



Trusted and easy-to-use cell health assays

Versatile assays for microscopes, microplate readers, and high-content screening systems

Cell health assays are used to detect and monitor various cellular events and build a picture of how and why cells live or die. They are vital for screening various drugs and studying their effects on cell viability and proliferation.

Our portfolio of trusted and easy-to-use Invitrogen™ assays can be used together to provide a comprehensive assessment of cell health in multiple model systems and sample types, including monolayer cell cultures, 3D microtissues, organoids, primary cells, and stem cells.

These products include cell-based assays that measure basic indicators of cell health, such as cell viability, cell proliferation, and cytotoxicity. They can also determine the specific mechanism of cell death, such as apoptosis or necrosis. We offer a wide range of these cell-based assays that can be used to measure cellular processes from oxidative stress to autophagy.

Our assays are useful across multiple detection platforms, including fluorescence microscopy, high-content screening (HCS), and microplate readers.

The 2022 Nobel Prize in chemistry was awarded to the scientists who developed a breakthrough method of snapping molecular structures together called click chemistry. Thermo Fisher has harnessed this novel chemistry and offers it in validated products for labeling proteins and antibodies, as well as monitoring cellular processes like proliferation and apoptosis.

Invitrogen™ Click-iT™ EdU Cell Proliferation Assay benefits:

- Small molecule size
- No harsh DNA denaturation required

Viability assays

In our assays, cell viability is based on cellular membrane integrity, cellular function such as enzymatic activity, or metabolic activity. Each viability reagent provides a single-parameter readout on whether cells are living or dead. Multiparameter assays allow for simultaneous detection of live, dead, and damaged or dying cells.

Apoptosis and autophagy assays

A multiparametric approach is important for accurate assessment of apoptosis. We offer an array of reagents and kits to detect cells undergoing apoptosis. Select from a wide variety of caspase activity assays, DNA fragmentation and TUNEL assays, and mitochondrial assays.

Mounting media and antifades

To minimize photobleaching, use our series of antifade reagents that increase fluorophore photostability in both live-cell and fixed-cell samples. We offer choices for immediate imaging as well as long-term storage, including formulations with a nuclear stain combining mounting and counterstaining in a single step.

Proliferation assays

Choose a cell proliferation assay depending on the number and type of cells that you are studying and the mechanism of action you want to study.

Cellular stress assays

Our Invitrogen™ fluorescent tools allow you to track different parameters in oxidative stress, such as generalized oxidative stress, lipid peroxidation, selective ROS detection, and hypoxia.

Key Invitrogen™ cell health assays for cellular research

	Assay	Cat. No.	Instrument compatibility	
Viability	ReadyProbes Cell Viability Imaging Kit	R37610 (blue/red)	Microscope, HCS	
	LIVE/DEAD Kits	L3224 (green/red), R37601 (optimized for FITC and Texas Red filters)	Microscope, HCS	Microplate reader
		H10290 (green)	HCS	
	SYTOX Nucleic Acid Stains	S11348 (blue), S7020 (green), S11368 (orange), S11380 (deep red)	Microscope, HCS	
	alamarBlue Cell Viability Reagents	DAL1025 (standard), A50100 (high sensitivity) C10637 (green), C10638 (orange), C10639 (red), C10640 (far red)	Microplate reader	
PrestoBlue Cell Viability Reagents	A13261 (standard), P50200 (high sensitivity)	Microplate reader		
Proliferation	Click-iT Plus EdU Cell Proliferation Kits	C10637 (green), C10638 (orange), C10639 (red), C10640 (far red)	Microscope	
	Click-iT EdU HCS Assays	C10350 (green), C10352 (orange), C10354 (red), C10356 (far red)	HCS	
	Click-iT EdU Proliferation Assay	C10499 (red)	Microplate reader	
	CyQuant Direct Cell Proliferation Assays	C35011 (green), C35013 (red)	Microplate reader	
	CyQuant MTT Cell Proliferation Assay	V13154	Microplate reader	
	CyQuant XTT Cell Viability Assay	X12223	Microplate reader	
	CyQuant LDH Cytotoxicity Assay	C20301	Microplate reader	
Cellular stress	MitoSOX Mitochondrial Superoxide Indicators	M36005 (green), M36007 (red)	Microscope, HCS	
	Image-iT Lipid Peroxidation Kit	C10445	Microscope, HCS	
	HCS LipidTOX Phospholipidosis Detection Reagents	H34350 (green), H34351 (red)	Microscope, HCS	
	CellEvent Senescence Green Detection Kit	C10850	Microscope, HCS	
	CellROX Oxidative Stress Reagents	C10444 (green), C10443 (orange), C10422 (deep red)	Microscope, HCS	Microplate reader
	Image-iT Hypoxia Reagents	I14833 (green), H10498 (red)	Microscope, HCS	Microplate reader
Apoptosis and autophagy	Click-iT Plus TUNEL Assays	C10617 (green), C10618 (red), C10619 (deep red)	Microscope, HCS	
	CellEvent Caspase-3/7 Detection Reagents	C10432 (green), C10430 (red)	Microscope, HCS	Microplate reader
	Premo Autophagy Sensors	P36235 (green fluorescent protein (GFP)), P36236 (red fluorescent protein (RFP)), P36239 (Tandem Sensor RFP-GFP)	Microscope	Microplate reader
Always	Alexa Fluor Plus Secondary Antibodies	thermofisher.com/antibody/secondary	Microscope, HCS	Microplate reader
Cell painting	Image-iT Cell Painting Kit	I65000 (2 plates), I65500 (10 plates)	HCS	
Mounting medias and antifades	ProLong Glass Antifade Mountants	P36980, P36983 (with NucBlue Stain)	Microscope	
	ProLong Diamond Antifade Mountants	P36961, P36962 (with DAPI)	Microscope	
	ProLong Gold Antifade Mountants	P36934, P36941 (with DAPI)	Microscope	
	SlowFade Diamond Antifade Mountants	S36972 , S36964 (with DAPI)	Microscope	
	SlowFade Glass Antifade Mountants	S36917	Microscope	
	SlowFade Gold Antifade Mountants	S36936 , S36938 (with DAPI)	Microscope	
	CytoVista Tissue and 3D Cell Culture Clearing Reagents and Kits	V11300, V11324 (for tissue, with IHC staining reagents), V11325 (for cell culture, with IHC staining reagents)	Microscope or HCS	

Learn more at [thermofisher.com/cellfunction](https://www.thermofisher.com/cellfunction)

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