PURDUE INNOVATES | Office of Technology Commercialization

Liquid Biopsy for Determining Breast Cancer Subtypes

A liquid biopsy technology isolates and analyzes extracellular vesicles to accurately identify breast cancer subtypes, enabling precise, tailored treatment strategies.

Researchers at Purdue University have developed a method that can differentiate cancer subtypes and aid in early detection for breast cancer. Early diagnosis and identification of the disease may permit earlier intervention and treatment and more successful outcomes for patients. Blood testing aka "liquid biopsy" for early diagnosis and monitoring of cancer is highly attractive; however, the number and complexity of various proteins in the blood makes the identification of appropriate diagnostic markers a serious challenge. This innovation reduces the complexity of the liquid biopsy samples. Extracellular vesicles, membrane encapsulated particles whose contents are protected from enzymes in the blood, are isolated from the blood and used as a source of biomarkers. This technology isolates extracellular vesicles from a patient sample and analyzes their contents to differentiate breast cancer subtypes. With knowledge of the specific breast cancer subtype, doctors can better tailor treatment for the patient.

Advantages:

-Differentiate cancer subtypes

-Allows for tailored treatment

Potential Applications:

-Breast cancer diagnosis

-Subtype identification

TRL: 2

Intellectual Property:

Technology ID
2019-TAO-68555

Category
Biotechnology & Life Sciences/Biomarker Discovery & Diagnostics

Authors
Hillary Andaluz
I-Hsuan Chen
Weiguo Andy Tao

Further information
Joe Kasper
JRKasper@prf.org

Nathan Smith
nesmith@prf.org

View online

Provisional-Patent, 2019-03-03, United States | PCT-Gov. Funding, 2020-03-03, WO | NATL-Patent, 2021-09-03, United States