

MEDIA RELEASE

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SCIENTISTS FROM THE GENOME INSTITUTE OF SINGAPORE AWARDED CZI ANCESTRY NETWORK GRANT TO INVESTIGATE IMMUNE DIVERSITY IN SINGAPORE AND ASIA

The project focuses on how genetics, gender and geography influence immune cells in Asian populations.



SINGAPORE – A team of researchers, led by the Agency for Science, Technology and Research's (A*STAR) Genome Institute of Singapore (GIS), was awarded the prestigious [Chan Zuckerberg Initiative \(CZI\) Ancestry Network Grant](#) in support of their Asian Immune Diversity Atlas (AIDA) project. The project aims to build a map of cells from the blood of

healthy Asian individuals spanning 20 distinct populations from eight Asian countries: Singapore, Japan, South Korea, India, Thailand, Russia, Pakistan and Sri Lanka.

Although Asia accounts for nearly 60 percent of the global population, samples from Asian individuals are profoundly under-represented in global genomic databases. AIDA, the flagship project of Human Cell Atlas (HCA) Asia, aims to correct this imbalance by studying how immune cells are affected by age, ethnicity, environment and geography.

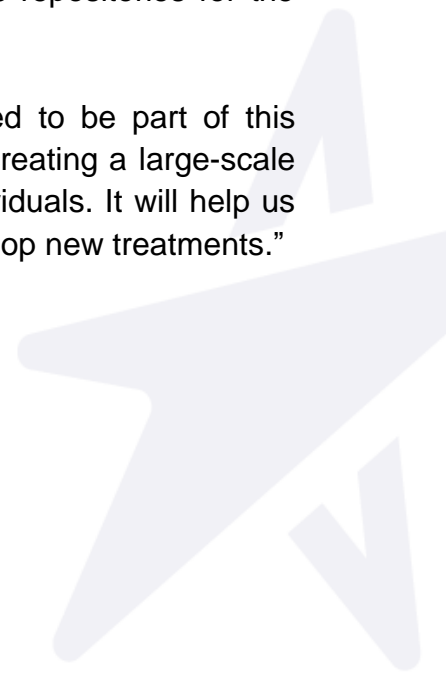
With the support of the CZI Ancestry Network grant, AIDA will expand representation of diverse Asian population groups within the HCA, promote research participation across Asia, and maintain long-term community engagement to ensure that the project benefits participating communities. AIDA will also provide a baseline measurement of the immune system (the body's defence mechanism) in healthy individuals, which will be essential for identifying the abnormalities that occur in diverse immune-related diseases, metabolic disorders and cancers.

The project will sequence millions of individual cells from over 1,000 individuals to study the expression of genes as well as the unique immune cell receptors that are involved in mounting a defence against invading pathogens. This will shed light on the properties of immune cells in healthy individuals and serve as a reference and comparison point for understanding immune aberrations in diseases.

Dr Shyam Prabhakar, Associate Director of Spatial and Single Cell Systems at GIS, said, "AIDA is the first large-scale effort to characterise immune cell diversity in Asian populations. It will lay a foundation for Precision Medicine in Asia by facilitating therapies tailored to the specifics of the patient. The curated data will be deposited in public repositories for the benefit of the scientific and clinical communities."

Prof Patrick Tan, Executive Director of GIS, said, "GIS is honoured to be part of this pioneering regional collaboration, working towards a unified goal of creating a large-scale map of representative traits of immune cells from healthy Asian individuals. It will help us define the changes that cause immune disorders and eventually develop new treatments."

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About A*STAR's Genome Institute of Singapore (GIS)

The Genome Institute of Singapore (GIS) is an institute of the Agency for Science, Technology and Research (A*STAR). It has a global vision that seeks to use genomic sciences to achieve extraordinary improvements in human health and public prosperity. Established in 2000 as a centre for genomic discovery, the GIS pursues the integration of technology, genetics and biology towards academic, economic and societal impact, with a mission to "read, reveal and write DNA for a better Singapore and world".

Key research areas at the GIS include Precision Medicine & Population Genomics, Genome Informatics, Spatial & Single Cell Systems, Epigenetic & Epitranscriptomic Regulation, Genome Architecture & Design, and Sequencing Platforms. The genomics infrastructure at the GIS is also utilised to train new scientific talent, to function as a bridge for academic and industrial research, and to explore scientific questions of high impact.

For more information about GIS, please visit www.a-star.edu.sg/gis.

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

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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About the Chan Zuckerberg Initiative

The Chan Zuckerberg Initiative was founded in 2015 to help solve some of society's toughest challenges—from eradicating disease and improving education, to addressing the needs of our local communities. Our mission is to build a more inclusive, just, and healthy future for everyone. For more information, please visit www.chanzuckerberg.com.

