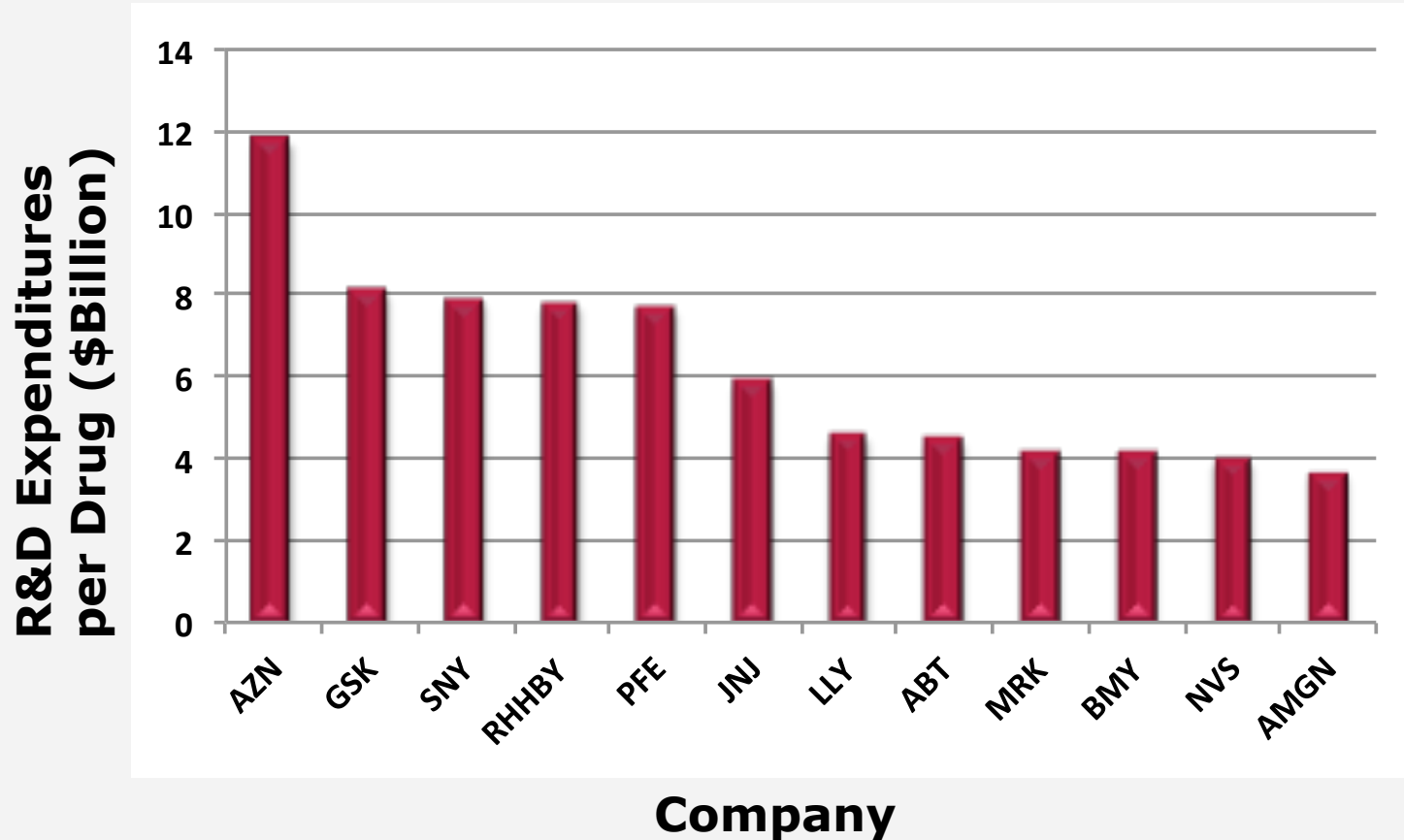

Pioneering Technology for Cell-Based Drug Discovery



Deborah J. Moshinsky, PhD
March 6, 2012

Extraordinary Cost of Developing Drugs

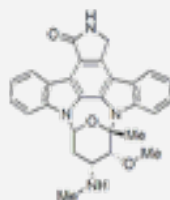
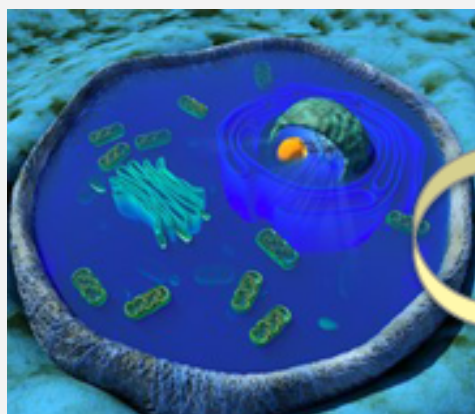


Average Cost Per Drug of \$6.2 Billion US Dollars

From Forbes.com, Feb. 10, 2012 'The Truly Staggering Cost of Inventing New Drugs'

