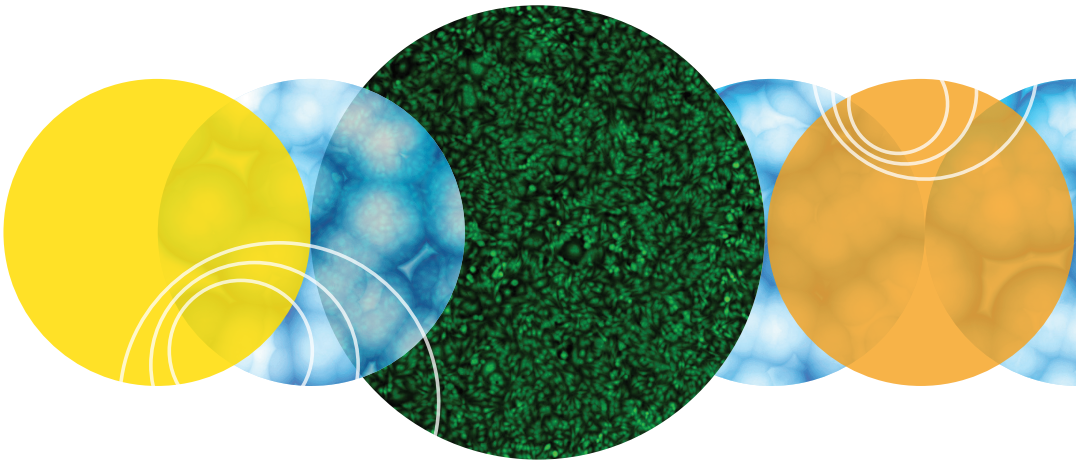

EarlyTox Cell Viability Assay Kits

Optimized performance for your microplate reader assay

KEY FEATURES

- **Optimal data quality for microplate reader assay**
- **Simplified, homogeneous experimental protocol**
- **Preconfigured protocol in SoftMax Pro Software**

Cell viability assays are critical to a broad spectrum of research areas ranging from investigation into the mechanisms of cell death to the development of new therapeutics targeting apoptosis in diseases. One of the most popular detection technologies for cell viability is a fluorescence microplate reader. The EarlyTox™ cell viability assay kits from Molecular Devices include a family of six reagents for characterizing cell viability, cell proliferation, and various apoptosis events using mammalian cells. All these kits have been optimized for highly sensitive and accurate microplate detection which provides a complete solution for monitoring cell viability.

Optimal data quality for microplate reader assay

The EarlyTox cell viability assay kits are designed to enable optimal results from microplate readers and increased assay throughput provided by the microplate format. Representative data collected with HeLa cells and SpectraMax® microplate readers are presented in Figure 1. The large assay window and the robust signals enable detailed characterization of concentration-response relationship for the test compound, which is highly desirable for cell proliferation and cytotoxicity assays. The family of products offers tools for flexible assay designs to evaluate compound effects in endpoint assays or for long-term studies in live cells.

