



immunochemistry
TECHNOLOGIES

CELL VIABILITY PRODUCT ADVANTAGES

Bright Minds, Bright Solutions™

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CATEGORY	SUBCATEGORY	PRODUCT	CATALOG #	DESCRIPTION	ADVANTAGES
APOPTOSIS	Annexin V	Annexin V-FITC Apoptosis Assay	• 9124	Detect apoptosis and membrane permeability with the Annexin V-FITC Apoptosis Assay Kit. This in vitro apoptosis assay employs the green fluorescent Annexin V-FITC reagent to label exposed, cell membrane-associated phosphatidylserine (PS) in cultured cell samples. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis induction. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Human Annexin V. Annexin V binding to exposed PS on cell membrane is an early indication of apoptosis.
		Bovine Annexin V-Fluorescein Apoptosis Assay	• 9138	Detect apoptosis and membrane permeability with the Bovine Annexin V-Fluorescein Apoptosis Assay Kit. This in vitro apoptosis detection assay employs the green fluorescent Bovine Annexin V-Fluorescein reagent to label exposed, cell membrane-associated phosphatidylserine (PS) in cultured cell samples. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry induction.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Bovine Annexin V. Annexin V binding to exposed PS on cell membrane is an early indication of apoptosis.
		Canine Annexin V-Fluorescein Apoptosis Assay	• 9139	Detect apoptosis and membrane permeability with the Canine Annexin V-Fluorescein Apoptosis Assay Kit. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis. This in vitro apoptosis assay employs the green fluorescent Canine Annexin V-Fluorescein reagent to label exposed, cell membrane-associated phosphatidylserine (PS) in cultured cell samples. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Canine Annexin V. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis.
		Chicken Annexin V-Fluorescein Apoptosis Assay	• 9140	Detect apoptosis and membrane permeability with the Chicken Annexin V-Fluorescein Apoptosis Assay Kit. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis. This in vitro apoptosis assay employs the green fluorescent Chicken Annexin V-Fluorescein reagent to label exposed, cell membrane associated phosphatidylserine (PS) in cultured cell samples. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Chicken Annexin V. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis.
		Equine Annexin V-Fluorescein Apoptosis Assay	• 9141	Detect apoptosis and membrane permeability with the Equine Annexin V-Fluorescein Apoptosis Assay Kit. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis. This in vitro apoptosis assay employs the green fluorescent Equine Annexin V-Fluorescein reagent to label exposed, cell membrane associated phosphatidylserine (PS) in cultured cell samples. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Equine Annexin V. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis.
		Swine Annexin V-Fluorescein Apoptosis Assay	• 9142	Detect apoptosis and membrane permeability with the Swine Annexin V-Fluorescein Apoptosis Assay Kit. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis. This in vitro apoptosis assay employs the green fluorescent Swine Annexin V-Fluorescein reagent to label exposed, cell membrane-associated phosphatidylserine (PS) in cultured cell samples. Detect membrane compromised cells, a trademark of late apoptosis or cell necrosis, with the live/dead stain, propidium iodide (PI). Analyze the fluorescent signals by flow cytometry.	High affinity for PS; Virtually all Annexin V molecules are bound in apoptotic cells; PI allows dead and apoptotic cells to be discriminated; Made from recombinant Swine Annexin V. Translocation of PS from the inner leaflet to the outer leaflet of the cell membrane is an early indicator of apoptosis.

