Adoption Success: Expansion Of Rapid Screening for Monitoring Signaling Changes

Background

Cell Biosciences' novel nano-immunoassay screening method is being adopted in an ever-increasing range of institutions, thanks to an innovative collaborative effort between Stanford's Human Immune Monitoring Core (HIMC), Comprehensive Cancer Center, and Cell Biosciences.

The precise screening assay quantifies changes in phosphorylated and non-phosphorylated protein isoforms in tiny samples. Notably, the assays are simple, rapid, and relatively low in cost.

The centralized location of the instrument, and unique collaborative environment have enabled rapid development and adoption of Firefly assays - first within Stanford, and now extending to other institutions, both academic and commercial.

HIMC: Speeding Development and Adoption

The successful adoption of Cell Biosciences technology was made possible though a unique marriage of the Human Immune Monitoring Center (HIMC) and the Stanford Comprehensive Cancer Center.The HIMC Shared Resource is the central hub focused on performing assays that measure biomarkers from any human sample.These measurements can be made on the genomic, proteomic and metabalomic levels from immune cells, serum components and tissue which can be pivotal determinants in the natural history of infectious diseases, autoimmune disorders, and cancer.Those biomarkers that are specifically relevant to cancer could be changes in tumor signaling pathways, serum cytokines, immune cell subsets or gene expression in both diseased and normal material.

The HIMC also has particular expertise in monitoring the immune response, which has proved helpful to Cancer Center investigators interested in provoking such responses in cancerous cells and tissues.The collaboration offers state-of-the-art services to all Stanford faculty, students and staff engaged in clinical studies. Most importantly, the collaborative environment established serves as a proving ground where clinicians, basic researchers and technologists can come together to innovate and translate basic research into clinical practice.This is accomplished through collaborations with medical researchers at Stanford and other research centers as well as leading biotechnology and pharmaceutical company researchers. A flexible approach is used — providing a service center or collaborator — depending on the type of project and whether or not significant development efforts are needed.

Rapid, Logical Expansion

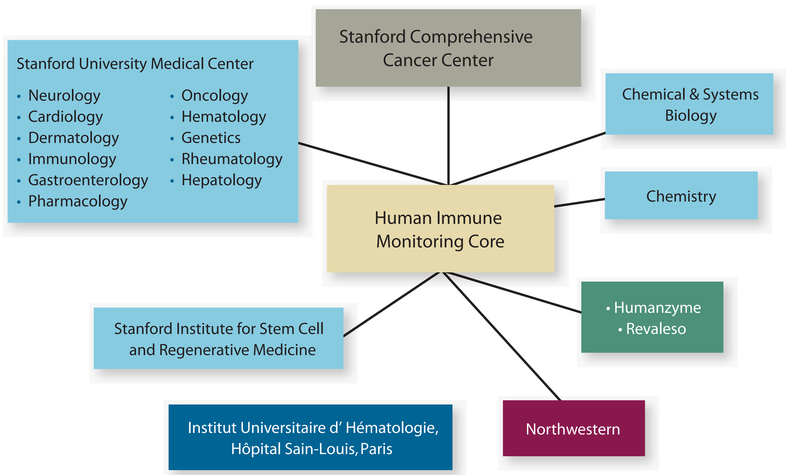
When the Firefly was introduced at the HIMC, Stanford's Medical Center users were the first to apply Firefly assays to their work.This rapidly expanded to the Comprehensive Cancer Center, Stanford Institute for Stem Cell and Regenerative Medicine, and various Stanford campus departments. As the advantages of the technology became evident, additional universities and companies began making use of the system to move their own research forward.

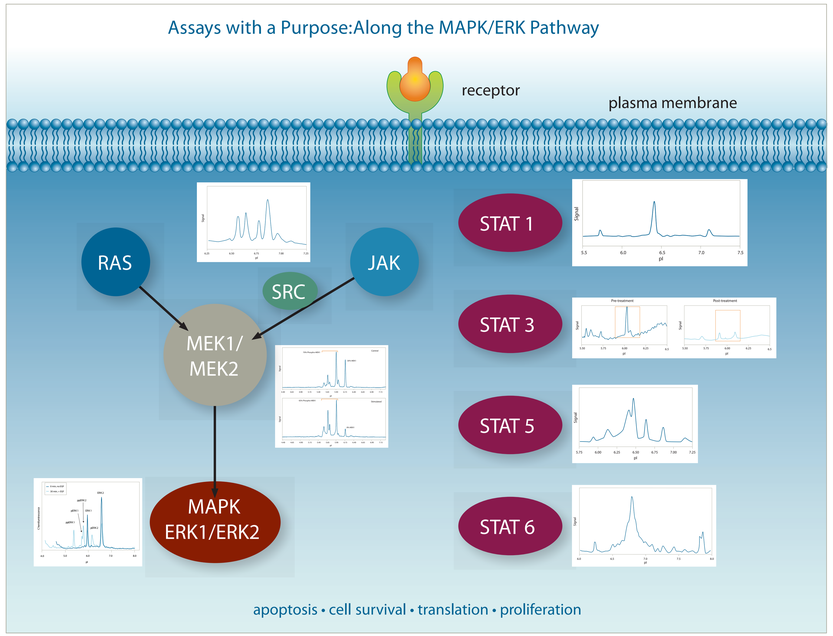
Users Speak: Why Cell Biosciences Technology?