Increasing Efficiency in Drug Discovery

Utilizing Systems Closer to Human Physiology



**More Physiologically
Relevant Results**

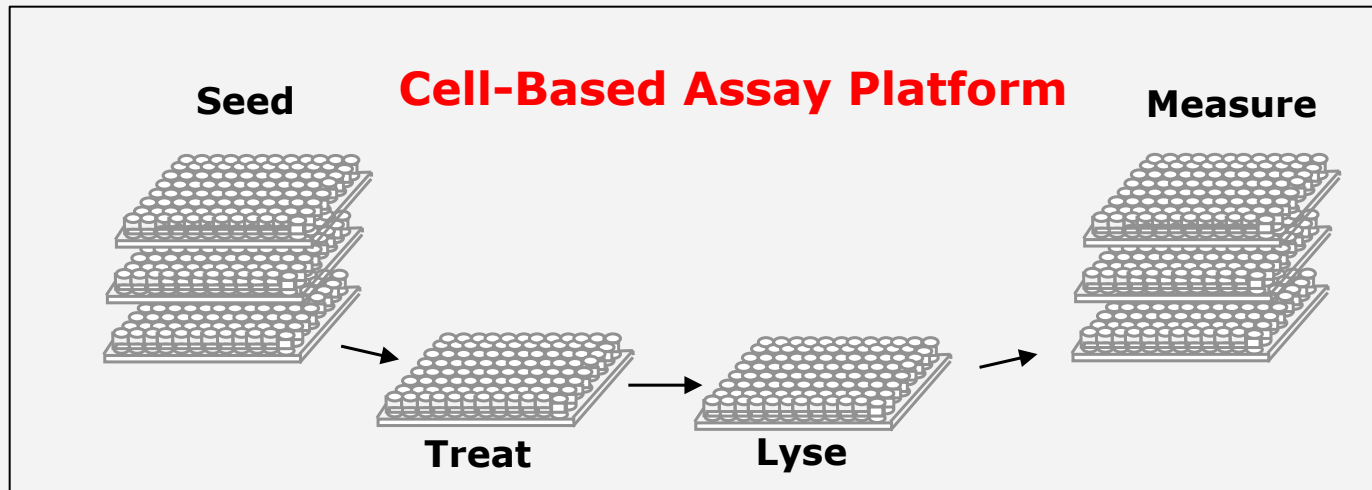
Cellular Assays Yield Additional Information

- Target Inhibition
- Membrane Permeability
- Cellular Metabolism
- Compound Localization
- Cofactor Concentration
- Functional Effects

Barriers to Cellular Assay Analysis

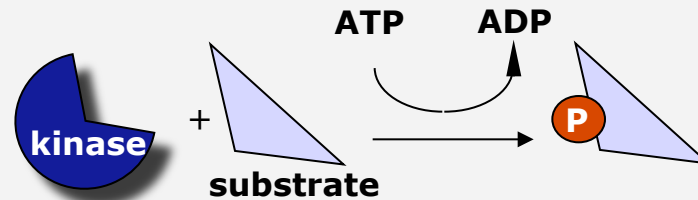
- Cell-based assays are difficult to develop
 - can take 3-6 months per project
- Data from cellular assays are difficult to interpret
 - complex interactions within cells

Simplifying Cellular Assay Testing



- **Streamline cell-based assay development**
 - save up to 5 months development time
- **Remove cellular complexities from data interpretation**
 - build systems to yield clear results

Cell-Based Kinase Assay Platform



- **Kinases are important therapeutic targets**
 - cancer, inflammation, etc.
 - known 'druggable' target class
 - more than 10 kinase inhibitors on the market for oncology (>\$15 Billion market size)
- **CAI's Cellular Kinase Platform Impact**
 - faster assay development
 - clearly interpretable data
 - Mechanism-of-action studies
 - efficacy and selectivity data
 - impact on drug safety

Competition for CAI Platform

Competitor	Limitation	CAI Advantage
1	Non-human kinases Non-uniform process	Human kinases Uniform, scalable process
2,3	Only ~20% of kinase coverage possible with technology	Theoretical coverage of all kinases
4	Assays specific for each customer	Large, uniform panel available to all
5	Complex cell system; difficult to interpret data	Simplified system for easy data interpretation
All	Currently very small assay panels (10% of total kinases)	Aggressive plans to build a large panel

IP Position

✓ ***Initial Patentability Search***

Freedom to operate

Ability to Patent

✓ ***Scientific Basis in Public Domain***

*CAI introduced significant
advancements*

✓ ***Proof of Concept Demonstrated***

*Provisional patent to be filed
next month*

CAI Complete Offerings

Proprietary Platform

- Panel of cell-based kinase assays
 - over-expression of kinase and/or substrate
- Uniform format
 - streamline assay development and screening
- Multiplexing capability
 - up to 3 kinases of interest
 - drug-resistant mutant studies
- Singleplex assay POC generated
 - compound screening service available
 - custom assay development

Drug Discovery Services

- Custom assay development and screening
 - biochemical or cell-based
 - protein, or phosphorylation levels
- MOA studies
 - mode of inhibition
- Cell-line services
 - generation, propagation, scale-up
- Frozen cell production
 - assay-ready screening
- siRNA knockdown
- Oncology functional assays
 - eg. cytotoxicity and apoptosis

Thank You!

CAI Management Team

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