



Thermo Scientific Cell Analysis
Software and Informatics Products

a measurable difference for everyone

- Thermo Scientific HCS Studio Cell Analysis Software
- Thermo Scientific Store Image and Database Management Software

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High Content Analysis



High Content Screening (HCS), also known as High Content Analysis (HCA), image cytometry, quantitative cell analysis or automated cell analysis, is an automated method that is used to identify substances that alter the phenotype of a cell in a desired manner. This technology is primarily used in biological research and drug discovery and combines fluorescent microscopy, automated cell calculations and phenotyping using image processing algorithms and informatics tools for the user to make decisions about a treatment.

The Inventors and Leaders in HCA

The Thermo Scientific™ Cellular Imaging and Analysis product line (formerly Cellomics) offers a full complement of hardware, analysis and control software, and informatics database tools to fully implement a high content program in your laboratory. By its nature, HCA generates a large amount of data and images. Powerful software analysis and scalable informatics software allows you to address hundreds of different biological phenotypes to discover more about a cell and its function.

Software and Informatics Tools

The Thermo Scientific™ Cell Analysis and Informatics portfolio of products include wide-ranging tools that enable a scientist to implement quantitative cell-based screens. The Thermo Scientific™ HCS Studio™ Cell Analysis Software and the Thermo Scientific™ Store™ Image and Database Management Software delivers robust and simple — yet powerful — analysis and results tools to uncover information about cells and cell populations.

HCS Studio Cell Analysis Software

HCS Studio Cell Analysis Software is the engine behind Thermo Scientific™ High Content Products. Modeled after common scientific and business applications, HCS Studio Cell Analysis Software packages our cell-based quantitative analysis software into a simple, easily navigated user interface. All your analysis, data visualization and data management tools are now available at the touch of a button.

Store Image and Database Management Software

Store Image and Database Management Software is the solution for automated HCS image and data management. Designed to run on either Microsoft™ SQL Server™ or Oracle™ Databases, Store Image and Database Management Software SE offers rapid, highly scalable, global access to all cell-based high content data and images.



Instrument and Application Control



Workflow-oriented and simple to navigate, HCS Studio Cell Analysis Software allows access to all instrument configuration and control functions with intuitive tools. Starting with the Thermo Scientific™ HCS Studio™ Navigator Application, the user selects from a menu of tailored applications based on the desired function. With the Thermo Scientific™ Scan™ Application, users follow simple tasks from image capture through imaging analysis and visualization.

HCS Studio Cell Analysis Software has broad functionality classified into three main sections:

- Simple instrument control
- Image analysis tools
- Image and data visualization tools



Simple, Intuitive Instrument Control

Launched through the Navigator Application, the Scan Application is the single place for imaging cells, optimizing filters and exposures, and ultimately scanning a plate. Built to interact with the hardware, the Scan Application controls:

- Image acquisition parameters
- Algorithm settings
- Population and subpopulation measurements
- Cell-, field- and well-level features to store
- Plate name and starting location in a well for imaging and analysis

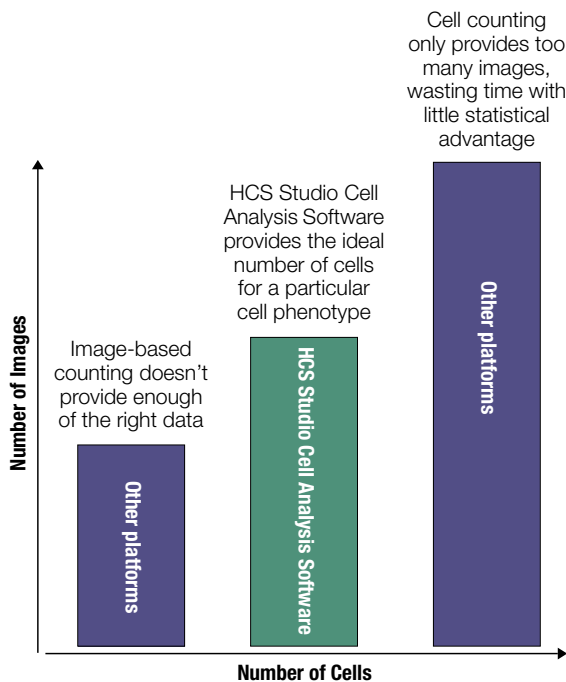


Assay Protocols

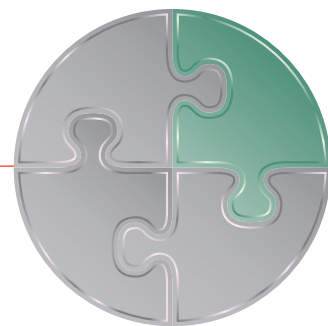
Create your own, or use pre-configured templates for image analysis, the choice is yours. With an assay protocol, you can set up image acquisition details, configuration parameters for algorithmic analysis, define population and subpopulation characteristics, and save meaningful reported features at the cell-, field-, and well-level.

