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Researchers develop new technologies to measure key proteins that serve as markers for tumors

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Dr. Amanda Paulovich, whose lab has a leading role in the Beau Biden Cancer Moonshot, will speak April 5 at the American Association for Cancer Research (AACR) annual meeting about her lab's pioneering methods to measure proteins that serve as tumor markers.

From the Human Genome Project onward, we've made a massive investment in science aimed at understanding human genomics. But there's a problem: Proteins, not genes, do most of the work of our cells and are the targets for most of our medicines -- and there's no standardized, reliable way to measure the vast majority of proteins in our bodies.

Into this black hole steps Paulovich, an oncologist and cancer geneticist at Fred Hutchinson Cancer Research Center in Seattle.

She and her team are developing new technologies and assays for precisely measuring levels of proteins that serve as markers for tumors. The goal is to use protein analysis to improve the ability to predict tumor response to cancer therapeutics and to better match patients with the right drug.

Paulovich, who is a member of the Clinical Research Division at Fred Hutch, will speak April 5 at 10:20 a.m. ET at the annual meeting of the AACR in Washington, D.C. Her lecture is titled "Translational mass spectrometry: Making the genome actionable for cancer patients."

"It's advantageous to be able to directly measure the amount of a protein that a patient's cancer has in it, because it's that protein that's going to interact with drugs that we treat the tumor with, most of the time," Paulovich said in a Q&A about proteomics.

The Beau Biden Cancer Moonshot recently tapped her Fred Hutch lab to create tests to measure key proteins that serve as markers for tumors. Her proteomics assays are based on a technology called multiple reaction

monitoring mass spectrometry. Nature Methods named the approach "Method of the Year" in 2012.

"Being the physician in the room order toxic chemotherapies for my patients and not knowing whether it would do more harm than good, it was a daily ethical dilemma," Paulovich said of her experience as an oncologist before she came to Fred Hutch in 2004.

The translational work could lead to companion diagnostics that oncologists could use to make treatment decisions for each patient.

Source:

<https://www.fredhutch.org/>