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APOPTOSIS (continued)	Apoptosis Inducing Agent	Camptothecin	• 6208 • 6209 • 6210	Camptothecin, a cytotoxic plant alkaloid with antitumor properties, is a prototypic DNA topoisomerase I inhibitor. Use camptothecin to create positive controls in apoptosis detection experiments.	High purity; ≥98% (HPLC); Lyophilized for long-term stability
		Staurosporine	• 6212	Staurosporine, isolated from <i>Streptomyces staurospores</i> , is a protein kinase C inhibitor. Staurosporine induces DNA fragmentation and apoptosis at 1 μM in >4 hours.	High purity; ≥99% (HPLC); Lyophilized for long-term stability
	Poly Caspase	FAM-FLICA® Poly Caspase Assay	• 91 • 92	This in vitro assay employs the fluorescent, cell-membrane permeant, poly caspase-inhibitor probe, FAM-VAD-FMK. This probe contains the generic tripeptide caspase targeting sequence (VAD) that enables the detection of most intracellular caspases in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; FLICA apoptosis detection probes are not subject to false results arising from transient post trypsinization PS exposure or with particular cancer cells where it is constitutively expressed on cell membrane.
		FAM-VAD-OPH I in vitro Apoptosis Detection Reagent	• 6354	A novel set of inhibitor reagents that employ an O-phenoxy (OPH) reactive group instead of an FMK group. In a manner analogous to the FMK class of cysteine reactive compounds, the OPH inhibitors form a stable covalent thioether adduct with the reactive SH-site of caspase enzymes present in apoptotic cells. These reagents are used as simple and reliable methods for screening apoptosis in live cells. FAM-VAD-OPH I [5-FAM-Val-Ala-Asp(OMe)-2,6-difluorophenoxy-methylketone poly caspase inhibitor] can be used with a fluorescence microscope, fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		FAM-VAD-OPH II in vitro Apoptosis Detection Reagent	• 6355	A novel set of inhibitor reagents that employ an O-phenoxy (OPH) reactive group instead of an FMK group. In a manner analogous to the FMK class of cysteine reactive compounds, the OPH inhibitors form a stable covalent thioether adduct with the reactive SH-site of caspase enzymes present in apoptotic cells. These reagents are used as simple and reliable methods for screening apoptosis in live cells. FAM-VAD-OPH II [5-FAM-Val-Ala-Asp(OMe)-Oph (2,6-diF) poly caspase inhibitor] can be used with a fluorescence microscope, fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		FLICA® 660 Poly Caspase Assay	• 9120	This in vitro assay employs the fluorescent cell-membrane permeant, poly caspase-inhibitor probe, 660-VAD-FMK. This probe contains the generic tripeptide caspase targeting sequence (VAD) that enables the detection of most intracellular caspases in living cells. Analyze the fluorescent signal using fluorescence microscopy or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Far-red emission can be easily combined with green emission reagents
		SR-FLICA® Poly Caspase Assay	• 916 • 917	This in vitro assay employs the fluorescent cell-membrane permeant, poly caspase-inhibitor probe, SR-VAD-FMK. This probe contains the generic tripeptide caspase targeting sequence (VAD) that enables the detection of most intracellular caspases in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission can be easily combined with green emission reagents
		SR-VAD-OPH in vitro Apoptosis Detection Reagent	• 6357	A novel set of inhibitor reagents that employ an O-phenoxy (OPH) reactive group instead of an FMK group. In a manner analogous to the FMK class of cysteine reactive compounds, the OPH inhibitors form a stable covalent thioether adduct with the reactive SH-site of caspase enzymes present in apoptotic cells. These reagents are used as simple and reliable methods for screening apoptosis in live cells. SR-VAD-OPH [SR-Val-Ala-Asp(OMe)-Oph (2,6-diF) poly caspase inhibitor] can be used with a fluorescence microscope, fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission can be combined with green emission reagents