MOLECULAR DEVICES

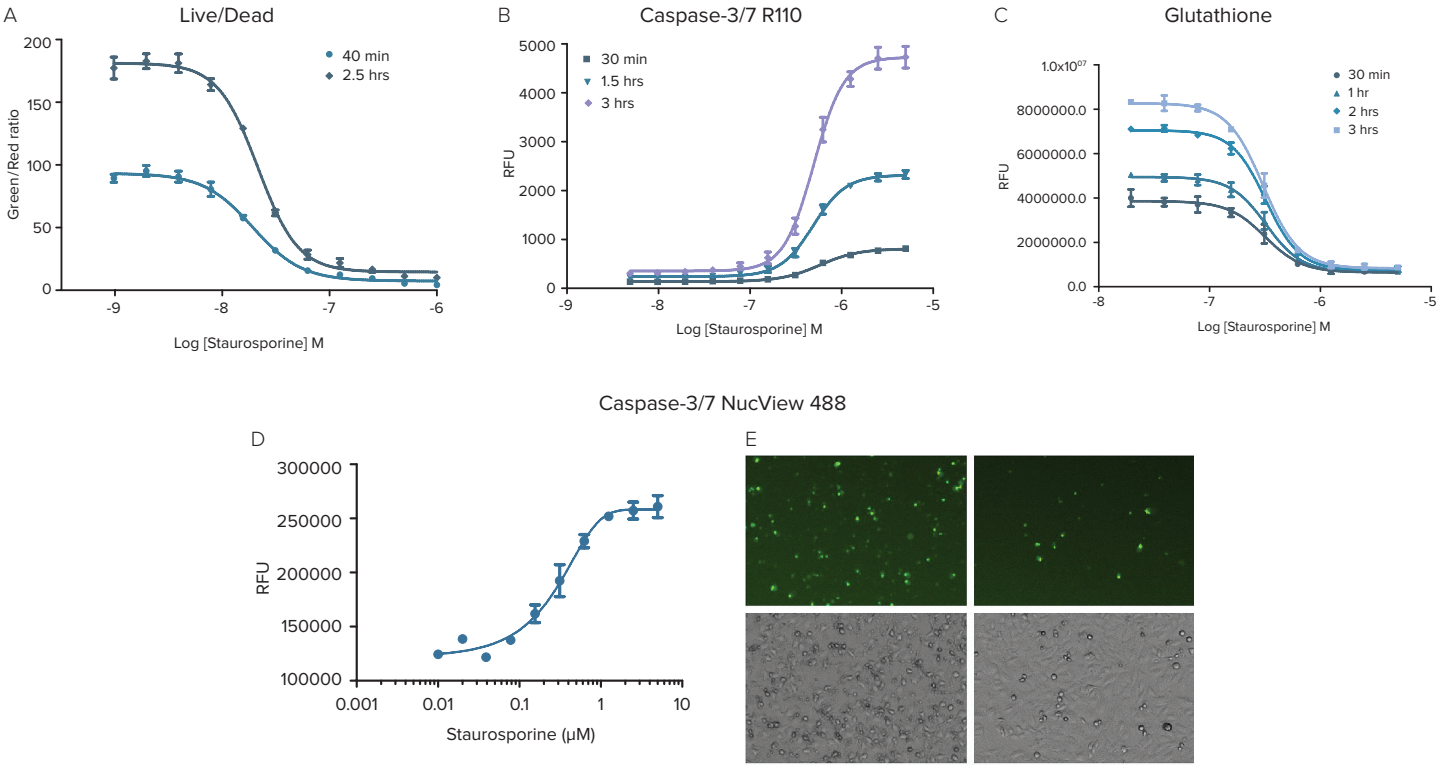

Figure 1: Representative data from HeLa cells and SpectraMax microplate readers. (A) Live/Dead: Cell viability as measured by the green (live)/red (dead) fluorescence ratio; **(B)** Caspase-3/7 R110: Cell apoptosis as measured by the caspase 3/7 activity; **(C)** Glutathione: Cell apoptosis as measured by the glutathione content; D&E: Caspase-3/7 NucView 488. The EarlyTox Caspase-3/7 NucView 488 Assay Kits are also applicable to fluorescence imaging, as the nuclei of intact apoptotic cells are labeled per their caspase activity; **(D)** Assessment of caspase 3/7 activity on plate reader; **(E)** Assessment of caspase 3/7 using fluorescence imaging.

Simplified homogenous experimental protocol

The EarlyTox cell viability assay kits apply a no-wash, homogeneous protocol that simplifies the workflow and reduces the data variability typically encountered with multiple experimental steps. Every kit is optimized specifically for the use on a microplate reader, with preconfigured protocol provided for customers using Molecular Devices SoftMax® Pro Software for their data acquisition and analysis. A typical experimental procedure is presented in Figure 2.

