Medical Xpress

Dual-capture CTC chip efficiently captures breast cancer cells

September 29 2010

Researchers have identified a novel, dual-platform technology, the On-Q-ity Circulating Cancer Capture and Characterization Chip (C5), which they believe is more efficient than the commonly used single-platform device in identifying circulating tumor cells (CTCs) in breast cancer.

Analyzing CTCs in blood can identify cancer cells and cancer cell mutations to provide physicians with methods for improved cancer diagnosis, prognosis and treatment.

In order to efficiently capture CTCs, two capture mechanisms were used to trap CTCs by antibody affinity and size. Gary Palmer, M.D., chief medical officer of On-Q-ity, Inc., Waltham, Mass., and colleagues assessed whether capturing CTCs by using both technologies at the same time was more beneficial and captured a greater number of CTCs than either technology alone.

These laboratory results were presented at the Fourth AACR International Conference on Molecular Diagnostics in Cancer Therapeutic Development, held here.

"It made sense that using both capture methods would be more efficient than either alone. Some CTCs are smaller and often avoid size capture," Palmer said. "Other CTCs have less antigen expression and can also avoid antibody affinity capture. Our dual capture platform provides a better system to ensure that fewer CTCs will be lost."

Using a human breast cancer cell model, the researchers found the On-Q-ity C5 captured a greater number of CTCs; 65 percent of the cells were captured compared to 45 percent of captured cells with the size-based method and 16 percent with antibody affinity.

"Capturing a greater number of CTCs using both mechanisms will hopefully provide better information to help health care providers offer an easier, faster and more accurate diagnosis, treatment prediction and prognosis to their patients," Palmer said.

On-Q-ity researchers are currently conducting additional studies to confirm the usefulness of capturing these CTCs in the clinic, and are learning how to make the processing more sensitive and easier to use. They are also evaluating this platform's use in late-stage breast cancer and colon, prostate and lung cancers.

Provided by American Association for Cancer Research

Citation: Dual-capture CTC chip efficiently captures breast cancer cells (2010, September 29) retrieved 24 April 2024 from
https://medicalxpress.com/news/2010-09-dual-capture-ctc-chip-efficiently-captures.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.