

Abstract Submitted
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Blood based cell biopsy for early detection of cancer¹ CHA-MEI TANG, DANIEL ADAMS, Creatv MicroTech, Inc., DIANE ADAMS, Rutgers, the State University of New Jersey, R. KATHERINE ALPAUGH, Fox Chase Cancer Center, MASSIMO CRISTOFANILLI, Northwestern University, STUART MARTIN, University of Maryland School of Medicine, SARANYA CHUMSRI, Mayo Clinic Cancer Center, Jacksonville, JEFFREY MARKS, Duke University Medical Center — Early detection (ED) of cancer holds the promise for less aggressive treatments and better outcome. However, there are few accepted methods for ED. We report on a previously unknown blood cell found specifically in the peripheral blood of many solid tumors. They are defined as Cancer Associated Macrophage-Like cells (CAMLs) and are characterized by large size (25-300 μ m) and expression of cancer markers. CAMLs were isolated on precision filters during blood filtration. We conducted prospective studies in breast cancer (BC) to ascertain CAML prevalence, specificity and sensitivity in relation to disease status at clinical presentation. We report on two related but separate studies: 1) the isolation of CAMLs from patients with known invasive BC, compared to healthy volunteers and, 2) a double blind study conducted on women undergoing core needle biopsy to evaluate suspicious breast masses. The studies show that CAMLs are found in all stages of BC and suggest that detection of CAMLs can differentiate patients with BC from those with benign breast conditions and healthy individuals. This non-invasive blood test can be potentially used for ED of BC and other malignancies after validation studies with the advantage of a minimally invasive procedure and longitudinal monitoring.

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