

Dual-capture CTC Chip Efficiently Captures Breast Cancer Cells

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- The On-Q-ity C5 chip enables more accurate clinical decision making
- Chip provides better, more accurate prognosis, diagnosis and treatment prediction.

DENVER — 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](#) [3], 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

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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.

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The mission of the American Association for Cancer Research is to prevent and cure cancer. Founded in 1907, the AACR is the world's oldest and largest professional organization dedicated to advancing cancer research. The membership includes 32,000 basic, translational and clinical researchers; health care professionals; and cancer survivors and advocates in the United States and more than 90 other countries. The AACR marshals the full spectrum of expertise from the cancer community to accelerate progress in the prevention, diagnosis and treatment of cancer through high-quality scientific and educational programs. It funds innovative, meritorious research grants, research fellowships and career development awards. The AACR Annual Meeting attracts more than 18,000 participants who share the latest discoveries and developments in the field. Special Conferences throughout the year present novel data across a wide variety of topics in cancer research, treatment and patient care. The AACR publishes six major peer-reviewed journals: *Cancer Research*; *Clinical Cancer Research*; *Molecular Cancer Therapeutics*; *Molecular Cancer Research*; *Cancer Epidemiology, Biomarkers & Prevention*; and *Cancer Prevention Research*. The AACR also publishes *CR*, a magazine for cancer survivors and their families, patient advocates, physicians and scientists, providing a forum for sharing essential, evidence-based information and perspectives on progress in cancer research, survivorship and advocacy.

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