

Detection of Lung Cancer Aided by a Simple Blood Test



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A Korea University Guro Hospital (KUGH) research team has developed a new method that can detect lung cancer in patients with a drop of blood.

The researchers separated exosomes from the cell culture of 20 healthy subjects and 43 patients with stages 1 and 2 of non-small cell lung cancer. They detected more than 2,000 Raman spectroscopy signals using nanotechnology based on surface-enhanced Raman spectroscopy.

Using the signal, the researchers trained a deep learning-based artificial intelligence model and succeeded in sorting healthy cells and lung cancer cell exosomes with 95 percent accuracy.

They also succeeded in classifying lung cancer patients' exosomes to about 84-percent sensitivity and 85-percent specificity compared to exosomes derived from lung cancer cells.

With the technique, even patients with stage 1 lung cancer, who have had difficulty in early diagnosis, can check for lung cancer in about 30 minutes with a drop of blood, the team said.

Professor Kim Hyun-goo of the hospital's Biomedical Engineering Department and Professor Choi Yeon-ho of Cardiothoracic Surgery Department led the study.

“By using this technology, hospitals can conduct a blood test to pre-screen patients who are likely to have lung cancer and perform CT tests only when necessary as such tests may cause radiation exposure,” Professor Kim said. “The new method is significant because it can detect stage 1 lung cancer patients with relative accuracy.”

Read the [original article](#) on Korea Biomedical Review (KBR).