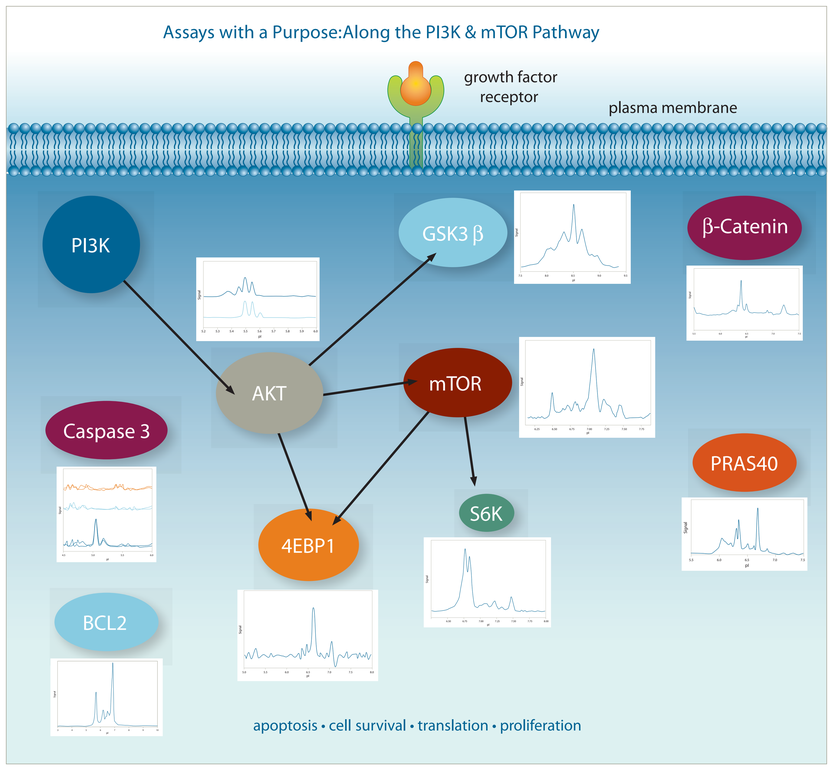
Reasons given for adopting the technology include:

- Determining percent phosphorylation
- Working with tiny samples
- Resolving individual isoforms

The Stanford HIMC





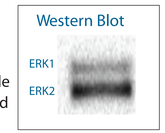


Results on Display — An In-Depth Look

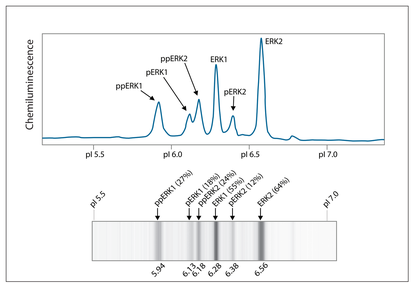
Visit poster #5255: A rapid screening method for monitoring signaling changes in the monocyte cell line U937 session, for an in-depth look at Firefly technology at work.

Session:	New Approaches and Technologies to Monitor Signaling in Cancer
Time:	Wednesday, Apr 22, 2009, 8:00 AM -12:00 PM
Location:	Hall B-F, Poster Section 22, Board 13
Authors:	Ying-Wen Huang, Fernando Shahijanian, Debabrita Deb-Basu, Alice Fan, David Voehringer, David Hirschberg. Stanford University, Palo Alto, CA, Stanford University, Stanford, CA, Cell Biosciences, Palo Alto, CA

Refresh Your Point of View: Novel Applications



Conventional Western blot results are variable, semi-quantitative, and provide limited isoform identification. ERK1 and ERK2 appear as two poorly resolved bands using Western blot analysis. In contrast, the CB1000 resolves six bands: dual, mono, and non-phosphorylated isoforms of ERK1 and ERK2.



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