Finding the Right Number of Cells

A common challenge in quantitative imaging is finding the right number of cells with a phenotype that also demonstrates statistical relevance. With HCS Studio Cell Analysis Software, you can apply filters to include a particular cell phenotype and collect the right number of images, no more or no less. HCS Studio Cell Analysis Software is more than just in-line cell counting; it is online, cell phenotyping that gets you the number of cells you want the first time, not in multiple runs.



The HCS Studio Advantage



What makes HCS Studio Cell Analysis Software different than all other quantitative software programs is the ability to balance flexibility with ease of use. HCS Studio Cell Analysis Software does this expertly through intuitive interfaces, intelligent design and powerful image analysis tools that lead to meaningful dynamic measurements at the cell-, well- and field-level.

Advantage One – Open Access to Many Image Formats



Image Import and
Conversion Tool

High Content Imaging platforms generate a massive amount of images but the analysis software has been tailored to use only in conjunction with the images produced by these systems. HCS Studio Cell Analysis Software allows image formats from a variety of sources and in several different file types (TIF, DIB, BMP, JPEG, etc.) to be imported singly or in batch, organized for analysis, and then processed using the powerful imaging analysis tools. Leverage more than just your HCA platform by using images from HCS Studio Cell Analysis Software to open up quantitative image analysis.

Advantage Two – Ability to Compare and Optimize Two Biological Extents

When developing an assay, true negative and positive controls are essential to understand the bounds of your assay. The same applies to optimizing your image processing. HCS Studio Cell Analysis Software allows you to apply and interact with two biology types simultaneously without the risk of bias to one treatment or another.

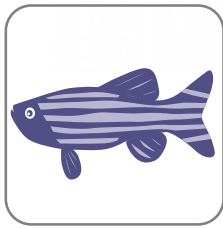
Advantage Three – Image Analysis that Makes Sense

HCS Studio Cell Analysis Software offers simple workflows to help you develop and optimize an assay without functionality loss. With simple and straightforward task-oriented approaches to image algorithm development, new users are immediately productive. When a more complex assay is designed, HCS Studio Cell Analysis Software scales seamlessly, providing a host of algorithmic, visualization and online help tools that reduce the complexity and time investment of developing assays.

From Optimized Assay Settings – Users of HCS Studio Cell Analysis Software start with more than 30 pre-established assays that can be optimized to cell-line and particular phenotype. Driven by intuitive icons, you can simply choose the assay and magnification of the optimize protocol, confirm settings, and begin the scan. We have done the work, so you don't have to.



