

Aberrant lipid metabolism identified in early-stage lung cancer

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(HealthDay)—A plasma assay that detects dysregulated lipids has

potential as a screening method for early-stage lung cancer, according to a study published in the Feb. 2 issue of *Science Translational Medicine*.

Guangxi Wang, from the Peking University Health Science Center in Beijing, and colleagues performed single-cell RNA sequencing of different early-stage lung cancers in an effort to improve early detection. Noting that [lipid metabolism](#) was broadly dysregulated in different cell types in early-stage lung cancers, with glycerophospholipid metabolism the most altered lipid metabolism-related pathway, lipidomics was conducted in an exploratory cohort of 311 participants.

The researchers identified nine lipids as the features most important for early-stage cancer detection. A liquid chromatography-mass spectrometry (MS)-based targeted assay was developed using these nine features. On an independent validation cohort, this target assay achieved 100 percent specificity. The assay yielded more than 90 percent sensitivity and 92 percent specificity in a hospital-based lung cancer screening cohort of 1,036 participants examined by low-dose computed tomography and in a prospective clinical cohort of 109 participants. The differential expression of selected lipids in early-stage lung cancer tissues in situ was confirmed by matrix-assisted [laser desorption/ionization MS](#) imaging.

"This study demonstrates the potential application of Lung Cancer Artificial Intelligence Detector v2.0 for lipidomics-based large-scale population screening, in particular for populations with high risk of [lung cancer](#)," the authors write.

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