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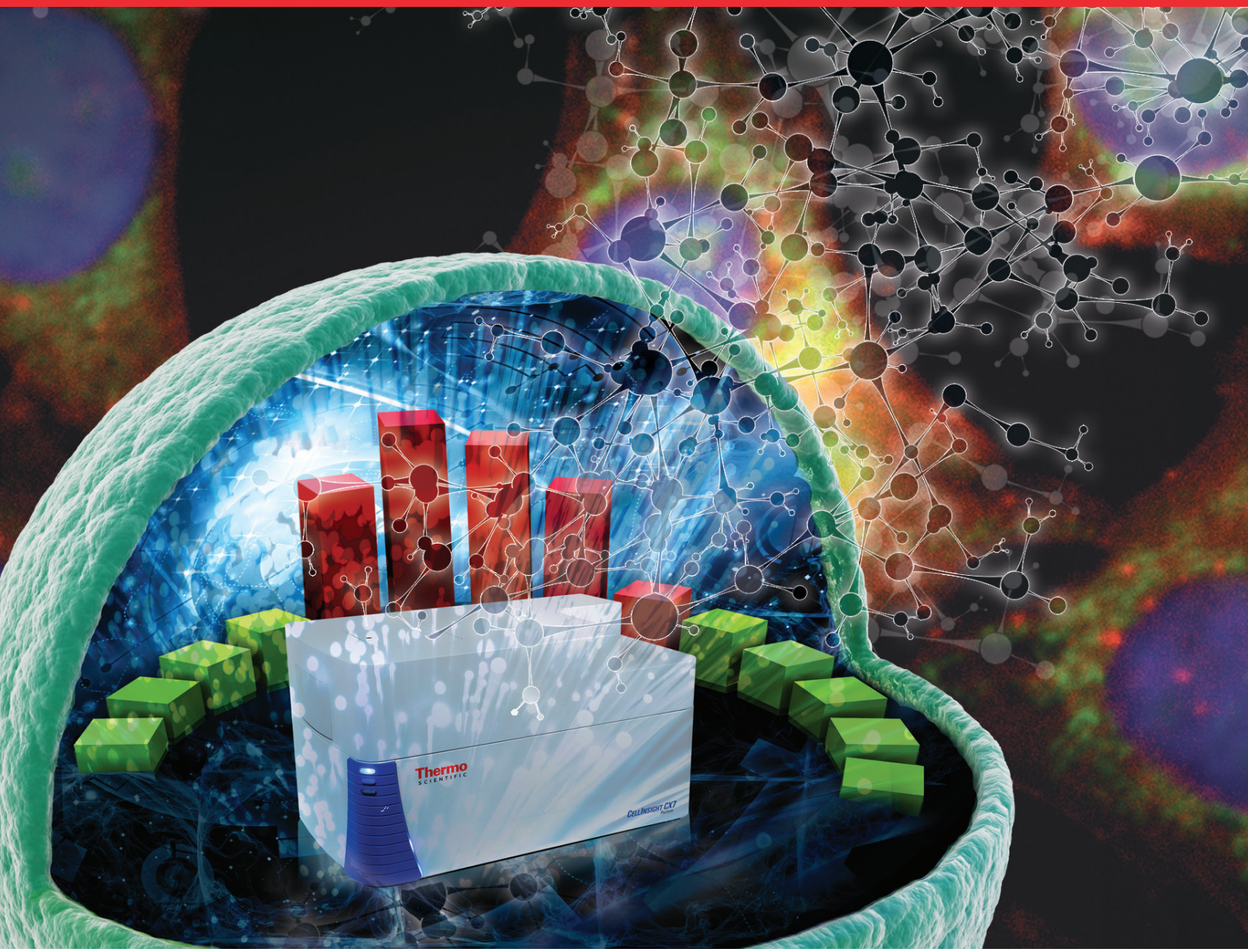

Quantifiably brilliant data

CellInsight CX7 High-Content Platform

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A legacy of innovation and discovery

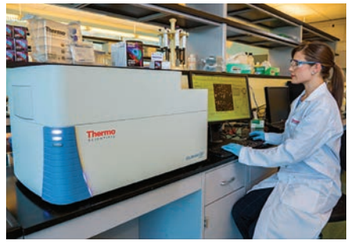
Since the introduction of ArrayScan™ HCA Readers in 1999, over 900 peer-reviewed cellomics publications attest to a legacy of innovation in high-content analysis (HCA) that continues with the Thermo Scientific™ CellInsight™ CX7 High-Content Platform.

