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Single-Workflow Multiomic Blood Test for Cancer Detection and Monitoring

Researchers at Stanford have developed a blood test technology that detects multiple types of cancer signals at once, using a single, streamlined workflow.

Most liquid biopsy tests look for only one type of molecular signal (either DNA or RNA) shed by tumors into the bloodstream. This limits their sensitivity, especially at early stages when those cancer signals in blood are faint. On the other hand, running separate DNA and RNA tests requires more blood and more complex lab workflows, which is often impractical in clinical settings.

This platform solves that problem by simultaneously extracting and analyzing both DNA-based and RNA-based cancer signals from a small blood draw. Tested in colorectal cancer and healthy donor samples, the assay produces richer, more complete cancer information than either approach alone. Because the DNA and RNA signals capture different aspects of tumor biology, they complement rather than duplicate each other, making the combined readout more informative for both detecting cancer and tracking how it changes over time.

Stage of Development : Proof of Concept

Applications

- Clinical blood test for cancer detection and treatment monitoring
- Research-use assay kit for cancer biomarker discovery
- Monitoring platform for oncology clinical trials

Advantages

- More informative than single-signal tests: captures both DNA and RNA cancer markers from one sample
- Requires less blood than running separate DNA and RNA tests
- Detects a broader range of cancer-associated signals than standard methods

Innovators

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