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Wire Report (McClatchy)
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New blood test may tell if and where you have cancer

New research from a team at University of California San Diego shows that evidence found in cancer blood tests can help doctors identify where the malignant cells are. The researchers developed a new way to screen for a particular kind of DNA in the blood cells that provides clues.

When a cancer tumor begins growing, it takes over territory normally occupied by healthy cells. Those cells are killed off as the tumor takes over space and deprives normal cells of nutrients. In the process, the dying cells release DNA into the bloodstream.

Tissues in the body can be identified by a unique sequence of methylation haplotypes, a set of genes. Searching the DNA released by the dying cells in the bloodstream for CpG methylation haplotypes can indicate where those cells originated.

“We made this discovery by accident. Initially, we were taking the conventional approach and just looking for cancer cell signals and trying to find out where they were coming from,” said Kun Zhang, senior author of the study, explaining the findings. “But we were also seeing signals from other cells and realized that if we integrate both sets of signals together, we could actually determine the presence or absence of a tumor, and where the tumor is growing.”

The researchers identified the CpG methylation pattern of 10 different kinds of tissue: pancreas, liver, colon, brain, kidney, lung, stomach, spleen, blood and intestine. They also analyzed blood and tumor samples from cancer patients to build a database of genetic markers specific to cancer.

Both the presence of a cancer marker and one of the 10 tissue’s CpG methylation haplotypes signaled to researchers that a certain kind of cancer was present. The research has not yet moved to the clinical stage, but being able to locate the cancer is essential to effective treatment.

— by *Teresa Welsh* for *McClatchy News Service*

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