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Singapore-based startup Gene Solutions to introduce smart blood test for lung screening in early 2025

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A precise, non-invasive, and affordable test specifically designed for lung cancer screening



Gene Solutions (GS), a pioneer genomic testing company in South-East Asia, aims to introduce a smart blood test to clinical practice in early 2025 to support the urgent need for accessible lung screening.

SPOT-MAS is a blood test developed by Gene Solutions to detect multiple features of circulating tumor DNA (ctDNA) released from cancer cells, indicating if someone may have cancer. Previously, SPOT-MAS was validated as a multi-cancer early detection test in a longitudinal study involving 9,024 healthy people. While detecting multiple cancers, including lung cancer, in a single blood test is an aspirational goal, the key challenge lies in making it affordable for a large population.

Gene Solutions has integrated a multiomics tumour ATLAS with artificial intelligence (AI)-driven feature engineering and deep learning models to analyse genetic, epigenetic, and fragmentomic data. This methodology offers a precise, non-invasive, and affordable test specifically designed for lung cancer screening. Through enhanced AI analysis and the incorporation of lung-specific features, the SPOT-MAS Lung test has demonstrated remarkable effectiveness, achieving 90% sensitivity and 92% specificity.

With two College of American Pathologists (CAP) accredited laboratories in Singapore and Ho Chi Minh City, Vietnam, GS has partnered with over 4,500 hospitals and clinics across Southeast Asia and boasts a team of approximately 250 biology experts and technicians out of a total of 700 employees.