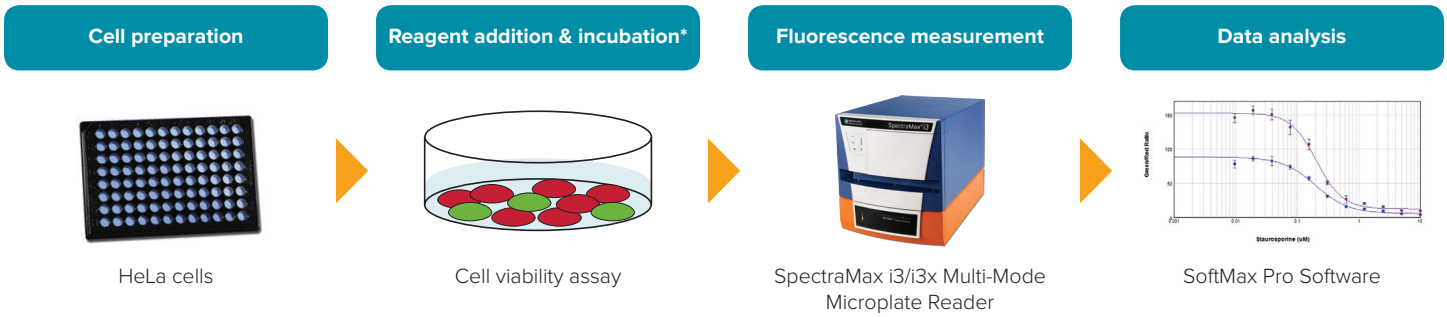

Figure 2. Representative experimental workflow for cell viability assay.

*In the case of the EarlyTox Caspase-3/7 NucView 488 Assay Kits, an optional masking agent using our proprietary quench technology can be applied separately to the cells prior to the measurement of fluorescence on the plate reader to further reduce the background fluorescence.

Assay kit	Application	Biological marker	Key component*	Fluorescence reader setting**
EarlyTox™ Live/Dead Assay Kit	Live/Dead cell assay	Plasma membrane integrity	Calcein AM, Ethidium Homodimer-III	Live channel: Excitation/Emission = 495 /530 nm Dead channel: Excitation/ Emission = 530/645 nm
EarlyTox™ Live Cell Assay Kit	Live cell / cell proliferation assay	Plasma membrane integrity	Calcein AM	Excitation/Emission = 495 /530 nm
EarlyTox™ Caspase-3/7 R110 Assay Kit	Caspase 3/7 apoptosis assay	Caspase 3/7 activity	Caspase 3/7 substrate (Ac-DEVD)2-R110, Cell lysis/Assay buffer	Excitation/Emission = 490 /520 nm
EarlyTox™ Caspase-3/7-D NucView™ 488 Assay Kit	Caspase 3/7 apoptosis assay	Caspase 3/7 activity	NucView 488 Caspase-3 Substrate in DMSO; Masking Reagent	Excitation/Emission = 500 /530 nm
EarlyTox™ Caspase-3/7 NucView™ 488 Assay Kit	Caspase 3/7 apoptosis assay	Caspase 3/7 activity	NucView 488 Caspase-3 Substrate in PBS; Masking Reagent	Excitation/Emission = 500 /530 nm
EarlyTox™ Glutathione Assay Kit	Mitochondrial apoptosis assay	Glutathione level	Monochlorobimane (MCB)	Excitation/Emission = 394 /490 nm

*Note: Detailed product configuration is available at www.moleculardevices.com/cellviability

**Compatible Molecular Devices microplate readers and imaging systems:

- SpectraMax® i3/i3x Multi-Mode Microplate Reader
- SpectraMax® M2e/M3/M4/M5/M5e Multi-Mode Microplate Readers
- SpectraMax® Paradigm® Multi-Mode Microplate Reader
- FlexStation® 3 Multi-Mode Microplate Reader
- Gemini™ EM Microplate Reader
- FilterMax™ F5 Multi-Mode Microplate Reader
- SpectraMax® MiniMax™ 300 Imaging Cytometer

Selecting your cell viability assay kits

The EarlyTox cell viability assay kit portfolio consists of six products for a wide range of analysis of mammalian cell types, including the determination of live or dead populations of cells and the measurement of various apoptotic events using a no-wash, homogeneous protocol. To facilitate the selection of appropriate assay kits, we compare the list of products above with their matching applications, biological marker, and reader setting.

Ordering information

The EarlyTox cell viability assay kits are available in two formats for your unique cell line, target or throughput requirement. The Explorer kit is sufficient for two 96-well microplates whereas the Bulk kit is sufficient for ten 96-well microplates. The number of microplates is based on the example protocol that is validated by Molecular Devices.

Assay kit	Part number	
	Explorer	Bulk
EarlyTox™ Live/Dead Assay Kit	R8340	R8341
EarlyTox™ Live Cell Assay Kit	R8342	R8343
EarlyTox™ Caspase-3/7 R110 Assay Kit	R8346	R8347
EarlyTox™ Caspase-3/7 NucView™ 488 Assay Kit	R8348	R8349
EarlyTox™ Caspase-3/7-D NucView™ 488 Assay Kit	R8350	R8351
EarlyTox™ Glutathione Assay Kit	R8344	R8345

Place your order online.*

*Currently only available for US customers.

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