

HUGO 2008 Abstract for Detection Methodologies & Monitoring

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Title: “The Past, Present, and Future of High Content Screening”

In recent years, high-content automated microscopic imaging has become an extremely powerful tool for dissecting biological pathways and phenotyping cellular processes in living or fixed cells. From the beginning, high-content screening/high-content analysis (HCS/HCA) has offered the promise to alleviate bottlenecks in the drug discovery process by providing more biologically and clinically relevant outcome measures in individual cells using sophisticated imaging and analysis algorithms, allowing better decisions to be made in advancing and optimizing new drug hit and lead candidates. This talk will discuss key detection methods and analysis tools that have been developed for high-throughput fluorescent microscopic imaging—the development of biological tools in parallel with these instrumentation technologies has given rise to today’s successes in using these high performance platform systems as an integral part of the drug development process. I will use case studies that demonstrate the utility of HCS/HCA to monitor cellular markers for disease progression and/or modification of biological signaling, with emphasis on methods and technologies used to overcome obstacles in translational and drug development efforts in academia and the pharmaceutical industry.