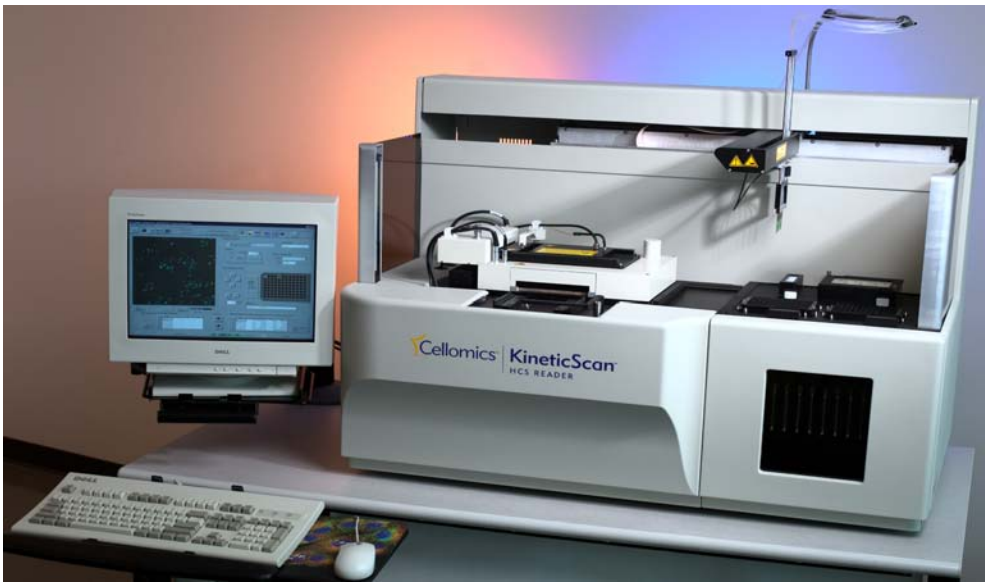
Cellomics™

*Shifting Discovery into High Gear*




# KineticScan® HCS Reader

An automated solution for analysis of cellular and intracellular spatial parameters, over time, in populations of living cells.

*Cellomics Catalog #N01-0015*

### High Resolution Cellular and Sub-cellular Imaging

Monitor and analyze multiple, individual cells with sub-cellular resolution. Data reveals heterogeneity of kinetic responses and enables researchers to make better decisions by observing correlations that are not revealed in well-average responses.

### Kinetic Assay Scheduling Software

Permits fully automated, unattended execution of complex, live cell experimental protocols involving data acquisition, processing and analysis, as well as pipetting activities for increased productivity.

### Integrated Liquid Handling System

Fully functional liquid handling for compound and reagent delivery, mixing and cell washing during live cell experiments.

### Onboard Environmental Control

Enables live cell experiments by maintaining precise physiological conditions throughout the assay time course, resulting in more biologically meaningful results.

### Flexible Optical System

Combining a full spectrum light source with automated filters and objectives provides flexibility for a wide variety of fluorescent reporters, including FRET reagents and dyes for ratio metric imaging.

### Proprietary BioApplications

Reduces assay development time by providing researchers with “plug and play” software modules and the flexibility to adjust assay parameters for measurement of a wide range of biological outputs.

Cellomics™ | KineticScan™ HCS READER

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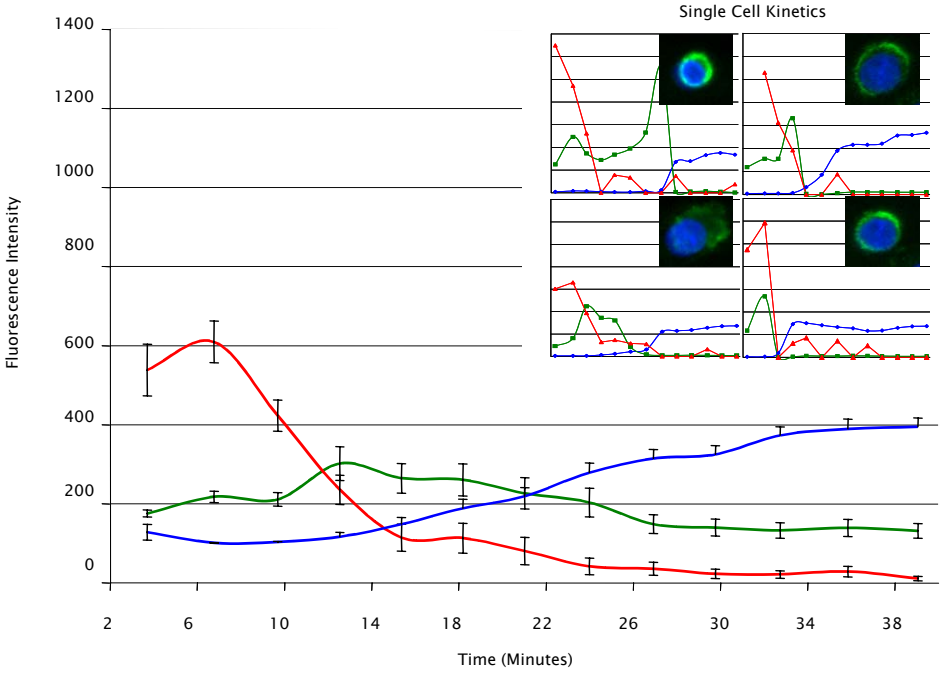
# The KineticScan™ HCS Reader Allows Direct Observation of Individual Cell Responses in a Population