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APOPTOSIS (continued)	Poly Caspase (In vivo)	FAM-FLIVO® In vivo Poly Caspase Assay	• 980 • 981	FLIVO (FLuorescence in vivo) is a powerful method for assessing caspase activity in vivo. FAM-FLIVO poly caspase probes are non-cytotoxic, cell-permeant fluorescent inhibitors of caspases optimized for use in whole live animals. ICT's FAM-FLIVO poly caspase inhibitor probe contains the preferred binding sequence for most caspases (Val-Ala-Asp or VAD). This preferred poly caspase tripeptide binding sequence is labeled with a carboxyfluorescein (FAM) dye and a fluoromethyl ketone (FMK) reactive entity.	Optimized for whole live animal labeling; Ex vivo analysis; Caspase detection allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Green emission; Compatible with conventional fluorescence detection instrumentation
		SR-FLIVO® In vivo Poly Caspase Assay	• 982 • 983	FLIVO (FLuorescence in vivo) is a powerful method for assessing caspase activity in vivo. SR-FLIVO poly caspase probes are non-cytotoxic, cell-permeant fluorescent inhibitors of caspases optimized for use in whole live animals. ICT's SR-FLIVO poly caspase inhibitor probe contains the preferred binding sequence for most caspases (Val-Ala-Asp or VAD). This preferred poly caspase tripeptide binding sequence is labeled with a sulforhodamine B (SR) dye and a fluoromethyl ketone (FMK) reactive entity.	Optimized for whole live animal labeling; Ex vivo analysis; Caspase detection allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission; Compatible with conventional fluorescence detection instrumentation
		NIR-FLIVO® 690 Tracer In vivo Assay	• 9112	FLIVO (FLuorescence in vivo) is a powerful method for non-invasive detection of caspase activity in vivo. NIR-FLIVO 690 Tracers are non-cytotoxic, cell-permeant fluorescent inhibitors of caspases optimized for use in whole live animals. ICT's NIR-FLIVO 690 Tracer probe contains the preferred binding sequence for most caspases (Val-Ala-Asp or VAD). This preferred poly caspase tripeptide binding sequence is labeled with *Dylight® 690 dye and a fluoromethyl ketone (FMK) reactive entity. FLIVO® is a registered trademark of ICT. *Dylight® is a registered trademark of Thermo Fisher Scientific, Inc. and its subsidiaries.	Optimized for whole live animal labeling; Non-invasive detection; Caspase detection allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; NIR 690 nm emission; Compatible with whole animal imaging systems
		NIR-FLIVO® 690 Free Dye Control Assay	• 9113	ICT's near-infrared (NIR)-FLIVO Tracers are used in conjunction with NIR-FLIVO Free Dye Control Assays. The NIR-FLIVO Free Dye Control Assay uses the NIR-FLIVO Free Dye Control reagent (*Dylight® 690 Free Dye). When injected, both the Free Dye Control and the Tracer reagents will generate a fluorescent signal, but only the Tracer should bind to active caspases and remain inside an apoptotic cell, while signal associated with the Free Dye Control represents background noise. FLIVO® is a registered trademark of ICT. *Dylight® is a registered trademark of Thermo Fisher Scientific, Inc. and its subsidiaries.	Optimized for whole live animal labeling; Non-invasive detection; Detects background fluorescence associated with non-specific binding of the NIR 690 dye; Sensitive; Cell-permeant; Accurate; NIR 690 nm emission; Compatible with whole animal imaging systems
		NIR-FLIVO® 747 Tracer In vivo Assay	• 9114	FLIVO (FLuorescence in vivo) is a powerful method for non-invasive detection of caspase activity in vivo. NIR-FLIVO 747 Tracers are non-cytotoxic, cell-permeant fluorescent inhibitors of caspases optimized for use in whole live animals. ICT's NIR-FLIVO 747 Tracer probe contains the preferred binding sequence for most caspases (Val-Ala-Asp or VAD). This preferred poly caspase tripeptide binding sequence is labeled with *Dylight® 747 dye and a fluoromethyl ketone (FMK) reactive entity. FLIVO® is a registered trademark of ICT. *Dylight® is a registered trademark of Thermo Fisher Scientific, Inc. and its subsidiaries.	Optimized for whole live animal labeling; Non-invasive detection; Caspase detection allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; NIR 747 nm emission; Compatible with whole animal imaging systems
