



Personalized Cancer Therapy and Disease Monitoring

Microfiltration for Circulating Tumor Cells



Needs

- **> 10 million cancer patients in the US**
 - 1.5 million new cases each year
 - Metastasis causes 90% of cancer deaths
- **Tissue biopsy to determine treatment**
 - Risky, costly
 - To determine changes in the tumor, new biopsy
- **MRI and CT for disease monitoring**
 - Expensive
 - Time lag

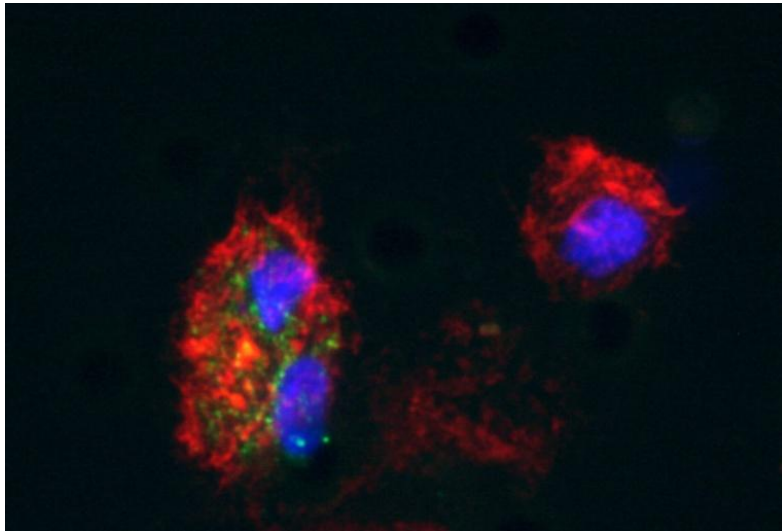
Opportunity: Circulating Tumor Cells (CTCs)

- **CTCs: metastatic cells in the blood stream**
 - As few as one or two among one billion blood cells
 - Larger than blood cells
 - Carcinomas ~ 80% of cancers
 - The major cancers: breast, prostate, colon, lung

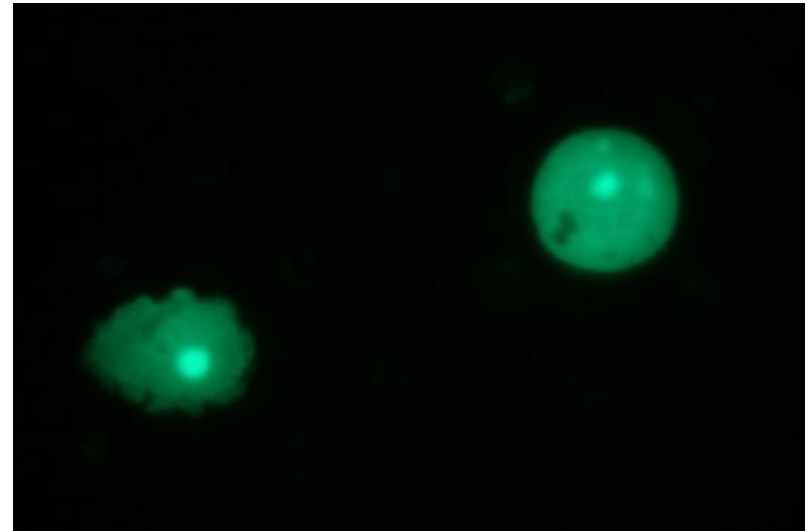
Market Opportunity

- **“Liquid biopsy” providing personalized therapy**
 - Less invasive than tissue biopsy
 - Diagnostic methods:
 - Gene mutation
 - mRNA expression
 - MicroRNA expression
- **Monitor treatment response, relapse**
 - less expensive, more timely than MRI or CT
 - Diagnostic method: Enumeration

Microscope Images of Tumor Cell Captured on Microfilter



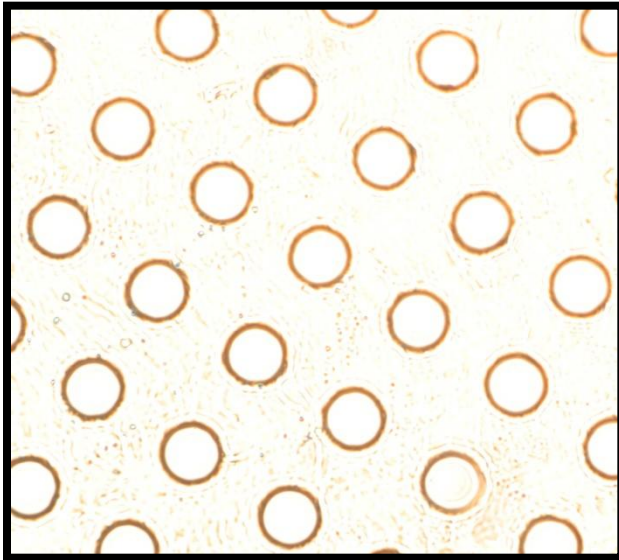
**Fluorescently stained cancer
cells**



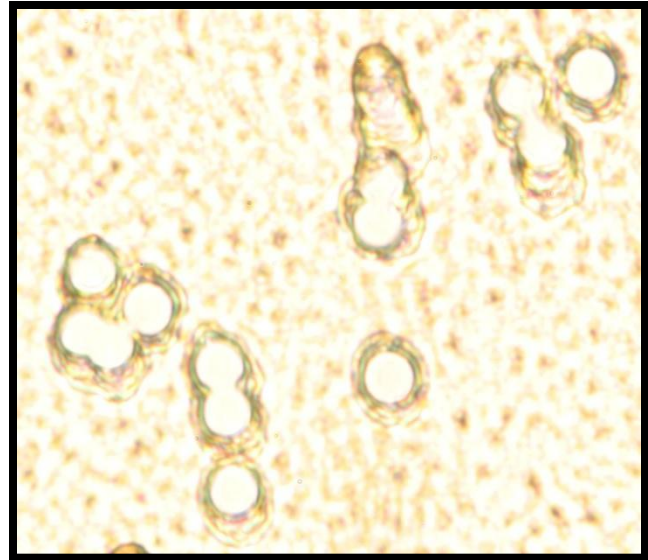
GFP expressing MCF-7 cells

Comparison of Microfilters

Creatv's filter



Track etch filter



Strategic Partners Sought

- **Pharma: Companion diagnostic for indicated therapies, disease monitoring**
- **Medical Device: Personalized therapy, novel assays**
- **International distribution**
- **Non-cancer applications**