Live cells were monitored for three separate indicators of cell health. Upon addition of a toxin, the aggregate response of a population of cells exhibits a rapid drop in mitochondrial potential (red), followed by a modest increase and slow decay in cytosolic calcium (green), and a gradual increase in membrane permeability (blue).

Analysis of four individual cells (inset graphs) enhances the details of the sequence and timing of events identified in the well-level analysis. In contrast to the average population response, the changes for all three indicators show unique profiles when viewed at the single-cell level.

## KineticScan HCS Reader Specifications

**Instrument Hardware**

- 5X, 10X, 20X, and 40X Magnification Objectives
- Fully Automated Optics
- 1500-hour Mercury-Xenon Illumination Source
- Filters spanning a wide spectral range to enable all commonly used fluorophores
- Selectable laser-based or software-based auto focusing
- High resolution cooled CCD camera

**Integrated Live Cell Chamber**

- Temperature control (ambient to 45°C)
- Carbon dioxide control (ambient to 10%)
- Supplemental humidity to reduce evaporation

**Integrated Pipette System**

- Eight-channel pipette system with independent control of each channel
- Compatible with 96-well glass-bottom and plastic-bottom microplates
- Temperature regulated bulk reagent station (4 to 45°C)
- Two ambient temperature compound or reagent plate positions

**Instrument Computer Control System**

- KineticScan software for control of data acquisition, processing, analysis and pipette scheduling
- 1.7 GHz Dual Pentium 4 processors with Microsoft® Windows® 2000 Operating System
- CD/DVD-RW and CD-ROM
- 17" high-resolution monitor
- Color Ink Jet Printer

**Data Management System**

- Cellomics® Store Software/Hardware with 1TB image and data storage capacity
- vHCS™:View Client for remote data access

**Target Activation BioApplication**
(included with instrument)

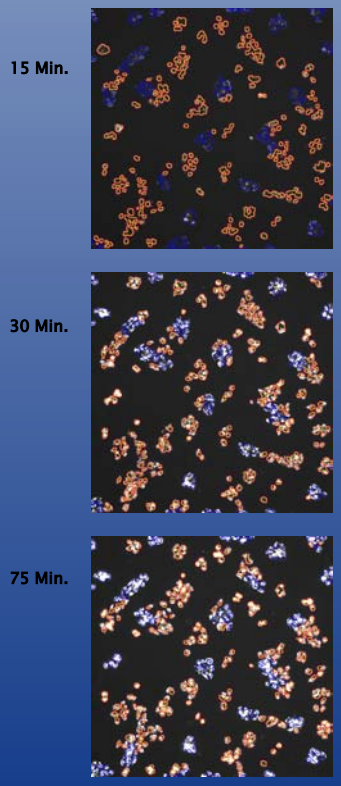
- A six-channel application that measures fluorescence intensity and kinetics on a cell-by-cell basis

**Compartmental Analysis BioApplication**

- A six-channel application that measures redistribution events such as receptor internalization and cytoplasm to nucleus translocation
- Calculates intensities and intensity ratios in four cellular domains for each image
- Able to detect and quantify "spots" in single cells

**Expanding list of biological measurements that have been performed on the KSR using either Target Activation or Compartmental Analysis BioApplications:**

- Multiple Drug Resistance (MDR)
- Cell Spreading
- Receptor Internalization
- Calcium, Sodium and Potassium Mobilization
- Plasma Membrane Potential
- GFP Expression
- Cytosolic pH
- Lysosomal pH
- Mitochondrial Transmembrane Potential
- Cell Permeability
- Cell Proliferation
- Cytotoxicity
- Oxidative Stress
- Nitric Oxide
- Cell Motility
- GPCR Signaling Events
- Glutathione depletion
- Apoptosis




The KineticScan HCS Reader enables automated time course profiling of a fluorescent MDR substrate entering cells after treatment with an inhibitor of MDR activity.

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