HCA comprises a powerful combination of fluorescence microscopy, image processing, automated cellular measurements, and informatics tools that have enabled fundamental discoveries in basic research—and compound progression in drug discovery.

Find applications in that extensive bibliography—from toxicology assays to cell phenotyping—that will validate your strategy and inform the next steps in your research.

With Thermo Fisher Scientific™ you also draw on the expertise behind Molecular Probes™ fluorescent reagent development. Since 1975, we have developed and manufactured exquisite Molecular Probes fluorescent tools for interrogating the biology of the cell. These products have contributed to over 50,000 peer-reviewed publications exploring all aspects of cell biology. When you use Molecular Probes reagents for HCA you can have confidence in the publications of your peers, and trust in products developed and tested using tools like the ArrayScan and CellInsight High-Content Platforms.

With Molecular Probes reagents and the CellInsight CX7 High-Content Platform you can confidently explore the biology of your cell and tissue models to uncover data that inspire insight and sound decision making.



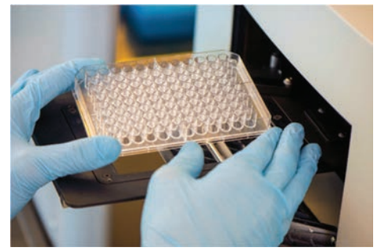
A broader tool set for more biological relevance

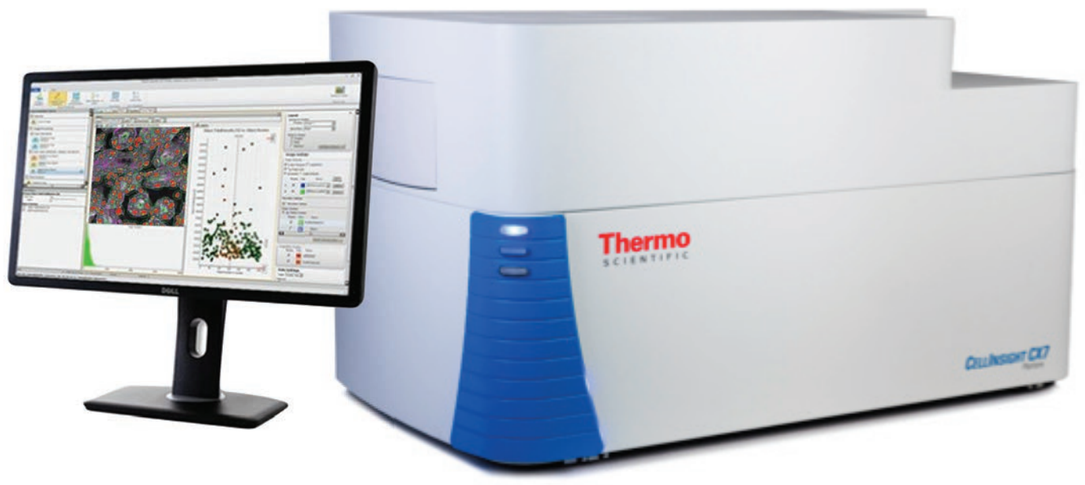
Experimental biology comes in many shapes and sizes, and it is hard to predict where an investigation is going next. The CellInsight CX7 High-Content Platform has you covered for current and future experiments:

- Scale throughput up to 1,536-well plates in a toxicology assay
- Switch to spheroids or 3D matrices for hypoxia testing
- Run chromogenic histology slides for data comparison
- Test delicate experimental samples in a range of culture dishes
- Exploit the precise stage positioning with patterning slides, chambers, or microfluidics

Your samples are precious and not always robust. If you are imaging live cells, sensitive biology, or delicate probes you want to minimize time in the instrument and, especially, limit exposure to high-intensity light. The CellInsight CX7 High-Content Platform is designed to analyze your sample with minimal impact:

