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"We will enable researchers in Singapore to conduct homegrown large-scale population health studies"

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NUS Medicine Protein Biomarker Discovery Core Facility has opened in Singapore, allowing researchers at the NUS (and from the entire region) to get access to the newest biomarker discovery facility and in-house expertise, with the aim of developing precision medicine, which is one of the key goals of Singapore's Research, Innovation and Enterprise 2025 vision in the areas of health and biomedical sciences. The technology platform will be provided by the Swedish company Olink Proteomics. that can identify more than 3000 proteins in less than a drop of blood. In conversation with BioSpectrum Asia, Andrea Ballagi, MD, PhD, Vice President Sales and Marketing Asia and Pacific Region, Olink Proteomics shares more details about the new facility, and the company's growth plans in Asia.

Please share more details about the technology that has been transferred by Olink to NUS? What is so unique about it? Has the technology been transferred to other Asian countries as well?

The importance of proteomics is well understood, as proteins mirror our health and disease status, and are therefore the perfect biomarker candidates for many different applications. There is a strong unmet need to study proteins, as they also provide the most actionable options for therapeutic interventions - they are the targets of most current drugs. However,

technological challenges have prevented the performance of large-scale studies, especially with the low-concentration part of the proteome. Olink Proximity Extension Assay (PEA) has made this possible with its unique, proven, scalable technology capable of measuring thousands of proteins together or one single protein with the same quality, in small volumes of biological samples, such as a few microliters of blood. It is a game-changer. The Olink platforms for advanced protein biomarker research range from high-plex, high throughput discovery to more targeted biomarker studies.

The technology allows protein biomarker studies to be run that were not possible a few of years go. Producing a lot of data, with trusted quality, fast and affordable, Olink was previously selected as the proteomics partner for the world's biggest proteomics study, analysing 56K samples from the well-known UK Biobank with the Olink Explore 3072 platform. The study was sponsored by major pharmaceutical companies, which clearly shows the growing interest in proteomics in drug development as well as academia. These types of studies were not possible before.

We continue to innovate to maximise our coverage of the proteome and provide as broad a view of the proteome as possible in any given sample - plasma, serum, cerebral spinal fluid, and so on - without compromising on quality of the measurements. We recently launched an open-access online platform, Olink Insight, to address the complex challenges of proteomic data analysis. This simplifies the user data journey. As an example, this platform can be used to translate biological pathways to a list of candidate protein biomarkers, which enables improved experiment planning, setup, and post-run data analysis.

With this partnership, Olink strengthens its presence in the South Asia Pacific region, offering its highly innovative proteomics technologies to a wider audience. The Core Facility at NUS can now offer the full range of services based on Olink's technology, which is also available in Japan, South Korea and China.

How much has been invested in developing this technology?

Our technology was built from the wealth of proteomics knowledge generated in Uppsala and Sweden as a whole over the last century, culminating in the launch of our first protein panel based on PEA in 2013. In a few short years, Olink has grown rapidly from a small, Sweden-based company offering assays for a few hundred proteins, to a NASDAQ-listed organisation with a strong global presence, a broad portfolio of flexible protein biomarker solutions and a library of high quality, thoroughly validated assays that cover ~3000 proteins. Our products and services have supported 30 of the world's 40 largest pharmaceutical companies (as ranked by 2020 revenue), as well as many leading clinical and academic institutions. Since the company was founded in 2016, we have successfully grown our business to approximately $140 million of revenues in 2022, more than 900 customers, almost 600 employees, and over 1,000 peer-reviewed publications citing Olink technology.

Can the technology help in reducing the rising burden of non-communicable diseases within Asia? If yes, how?

Yes, proteomics can play a crucial role in reducing the burden of non-communicable diseases in Asia. To unravel the complexities of human disease, and in particular non-communicable disease that are also influenced by lifestyle and environment, it is imperative to put high-quality proteomics at the center of multiomics strategies together with genomics. Proteins can add a lot of new information and provide us with the chance of a much deeper understanding of real-time disease biology, which will be necessary to provide actionable insights for developing new, more effective, and better tailored therapies in the future.

How would Olink contribute to the ongoing SG100K study of the genomics of the population in Singapore?

The combination of proteomics and large-scale genetic analyses such as Genome Wide Association Studies (GWAS) can be used to identify specific genetic variants that affect the plasma levels of individual proteins. Proteomics will be natural next step after the ongoing genomic analysis.

Olink has a strong, global track record of large-scale population studies, such as the previously mentioned UK Biobank study, where Olink was selected based on its high specificity, high throughput, and high data quality. Olink is involved in an increasing number of population health studies around the globe. So far, most of these studies have been performed on Caucasians; only a few of them have focused on other ethnicities. We hope to transfer this knowledge and technology for the benefit of the SG100K study. These large-scale collaborative studies, in which academic research and pharma work in tandem, will happen more often in the future and obviously have the potential to make a huge impact on future healthcare.

Do you plan to collaborate with the Singapore government in their upcoming healthcare projects?

Olink is proud to support Singapore's 10-year National Precision Medicine (NPM) strategy to drive data-driven healthcare, improve patient outcomes, and add economic value by strengthening precision medicine. By anchoring our technology at the NUS Medicine Protein Biomarker Discovery Core Facility and transferring the necessary technology and knowledge, we will enable local researchers to conduct homegrown large-scale population health studies.

We are happy to learn more about the challenges, needs, and focus areas and to further discuss and collaborate on different levels in order to address these and contribute to upcoming healthcare initiatives and investments.

Please share more details about Olink's hiring plans in the APAC region in 2023 or beyond?

We continue to grow our team in all regions; we are expanding in Singapore and South Korea. We have a new colleague in Australia and are also strengthening our team in China.

What more plans are in store at Olink this year for the APAC region?

We continue to expand our business in the region by understanding the needs of clinical and academic researchers, the pharmaceutical industry, and providing the best solutions for their protein biomarker research. We hope that this year's many initiatives such as HUPO (Human Proteome Organization) World Congress, taking place in South Korea, will help to accelerate proteomics in the region, enabling us to better understand human real-time biology and improve healthcare for future generations. I strongly believe that we are experiencing very exciting times in the history of life sciences.

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