Cell Cycle Assay



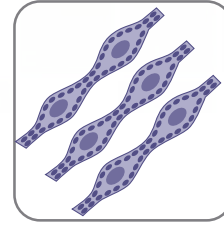
Zebrafish Toxicity Assay



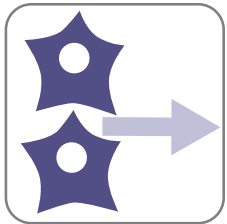
Synaptogenesis Assay



DNA Damage Assay



Myotube Formation Assay



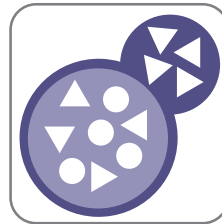
Migration Assay



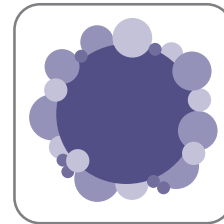
Invasion Assay



Cell Motility Assay



Autophagy Assay



Apoptosis Assay

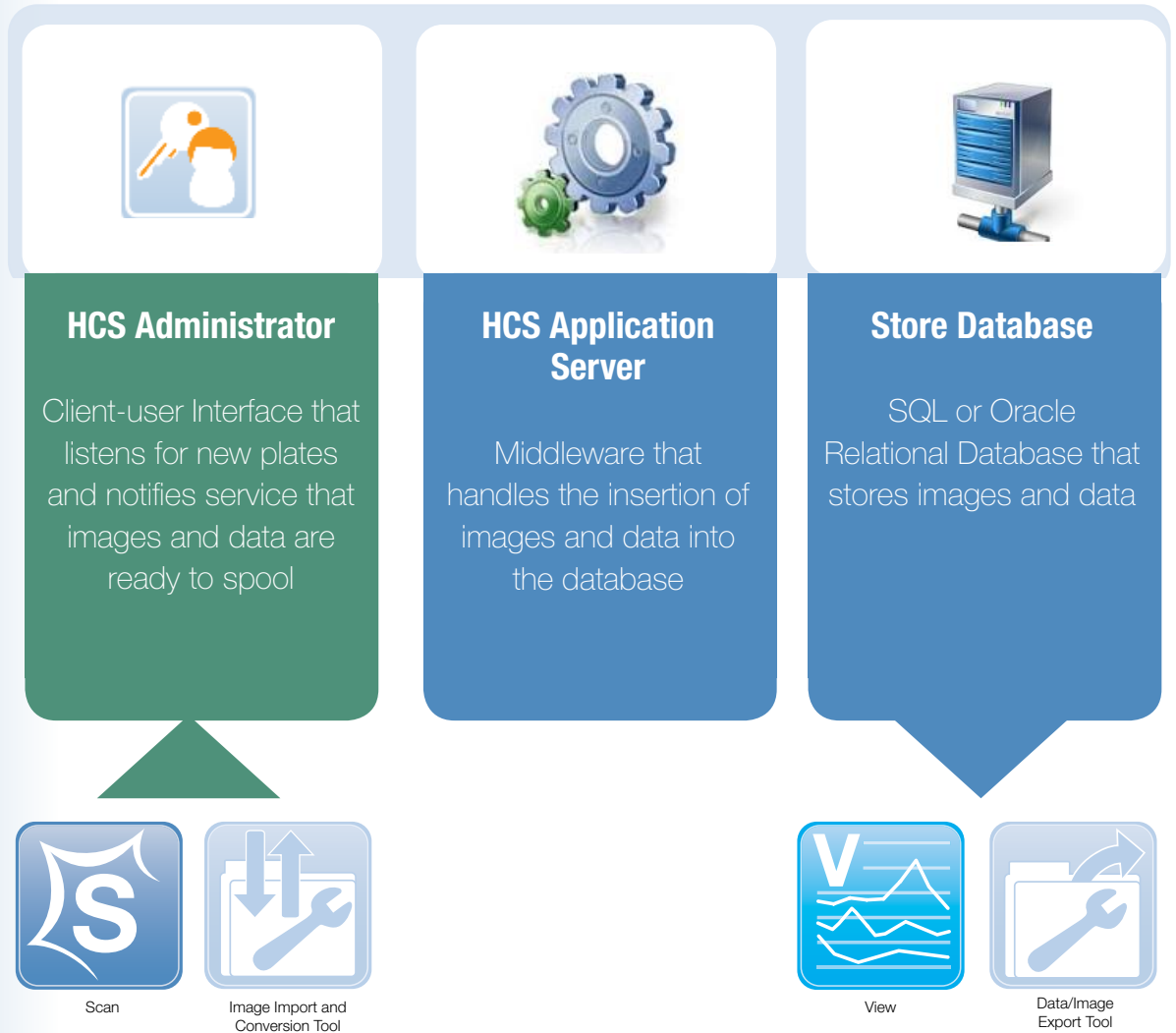
Build Your Own Assay – Create your own assay from scratch using the flexible tools and design of HCS Studio Cell Analysis Software. With instant feedback you can control hundreds of options including:

- Background Correction
- Object Segmentation
- Spot/Granular Detection
- Region of Interests
- Sensitivity of Detection
- Projected Image Format
- Contrast of Images
- Object/Target Phenotype
- Phenotypic Gating

Seamless and Scalable



Data comes in many forms, and the only way to manage and make sense of the data is to have a robust image and data management solution. The Store Image and Database Management Software is designed to accept both image and feature data from multiple source types, allowing both scientist and IT groups to easily work with quantitative data.



Store Express

Without Store Image and Database Management Software, your data isn't secure, that's why Thermo Scientific™ Store™ Express Image and Database Management Software is included with every Thermo Scientific High Content Platform. With 10GB worth of space for data, the Store Image and Database Management Software Base Edition allows you to get started and be productive from your first day of use.