		NIR-FLIVO® 747 Free Dye Control Assay	• 9115	ICT's near-infrared (NIR)-FLIVO® Tracers are used in conjunction with NIR-FLIVO Free Dye Control Assays. The NIR-FLIVO Free Dye Control Assay uses the NIR-FLIVO Free Dye Control reagent (*Dylight® 747 Free Dye). When injected, both the Free Dye Control and the Tracer reagents will generate a fluorescent signal, but only the Tracer should bind to active caspases and remain inside an apoptotic cell, while signal associated with the Free Dye Control represents background noise. FLIVO® is a registered trademark of ICT. *Dylight® is a registered trademark of Thermo Fisher Scientific, Inc. and its subsidiaries.	Optimized for whole live animal labeling; Non-invasive detection; Detects background fluorescence associated with non-specific binding of the NIR 747 dye; Sensitive; Cell-permeant; Accurate; NIR 747 nm emission; Compatible with whole animal imaging systems

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APOPTOSIS (continued)	Caspase-2	FAM-FLICA® Caspase-2 Assay	• 918 • 919	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-2 inhibitor probe, FAM-VDVAD-FMK. This probe contains the preferred pentapeptide caspase 2 targeting sequence (VDVAD) that enables the detection of active caspase-2 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell permeant; Accurate
		FAM-FLICA® Caspase-3/7 Assay	• 93 • 94	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-3/7 inhibitor probe, FAM-DEVD-FMK. This probe contains the preferred tetrapeptide caspase-3/7 targeting sequence (DEVD) that enables the detection of active caspase 3 and 7 enzymes in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
	Caspase-3/7	FAM-DEVD- OPH in vitro Apoptosis Detection Reagent	• 6356	A novel set of inhibitor reagents that employ an O-phenoxy (OPH) reactive group instead of an FMK group. In a manner analogous to the FMK class of cysteine reactive compounds, the OPH inhibitors form a stable covalent thioether adduct with the reactive SH-site of caspase enzymes present in apoptotic cells. These reagents are used as simple and reliable methods for screening apoptosis in live cells. FAM-DEVD-OPH [5-FAM-Asp-Glu-Val-Asp(OMe)-Oph (2,6-diF) caspase 3/7 inhibitor] can be used with a fluorescence microscope, fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		FLICA 660® Caspase-3/7 Assay	• 9125	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-3/7 inhibitor probe, 660-DEVD-FMK. This probe contains the preferred tetrapeptide caspase-3/7 targeting sequence (DEVD) that enables the detection of active caspase 3 and 7 enzyme in living cells. Analyze the fluorescent signal using fluorescence microscopy or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Far-red emission can be combined with green emission reagents
		Magic Red® Caspase-3/7 Assay	• 935 • 936	Detect caspase 3 and 7 activity in real time with the Magic Red Caspase-3/7 Assay. The Magic Red fluorogenic substrate contains the preferred caspase-3/7 targeting sequences (DEVD). It fluoresces upon cleavage by active caspase 3 and 7 enzymes. Analyze the fluorescent signal using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Substrate-based assay; Dynamic; Red fluorescence increases in proportion to caspase-3/7 activity in apoptotic cells; Cell-permeant
		SR-FLICA® Caspase-3/7 Assay	• 931 • 932	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-3/7 inhibitor probe, SR-DEVD-FMK. This probe contains the preferred tetrapeptide caspase-3/7 targeting sequence (DEVD) that enables the detection of active caspase 3 and 7 enzymes in living cells. Analyze the fluorescent signal using fluorescence microscopy, a fluorescence plate reader, or by flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission can be combined with green emission reagents
