Development for Infectious Diseases and Cancer Treatments

- Novel therapeutic antibody discovery and CMC process development to produce more effective, safer and affordable treatments
- Global antibody market valued at US\$145.7 billion in 2021; five out of 10 bestselling drugs are antibody-based
- 33 million people in Southeast Asia have chronic hepatitis B virus
- Cervical cancer is the fourth leading cause of female cancer; 351,721 new cases and 199,902 deaths annually in Asia

SINGAPORE, 10 March 2022 – Singapore-based SCG Cell Therapy Pte Ltd (“SCG”), a leading biotechnology company, has signed a collaboration agreement with A*STAR’s Bioprocessing Technology Institute (BTI) to advance the development of multi-specific antibodies.

The collaboration will leverage BTI’s multi-specific antibody technology platform and SCG’s product development expertise for novel therapeutic antibody screening and Chemistry, Manufacturing and Control (CMC) process development to discover new treatment candidates for infectious diseases and related cancers, particularly the hepatitis B virus (HBV) and human papillomavirus (HPV). Such treatments could complement and augment existing drugs and result in more effective, safer and affordable treatments for patients.

Frank Wang Shuli, Chief Executive Officer of SCG Cell Therapy said, “We’re pleased to sign our first partnership with BTI, a world-class research institute and further strengthening our ties with A*STAR, supporting its vision to position Singapore as a key global bio-manufacturing and biomedical R&D hub.

“The collaboration builds on SCG’s strong international network and capabilities in product development, and BTI’s in-depth expertise in biotherapeutics technology and manufacturing process development. Together we look forward to accelerating breakthroughs in new antibody-based therapeutics, revolutionising how we treat chronic infections and cancer,” he added.

Antibodies are produced by the immune system to neutralise pathogens such as bacteria and viruses. When a pathogen enters the body, it stimulates the immune system to produce antibodies that recognise the harmful agent or antigen and binds to it with precision. The antibody prevents the antigen from binding with its target or triggers an immune attack.

Multi-specific antibodies combine more than two antigen-recognising elements into a single molecule, enabling them to target multiple antigens on the same or separate cells. This is especially crucial in the event of cancer. Multi-specific antibodies engage tumour cell and immune cell to promote immune activities, reduce immune escape, increase tumour killing selectivity, and disrupt cancer development or progression.

Dr Koh Boon Tong, Executive Director of A*STAR's Bioprocessing Technology Institute, said, "Multi-specific antibodies provide a promising platform for the development of novel therapeutic concepts, facilitating the production of safer, more effective pharmaceuticals. This strategic alliance will help strengthen BTI and SCG's respective fields of research and contribute to better health and social outcomes for Singapore and beyond."

The global antibody market was valued at US\$145.7 billion in 2021 and is projected to reach US\$248.9 billion by end 2026, growing at a CAGR of 11.31%.¹ In 2013, five out of the top 10 best-selling drugs were antibody based². In 2020, the Food and Drug Administration approved 13 biologics – drugs that are produced from living organisms or their components – out of which 12 were antibody-based while only one was protein-based.³

A key factor driving market growth is the increasing demand for therapeutic antibodies to treat chronic diseases. This is due to the high drug costs associated with biologics which uses the substances from living organisms, or the body's own immune system, to fight the disease. The increasing spending on healthcare raises the economic burden of cancer and other chronic diseases. Improvements in the production of therapeutic antibodies have reduced drug manufacturing costs, increasing penetration in cost-sensitive markets.

Asia Pacific (APAC) has a substantial burden of infectious diseases, including HBV which causes liver cancer and HPV which can lead to cervical cancer. According to the World Health Organisation, an estimated 33 million people have chronic HBV while over 400,000 die annually from viral hepatitis in SEA (81% from HBV and hepatitis C).⁴ In Asia, cervical cancer ranks as the fourth leading cause of female cancer where an estimated 351,721 new cases and 199,902 deaths are reported every year.⁵

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About SCG Cell Therapy

SCG is a leading biotechnology company focusing on the development of novel immunotherapies in infections and its associated cancers. The company targets the most common cancer-causing infections: helicobacter pylori, human papillomavirus, and hepatitis B, and develops a broad and unique pipeline of T cell therapies, antibodies, and therapeutic vaccines against infections and to prevent and cure its associated cancers. Established and headquartered in Singapore, SCG combines regional advantages in Singapore, China and Germany, covering the entire value chain from innovative drug research and discovery, manufacturing, clinical development and commercialization. SCG collaborates with leading scientists and researchers to bring first-in-class and best-in-class medical products/technologies to enhance innovation in medical product development. For more information about SCG, please visit us at www.scgcell.com.

About A*STAR's Bioprocessing Technology Institute

Bioprocessing Technology Institute (BTI) is a research institute under A*STAR. Established in 1990, BTI is positioned as Singapore's pillar of research and development for the

¹ <https://www.marketdataforecast.com/market-reports/antibodies-market>

² <https://www.drugtargetreview.com/article/1802/antibody-discovery-technologies/>

³ <https://www.mdpi.com/1420-3049/26/3/627/pdf>

⁴ <https://www.who.int/southeastasia/health-topics/hepatitis>

⁵ <https://www.hpvcentre.net/statistics/reports/XSX.pdf>

biomanufacturing sector. BTI's core capabilities span across the bioprocessing value chain, largely comprising Product Innovation, Cell Line Development, Media Development, Downstream Processing, Process Development and Scale-up, and Analytical Science & Technologies. Through strategic partnerships and application-driven research, BTI seeks to create value and impact in product markets including biologics, cell and gene therapy, exosomes, vaccines, engineered tissues, process analytical technologies and cell culture systems. For more information on BTI, visit www.a-star.edu.sg/bti.

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector R&D agency. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit the economy and society. As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Our research creates economic growth and jobs for Singapore, and enhances lives by improving societal outcomes in healthcare, urban living, and sustainability. A*STAR plays a key role in nurturing scientific talent and leaders for the wider research community and industry. A*STAR's R&D activities span biomedical sciences to physical sciences and engineering, with research entities primarily located in Biopolis and Fusionopolis. For ongoing news, visit www.a-star.edu.sg.

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