- Store SQLite™ included with all high content platforms
- Sufficient for moderate use with active data management program
- Out-of-the-box use with no IT overhead
- Fully functional with no capabilities hit

Scalable

Store Image and Database Management Software's optional configuration includes:

- Scalable SQL or Oracle to accommodate screens
- Installed on servers for capacity and management
- Expert guidance for IT implementation
- Preferred for industry partners

Screening

Store Image and Database Management Software expands to a server-based platform, allowing huge amounts of images and data to be managed. With Store Image and Database Management Software, import, convert and spool images from any platform or client running HCS Studio Cell Analysis Software. Share data and images across your organization for a fully collaborative work environment.

Seeing is Believing



Qualitative Analysis – With HCS Studio Cell Analysis Software, viewing images has never been easier. With quick access to an entire plate's images, you can quickly determine visually a phenotypic change to your cells. Whether you use the image browser capabilities to visually find or confirm hits, or just as a high level quality control tool, the HCS Studio Cell Analysis Software, combined with the Store Image and Database Management Software tools, provide high-resolution access to all of your images.

Quantitative Results – Even the most subtle cell changes are revealed using HCS Studio Cell Analysis Software's data visualization tools. Investigate when and how much phenotypic change occurs in each cell or well, or even across plates.

Population Characterization – Getting More From HCA

Your assay deserves more. Whether using well-level measurements for total population responses or single-cell measurement for screening, HCS Studio Cell Analysis Software and its visualization tools allow you to investigate responses from the hundreds of measurements made.

You can then combine single-cell phenotypic measurements and generate "Events" that can describe a subpopulation of cells using the multiplexing capability of HCA. The tremendous power of high content and Thermo Scientific™ High Content Tools allows you to quickly and accurately build phenotypic experiments in a single automated run.

Individual Cell Level

HCS Studio Cell Analysis Software is the most powerful tool in cell-based research because of its ability to report hundreds of measurements from each individual cell, monitoring even the most subtle changes that occur.

Averaged Per Condition

When thousands of cell responses are needed, then HCS Studio Cell Analysis Software simply delivers with treatment averages and relevant statistics that describe the population response.

Cell-level Phenotyping

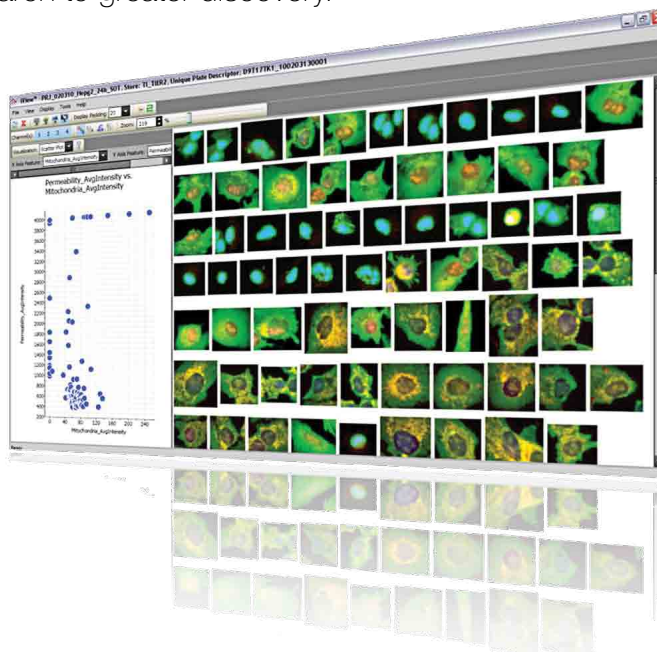
By combining the power of cell analysis tools with the ability to create "phenotypic events," HCS Studio Cell Analysis Software becomes more than just a high content tool, it becomes a cell phenotyping platform that transforms ordinary data into extraordinary results.

Collaborative Analysis

Science by nature is collaborative, so why shouldn't your images and data be, too?

Within an Organization – Collaborate with your lab and others using HCS Studio Cell Analysis Software and Store Image and Database Management Software. From simple data visualization through virtual screening, Thermo Scientific High Content Products allow secure, tractable access to your most important information. Using other laboratory software? Easily export data and images at all levels in several supported formats for simple importation into HCS Studio Cell Analysis Software's common analysis tools.

Across Organizations – Want to share your data with others via third-party tools? With HCS Studio Cell Analysis Software and Store Image and Database Management Software, your data becomes portable to best-in-class tools for screen management, curve fitting and cell-level cytometry formats, opening your research to greater discovery.



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