		FAM-FLICA® Caspase-6 Assay	• 95 • 96	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-6 inhibitor probe, FAM-VEID-FMK. This probe contains the preferred tetrapeptide caspase-6 targeting sequence (VEID) that enables the detection of active caspase-6 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
	Caspase-8	FAM-FLICA® Caspase-8 Assay	• 99 • 910	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-8 inhibitor probe, FAM-LETD-FMK. This probe contains the preferred tetrapeptide caspase-8 targeting sequence (LETD) that enables the detection of active caspase-8 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		SR-FLICA® Caspase-8 Assay	• 9149 • 9150	This in vitro assay employs the fluorescent, cell-membrane permeant, caspase-8 inhibitor probe, SR-LETD-FMK. This probe contains the preferred tetrapeptide caspase-8 targeting sequence (LETD) that enables the detection of active caspase-8 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission can be combined with green emission reagents

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APOPTOSIS (continued)	Caspase-9	FAM-FLICA® Caspase-9 Assay	• 912 • 913	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-9 inhibitor probe, FAM-LEHD-FMK. This probe contains the preferred tetrapeptide caspase-9 targeting sequence (LEHD) that enables the detection of active caspase-9 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		SR-FLICA® Caspase-9 Assay	• 960 • 961	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-9 inhibitor probe, SR-LEHD-FMK. This probe contains the preferred tetrapeptide caspase-9 targeting sequence (LEHD) that enables the detection of active caspase-9 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate; Red emission can be combined with green emission reagents
	Caspase-10	FAM-FLICA® Caspase-10 Assay	• 922 • 923	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-10 inhibitor probe, FAM-AEVD-FMK. This probe contains the preferred tetrapeptide caspase-10 targeting sequence (AEVD) that enables the detection of active caspase-10 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Detection of active caspases allows for earlier detection of apoptosis; Sensitive; Cell-permeant; Accurate
		Necrosis vs Apoptosis Assay	• 9147 • 9148	Simultaneously detects both apoptosis associated cytotoxicity events and cell death due to necrosis. This simple and straightforward tool allows researchers to understand the overall health-status of their cell populations. In addition, this kit is useful to researchers investigating the effect of their novel drug or therapeutic as it allows them to assess their experimental outcome and evaluate the overall treatment of the cells. Analyze using fluorescence microscopy or flow cytometry.	Dual detection method provides more complete picture of cell health status; Sensitive; Cell-permeant; Minimal spectral overlap; Necrosis vs apoptosis signals are easily differentiated
	Serine Protease	FLISP FAM-Leu-CMK Serine Protease Assay	• 949 • 950	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options
		FLISP FAM-Leu-DAP Serine Protease Assay	• 967 • 968	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options
		FLISP FAM-Phe-CMK Serine Protease Assay	• 945 • 946	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options
		FLISP FAM-Phe-DAP Serine Protease Assay	• 984 • 985	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options
		FLISP FAM- Spacer-Leu- CMK Serine Protease Assay	• 965 • 966	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options
		FLISP FAM- Spacer-Phe- CMK Serine Protease Assay	• 963 • 964	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options

CATEGORY	SUBCATEGORY	PRODUCT	CATALOG #	DESCRIPTION	ADVANTAGES
APOPTOSIS (continued)	Serine Protease (continued)	FLISP SR101-Leu- CMK Serine Protease Assay	• 955 • 956	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options; Red fluorescent label can be combined with green labeled fluors in multi-parametric analyses
