Docket #: S13-469

Methods to Detect CTCs and Other Rare Cells

Researchers in Prof. James Swartz' laboratory have developed a rapid bioluminescence method for detecting and enumerating circulating tumor cells (CTCs) and other rare cells. This invention utilizes novel nanoparticle reagents which can specifically bind to cells of interest. Then the bound nanoparticles are activated to generate light which is detected by a CCD camera system for highly parallel analysis of the labeled cells. This technology could be used for point of care diagnostics for active surveillance of cancers and to monitor the effectiveness of cancer treatments.

Applications

- **Point-of Care Diagnostics:**
  - enumeration of CTC for cancer surveillance, treatment monitoring, and predicting the course of the disease
  - isolation of other rare cells or biological entities (such as stem cells, bacterial cells or viruses)

Advantages

- **Rapid, parallel analysis**
- **Cost effective**
- **Specific** - functional groups can be attached to the nanoparticles to recognize cell-specific surface markers

Publications

- PCT Patent Published: WO 2015/070079

Patents

- Published Application: WO2015070079
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