Quantifiably brilliant data

CellInsight CX7 High-Content Platform
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 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

From individual cells to phenotypic profiling

Confocal: High-speed DEEST™ spinning-disk confocal technology with 45 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 NR channel, the LED light engine is supplemented by laser diode illumination at 147 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.

HCS Studio Software

Thermo Scientific™ HCS Studio™ Cell Analysis Software is the engine behind the Cytation™ 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

Analysis and screening

The Cytation™ 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

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 2-primes before starting a screen, and then adjust your stopping criteria to collect only the data you need for statistical significance.

About Cytation™ CX7

The Cytation™ CX7 High-Content Platform delivers the same BioApplication modules available for viewing at the touch of a button, so your data are grounded in an understanding of the biology and context.
**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 stability
- 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.

### Secondary antibodies

<table>
<thead>
<tr>
<th>Color</th>
<th>Blue</th>
<th>Cyan</th>
<th>Green/Yellow</th>
<th>Orange</th>
<th>Red</th>
<th>Deep Red</th>
<th>Near IR</th>
</tr>
</thead>
</table>

### 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

- **Nuclear segmentation**
  - HCS NuclearMask™ Blue: H-32725
  - SYTO™ 9 Green Nucleic Acid Stain: S-34854
  - SYTO™ 82 Orange Nucleic Acid Stain: S-11363
  - HCS NuclearMask™ Red: H-32716
  - HCS NuclearMask™ Deep Red: H-10294

### Cell tracking and tracing

- **CellTracker™**
  - Blue: C-12881
  - Violet: C-10094
  - Green: C-7025
  - Orange: C-34551
  - Red: C-34552
  - Deep Red: C-34565

### Cell structure

- **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
  - 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](https://thermofisher.com/HCS).

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