		FLISP SR101-Phe- CMK Serine Protease Assay	• 951 • 952	FLISP probes interact with active catalytic sites of chymotrypsin-like proteases, labeling cells with greater quantities of active chymotrypsin-like enzyme activity with a greater fluorescence potential than those that are not upregulated. Analyze your samples using a flow cytometer, fluorescence microscope, or fluorescence plate reader.	Quantitative detection of chymotrypsin-like proteases in whole cells; Sensitive; Cell-permeant; Live cell detection method; Multiple analysis options; Red fluorescent label can be combined with green labeled fluors in multi-parametric analyses
		Tumor Necrosis Factor alpha	• 6213	Tumor Necrosis Factor- Alpha (TNF- α), also known as TNF ligand superfamily member 2 (TNFSF2) and cachectin, is a human recombinant protein that can be used in a variety of applications including cytotoxicity, cell proliferation assays, apoptosis, and viral protection. This product is best used for inducing apoptosis to create a positive control.	Sterile; Human; Recombinant; Lyophilized for long-term stability
		Tumor Necrosis Factor beta	• 6214	Tumor Necrosis Factor – Beta (TNF- β), also known as lymphotoxin-alpha is a human recombinant protein that can be used in a variety of applications including cytotoxicity, cell proliferation assays, and apoptosis. This product is best used for inducing apoptosis to create a positive control.	Sterile; Human; Recombinant; Lyophilized for long-term stability
AUTOPHAGY	Autophagy	Autophagy Assay, Red	• 9156 • 9157	ICT's Autophagy Assay, Red enables researchers to detect and monitor the in vitro development of autophagy in living cells. The Autophagy Probe is cell-permeant and fluoresces red when inserted in the lipid membranes of autophagosomes and autolysosomes. Results can be read using a flow cytometer.	Fast and quantitative detection of autophagy in whole cells; No transfection required
CATHEPSINS	Cathepsin B	Magic Red® CathepsinB Assay	• 937 • 938	The cell-membrane permeant Magic Red Cathepsin B substrate in this assay contains the preferred Arg-Arg (RR) cathepsin-B dipeptide targeting sequence. It fluoresces red upon cleavage by active cathepsin enzymes. Analyze the fluorescent signal using fluorescence microscopy or a fluorescence plate reader.	Substrate-based assay; Dynamic; Red fluorescence increases in proportion to cathepsin activity in whole cells
		Cathepsin B	• 6202	Cathepsin B purified from human liver tissue is best used to study enzyme kinetics, cleave target substrates, and screen for inhibitors.	Highly pure lysosomal protease; $\geq 95\%$ (SDS-PAGE)
		Green Cathepsin B Assay	• 9151 • 9152	The Green Cathepsin B Assay contains Rhodamine 110 Cathepsin B Substrate, which is a non-cytotoxic and cell membrane permeant substrate that fluoresces green upon cleavage by active cathepsins. To use Rhodamine 110-(RR)2, add the substrate directly to the cell culture medium, incubate, and analyze. Because the substrate is cell permeant, it easily penetrates the cell membrane and the membranes of the internal cellular organelles – no lysis or permeabilization steps are required. If active cathepsin enzymes are present, the quenched Rhodamine 110-(RR)2 substrate is cleaved, resulting in an increase in green fluorescence signal. Samples can be analyzed by flow cytometry or fluorescence microscopy. Hoechst 33342 is included in the kit to label nuclei.	Substrate-based assay; Dynamic; Green fluorescence increases in proportion to cathepsin activity in whole cells

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CATHEPSINS (continued)	Cathepsin D	Cathepsin D	• 6203	A ubiquitous lysosomal aspartyl protease that functions in protein degradation and apoptosis. This product is best used to study enzyme kinetics, cleave target substrates, and screen for inhibitors.	Highly pure lysosomal protease; $\geq 95\%$ (SDS-PAGE); Lyophilized	
	Cathepsin K	Magic Red® Cathepsin K Assay	• 939 • 940	The cell-membrane permeant Magic Red Cathepsin K substrate contains the preferred Leu-Arg (LR) cathepsin-K dipeptide targeting sequence. It fluoresces red upon cleavage by active cathepsin enzymes. Analyze the fluorescent signal using fluorescence microscopy or a fluorescence plate reader.	Substrate-based assay; Dynamic; Red fluorescence increases in proportion to cathepsin activity in whole cells; Cell-permeant	