- High-sensitivity camera and LED illumination reduces overall light exposure for image capture
- Laser-based autofocus reduces scan time and light exposure for challenging samples
- Well-by-well imaging exposes your samples only to the modes you need





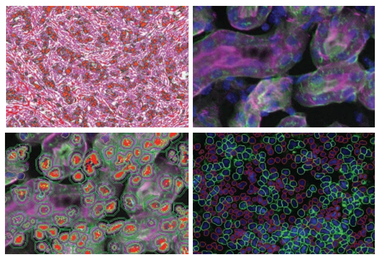
Biology happens cell-by-cell

Biology happens cell by cell and you need the right optical tools to capture all of it. With the CellInsight CX7 High-Content Platform, you have a choice of imaging modes to extract the information you need from your samples. Both well-by-well and channel-by-channel, you can select the right modes to read your sample—with the resolution and dynamic range that results from a high-performance optical train and a sensitive camera.

Brightfield:
Using an LED array for RGB and amber illumination, you can make colorimetric absorbance measurements from your histology samples with classic stains like hematoxylin and eosin (H&E). You can also multiplex your colorimetric absorbance data with fluorescence measurements, offering new possibilities for validation and correlation.

Confocal:
High-speed CrEST™ spinning-disk confocal technology with 40 µm or 70 µm pinholes is built into the optical path to provide multicolor confocal imaging in thick samples. To enable sensitive confocal imaging and make more detailed measurements using the NIR channel, the LED light engine is supplemented by laser diode illumination at 747 nm.

Widefield:
When confocal images are not required, the widefield imaging mode occupies the same light path as does the confocal, sharing a 7-color LED light engine and the sensitive Photometrics™ X1 CCD camera (with a 2,200 x 2,200 pixel array). Together, the 7-color light engine and X1 camera reduce switching times and intensity fluctuations to reduce scan times and boost quantitative performance.



Multiple imaging modes for cells and tissues

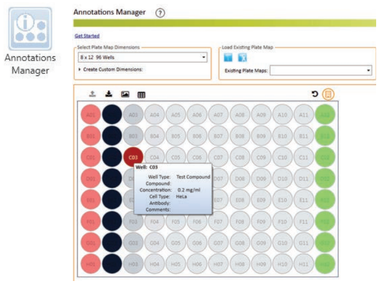
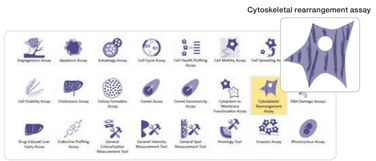


Plate maps to manage your experimental design



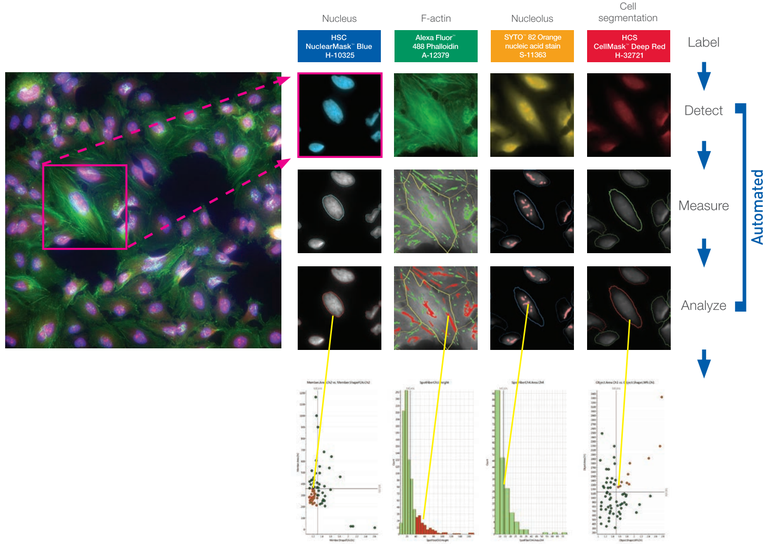
Icon-driven guidance for novice users

From individual cells to phenotypic profiling

HCS Studio Software
Thermo Scientific™ HCS Studio™ Cell Analysis Software is the engine behind the CellInsight™ CX7 High-Content Platform and all Thermo Scientific™ high content products. It is the icon-driven tool that collects data cell by cell until it can report out with statistically relevant assay performance. You get meaningful results faster because:

