

New Method and Device Detects Early, Stage I Cancer in a Blood Sample

History of the Collaboration

Dogs were trained to smell ovarian cancer by Dr. Cynthia Otto's team at the School of Veterinary Medicine, University of Pennsylvania.



Nanosensor built to detect what the dogs were smelling by Dr. A.T. Charlie Johnson at the University of Pennsylvania.



Ovarian cancer's VOC signature decoded to detect the cancer using volatile organic compounds (VOCs.)

If the decoded VOC signature is present in a blood sample, the cancer can be diagnosed as early as stage I.

Ovarian cancer successfully detected with 95% sensitivity and 99% specificity.

These accurate results were achieved in fifty-eight lab-bench tests at the University of Pennsylvania and mark an important step in bringing early-stage ovarian cancer screening to asymptomatic patients. Early detection of cancer increases survivability from an average of 10-15% to over 90%. Currently, no reliable screening exists for gynecological cancers at any stage.

New method uses volatile organic compounds (VOCs) to expand liquid biopsies into early detection.

Liquid biopsies have several advantages over tissue biopsies. They are less invasive, less expensive and can be easily repeated. These tests look for various components floating in blood - predominantly tiny fragments of DNA and RNA from cancer tumors. Unfortunately, the rarity of these fragments at an early stage make collection and analysis challenging. In contrast, VOC Health's method uses the VOCs created by bio-responses in the body, prior to tumor formation. VOCs can be found early and eliminate the high cost of DNA/RNA sequencing. This allows for an affordable, early detection platform that is scalable to other cancers.

Developing a scalable platform to screen asymptomatic patients for cancer.

Our plan includes miniaturizing the current lab-bench apparatus for commercial use, adding additional nanosensors to increase sensitivity and obtaining FDA clearance. As additional cancer signatures are decoded, networked devices can be scaled through software updates. Initial cancer targets include additional gynecological cancers followed by prostate and colorectal cancers. This would result in early detection methods for 49% of female and 30% of male cancers¹ and give VOC Health a meaningful share of the estimated \$165 billion global cancer diagnostic market.²

VOC Advantages over other Liquid Biopsy Methods

- VOCs exist early, at onset of disease, prior to tumor formation
- Higher test accuracy reduces false positives/negatives
- Eliminates expensive DNA sequencing
- No reagents required

Our Platform Can Bring Early Detection to Everyone

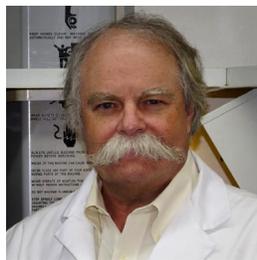


- Target test price <\$400
- Devices deployed in any community
- Retain ownership of devices
- Share revenue with partners

VOC Health Leadership Team



Richard Postrel
Founder, CEO
VOC Health



Prof. Ian Hunter
Chief Development Officer
VOC Health



Dr. Ronny Drapkin
Dir. Clinical Operations
VOC Health



Dr. Cynthia Otto
School of Veterinary Medicine
University of Pennsylvania



Dr. A.T. Charlie Johnson
School of Arts and Sciences
University of Pennsylvania

For more information, contact Jackie Cushman (404) 317-7120, jcushman@vochealth.com



Click for an
introductory video.

