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ASIA EDITION

Korea offers accurate early cancer diagnosis with a drop of blood

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Researchers succeed in detecting circulating tumor DNAs of low abundance without gene amplification



Liquid biopsy, which detects tumor DNAs in the blood, is not only more convenient than the biopsy that requires collection of patients' tissues, but is attracting much attention since the blood contains tumor DNAs in presence of any cancer in the body, whereas the tissue collection frequently misses cancerous cells.

Currently, polymerase chain reaction (PCR) is widely employed to detect a small number of mutated genes. However, there is a strong need to improve the reliability of the conventional method since its sensitivity and specificity are compromised especially at low concentrations.

A research team at South Korea-based Pohang University of Science and Technology (POSTECH) in collaboration with Seoul National University College of Medicine and Seoul St. Mary's Hospital has shown that the use of an atomic force microscope overcomes such shortcomings.

The liquid biopsy method developed by the researchers demonstrates sensitivity high enough to detect even one to three specific tumor DNAs in the blood while showing specificity close to 100%.

The newly developed liquid biopsy will soon go to market through NB Postech Inc., a venture company specializing in medical diagnosis. As the first step, a reference laboratory will be launched at Seoul St. Mary's Hospital, and clinical trials for research and FDA approval are scheduled at the site.