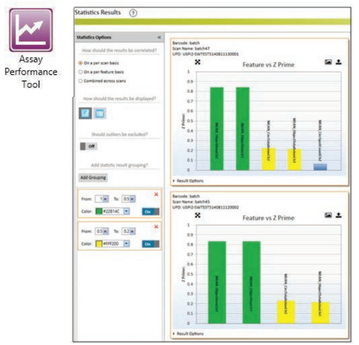
- You configure your assay quickly in a simple, icon-driven interface
- Image acquisition is fully automated—even with multiple channels and imaging modes
- Acquisition is intelligent—and analyzes only enough cells for statistical relevance
- Your data are processed in real time with no manual intervention required
- You can go from image collection to tabulated results and population statistics in minutes

View your results and make key decisions while other systems are still spooling and importing files for analysis.



Analysis and screening
The CellInsight CX7 High-Content Platform with HCS Studio Cell Analysis Software is a powerful tool for multiple applications. Whether you are analyzing a few slides to answer basic research questions or screening thousands of samples in a systems biology study, the platform of choice remains the same.

- Icon-driven guidance for novice users
- Fully customizable for experienced users
- Thermo Scientific™ BioApplications software tools for assay development and screening
- Scalable to many thousands of images

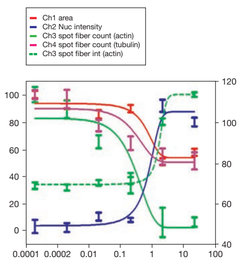


Rapid Z-prime tool to measure assay performance

Always come back to cells
HCS Studio Cell Analysis Software works like you, in the space between image analysis and data-centric analysis, where you can acquire knowledge. All of the cellular features being reported in charts or tables are available for viewing at the touch of a button, so your data are grounded in an understanding of the biology and context.

- Data are seamlessly linked to both image and protocol
- Move from tabulated data to view cells, wells, fields, or plate information

Assay performance
With HCS Studio Cell Analysis Software you can be confident of robust assay performance. Rank your assay parameters based on Z-prime before starting a screen, and then adjust your stopping criteria to collect only the data you need for statistical significance.



Multi-parameter reporting of cellular responses

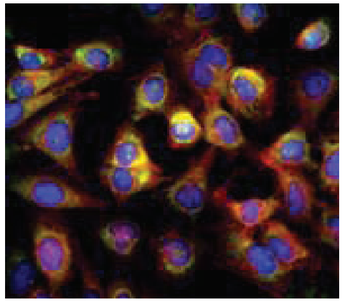
Multiplexing reagents for assay optimization

Recommended reagents

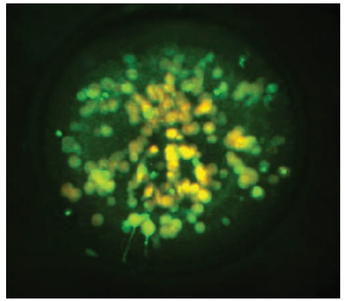
Drawing on decades of experience in fluorescence imaging, Molecular Probes™ HCS products are developed using Thermo Scientific high content platforms with special considerations for the high-throughput workflow and automated imaging:

- Alexa Fluor™ secondary antibodies for brightness and stablity
- Cell and nuclear masks for automated demarcation
- Robust functional probes for cell health interrogation
- Validated on multiple imaging platforms

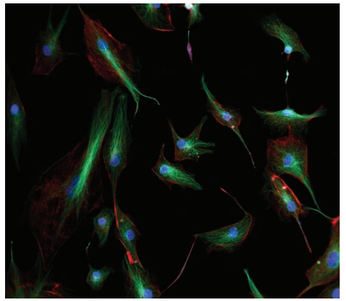
Take advantage of the entire fluorescent spectrum to multiplex your assay–and maximize your instrument performance. Use the table below to select reagents for each platform and channel.



