High Sensitivity Liquid Biopsy Technology for Cancer Detection and Monitoring

4th Annual International Symposium on Technology in Medical Devices
February 5, 2018
UC Irvine Calit2
Mission/Overview

• Dramatically improve patient quality-of-life via highly sensitive liquid biopsy solutions
• Patented nanotechnology-enabled rare cell enrichment and molecular assays support oncologists and physicians for cancer diagnostic and therapeutic management.
• Focus on prostate, pancreatic, liver and lung cancer (24 Peer-reviewed publications).
• $2 M+ SBIR/U01/R01 funding supported by NIH/NCI.
The People behind the Company

Medical Advisory Board

Edwin Posadas, MD
Urologic Oncology
Cedars Sinai Medical Center

James Tomlinson, MD PhD
Surgical Oncology
UCLA Health Systems

Vatche Agopian, MD
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UCLA Health Systems

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Ryan Zhang
QC Specialist
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Tim Chen
Lab Technician
CytoLumina

CytoLumina 2018 (C)
Circulating Tumor Cell (CTC) Market Challenge/Opportunity

• **Main Challenge:** Lack of **sensitivity** and **specificity** leads to false positives and false negatives in patients.

• **Current products** on the market do not meet physicians’ needs, and are **not** clinically adopted.

Working mechanism of Velcro straps

Harnessing Velcro-like interactions to achieve unprecedented cell-capture efficiency

Nanostructured cell surface components

Enhanced Topographic Interactions

Anti-EpCAM confers CTC capture specificity to NanoVelcro substrates

Our Solution: Patented CytoTrapNano™
Case Study: CytoTrapNano™ for Advanced Prostate Cancer Treatment Monitoring

CellSearch® (J&J)  
CytoTrapNano™

*Source: Chen JF et al. Cancer. 2015 Sep 15;121(18):3240-51.*

Edwin Posadas, M.D.

Cedars-Sinai Medical Center.
Business Model:
Sell Medical Device, Chips/Reagent Kits & Lab Services

CTC Capture Device System

CytoTrapNano™ Chip

CTC Reagent Kits

Lab Services

CTC Enumeration Service

Liquid Biopsy Total Assay Service
Patented nanotechnology focusing on rare cell enrichment and capture.

Large rapidly growing target markets (US and Asia Pacifica).

Expert Research/Regulatory/Clinical/Business team.

High Technology Readiness Level of product pipeline (10-year NIH sponsored research, solid publications, and clinical data).

Continuing SBIR funding opportunities from NIH/NCI and Cancer Moonshot Program.

Key to success of liquid biopsy market for cancer diagnostic and therapeutic management.
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