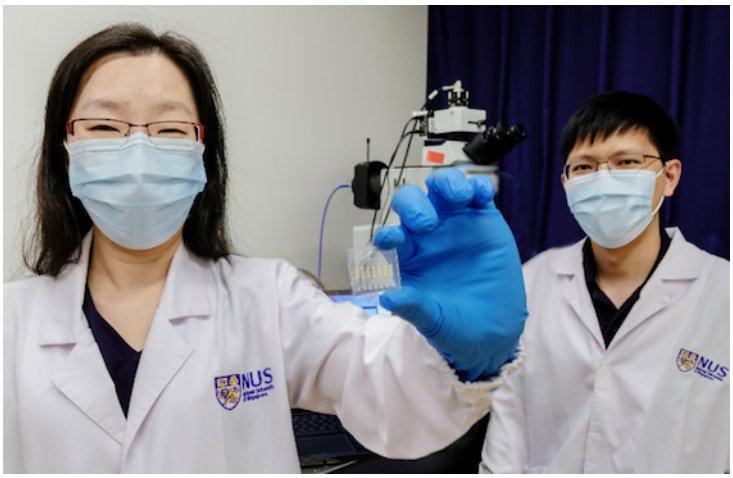
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Singapore develops world-first blood test to monitor cancer treatment success

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The ExoSCOPE test accurately classifies disease status and determines treatment outcome within 24 hours after the start of treatment



Cancer patients who are undergoing targeted therapy can look forward to a new blood test that could tell their doctors whether the treatment is working, within one day after the start of the treatment.

Assistant Professor Shao Huilin and her research team from the Department of Biomedical Engineering and Institute for Health Innovation & Technology (iHealthtech) at the National University of Singapore (NUS) have developed a technology that is accurate, less invasive and significantly brings forward the evaluation window, by using liquid biopsies.

The technique, termed extracellular vesicle monitoring of small-molecule chemical occupancy and protein expression (ExoSCOPE), is the first of its kind in the world. It takes advantage of extracellular vesicles (EVs) secreted by cancer cells and circulating in blood as a reflective indicator of drug effectiveness in solid tumours.

"Conventional procedures such as tumour imaging are not only expensive but also delayed. For these methods, treatment effectiveness can only be determined after weeks. Using the ExoSCOPE, we can directly measure the outcomes of drug effectiveness within 24 hours of treatment initiation. This will significantly reduce the time and cost for cancer treatment monitoring," said the lead scientist Asst Prof Shao.

The nine-member NUS team took two years (from 2019 to 2021) to develop and validate the ExoSCOPE platform. Their next challenge is to expand the platform to measure the efficacy of different drugs and apply the technology to a spectrum of diseases from cancers to cardiovascular and neurological disease. A patent has been filed for ExoSCOPE and the NUS team hopes to bring this technology to market in the next three years.