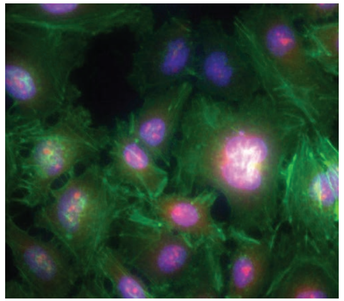
CellInsight CX7 widefield image using HCS NuclearMask Blue, MitoTracker™ Orange and Alexa Fluor™ 647 Phalloidin.



CellInsight CX7 confocal image of spheroid using GFP.



CellInsight CX7 widefield image using DAPI, Alexa Fluor™ 568 Phalloidin and Alexa Fluor™ 488 secondary antibody.



CellInsight CX7 widefield image using DAPI, Alexa Fluor™ and SYTO™ 82 Orange Nucleic Acid Stain.

CellInsight™ CX7 channels	Blue	Cyan	Green/Yellow		Orange	Red	Deep Red	Near IR
Secondary antibodies								
Goat anti-mouse	Alexa Fluor™ 350 (A-11045)	Alexa Fluor™ 405 (A-31553)	Alexa Fluor™ 488 (A-11001)	Alexa Fluor™ 532 (A-11002)	Alexa Fluor™ 555 (A-21422)	Alexa Fluor™ 594 (A-11005)	Alexa Fluor™ 647 (A-21235)	Alexa Fluor™ 750 (A-21037)
Goat anti-rabbit	Alexa Fluor™ 350 (A-11046)	Alexa Fluor™ 405 (A-31556)	Alexa Fluor™ 488 (A-11008)	Alexa Fluor™ 532 (A-11009)	Alexa Fluor™ 555 (A-21428)	Alexa Fluor™ 594 (A-11012)	Alexa Fluor™ 647 (A-21244)	Alexa Fluor™ 750 (A-21039)
Cell segmentation								
Whole cell segmentation	HCS CellMask™ Blue H-32720		HCS CellMask™ Green H-32714		HCS CellMask™ Orange H-32713	HCS CellMask™ Red H-32712	HCS CellMask™ Deep Red H-32721	
Nuclear segmentation	HCS NuclearMask™ Blue H-10325		SYTO™ 9 Green Nucleic Acid Stain S-34854		SYTO™ 82 Orange Nucleic Acid Stain S-11363	HCS NuclearMask™ Red H-10326	HCS NuclearMask™ Deep Red H-10294	
Cell tracking and tracing	CellTracker™ Blue C-12881	CellTracker™ Violet C-10094	CellTracker™ Green C-7025		CellTracker™ Orange C-34551	CellTracker™ Red C-34552	CellTracker™ Deep Red C-34565	
Cell strucuture								
Cytoskeleton–Actin	Alexa Fluor™ 350 Phalloidin A-22281		Alexa Fluor™ 488 Phalloidin A-12379		Alexa Fluor™ 555 Phalloidin A-34055	Alexa Fluor™ 594 Phalloidin A-12381	Alexa Fluor™ 647 Phalloidin A-22287	
Lysosomes						LysoTracker™ Red DND-99 L-7528	LysoTracker™ Deep Red L-12492	
Mitochondria			MitoTracker™ Green FM M-7514			MitoTracker™ Red M-7513	MitoTracker™ Deep Red FM M-22426	
Cell function probes								
Cell viability			Image-iT™ DEAD™ Green viability stain I-10291			Propidium Iodide P-1304MP		
Cell proliferation			Click-iT™ EdU Alexa Fluor™ 488 HCS Assay C-10351		Click-iT™ EdU Alexa Fluor™ 555 HCS Assay C-10353	Click-iT™ EdU Alexa Fluor™ 594 HCS Assay C-10355	Click-iT™ EdU Alexa Fluor™ 647 HCS Assay C-10357	
Apoptosis - Caspase activity			CellEvent™ Caspase-3/7 Green C-10423					

To see more reagents validated for use in high-content analysis, go to thermofisher.com/HCS

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Find out more at **thermofisher.com/HCS**

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