	Cathepsin L	Magic Red® Cathepsin L Assay	• 941 • 942	The cell-membrane permeant Magic Red Cathepsin L substrate contains the preferred Phe-Arg (FR) cathepsin-L dipeptide targeting sequence. It fluoresces red upon cleavage by active cathepsin enzymes. Analyze the fluorescent signal using fluorescence microscopy or a fluorescence plate reader.	Substrate-based assay; Dynamic; Red fluorescence increases in proportion to cathepsin activity in whole cells; Cell-permeant	
CELLULAR IMAGING	Lysosome Stain	Acridine Orange Staining Solution	• 6130	Acridine Orange is used for fluorescence microscopy and flow cytometry analysis of cellular physiology and cell cycle status. This cell-permeant cellular stain can be utilized in conjunction with a number of other staining techniques and fluorogenic substrates including the Magic Red line of fluorogenic protease substrates. Acridine Orange is a useful bacteria stain for the fluorescent microscopic examination of microorganisms.	Versatile; Stains acidic vacuoles (lysosomes, endosomes, and autophagosomes), RNA, and DNA in living cells; Fast and easy to use; Cell-permeant	
	Cell Label	CFSE Fluorescent Cellular Stain	• 6162	5-(and 6)-carboxyfluorescein diacetate, succinimidyl ester (5,6 CFDA,SE; CFSE), is a fluorogenic reagent which is frequently used in cell labeling and cell proliferation procedures. Non-fluorescent and moderately hydrophobic in its di-esterified form, 5,6 CFDA,SE easily penetrates lipid bi-layers of living cells and is quickly converted to the amine-reactive, green fluorescent form (CFSE) upon cleavage of the acetate groups by intracellular esterases. This highly fluorescent form is membrane-impermeant and is retained within the cells, while any excess CFSE probe is easily washed away in subsequent wash steps.	Stably labels cells via covalent coupling to intracellular molecules; Suitable for proliferation studies; Fluorescence is distributed equally between daughter cells following cell division	
	Nuclear Stain	DAPI Nuclear Stain	DAPI Nuclear Stain	• 6244	DAPI is a blue fluorescent DNA stain that forms complexes with natural double-stranded DNA. Use it to detect DNA and visualize nuclear morphology.	UV-excited; Cell-permeant; Stains live and fixed cells; Used extensively in fluorescence microscopy
		Hoechst 33342 Fluorescent Nucleic Acid Stain	Hoechst 33342 Fluorescent Nucleic Acid Stain	• 639	Hoechst 33342 nucleic acid stain is a popular cell-permeant nuclear counterstain that emits blue fluorescence when bound to dsDNA. This dye is often used to distinguish condensed pyknotic nuclei in apoptotic cells and for cell cycle studies.	UV-excited; Cell-permeant; Stains live and fixed cells; Used extensively in fluorescence microscopy
Fixative	Fixative	Fixative	• 636	ICT's Fixative is a formaldehyde solution designed to cross-link intracellular components. It will not interfere with the fluorescent labels used on our fluorescent detection probes like FLICA, Magic Red, and FLISP.	Preserves secondary structure of proteins and may protect tertiary structure as well; Preserves stained cells and tissues for up to 16 hours	

CATEGORY	SUBCATEGORY	PRODUCT	CATALOG #	DESCRIPTION	ADVANTAGES
CYTO-TOXICITY	Live/Dead Stains	7-AAD Red Fluorescent Live/Dead Stain	• 6163	7-Aminoactinomycin D (7-AAD) is a red fluorescent chemical compound with a strong affinity for DNA. This live-cell impermeant vital dye intercalates in double-stranded DNA with a high affinity for GC-rich regions. 7-AAD does not pass through intact cell membranes, allowing it to be used as a cell viability dye. Alternatively, it may also be used to visualize or label all cells after fixation.	Compatible with green and red emission reagents; Minimal spectral overlap with commonly used fluorescein isothiocyanate (FITC) and phycoerythrin (PE) labels
		Green Live/Dead Stain	• 6342	Green Live/Dead Stain is a live-cell impermeant, green fluorescence-emitting DNA dye for viability, apoptosis and necrosis studies, and fixed cell nuclear counterstaining. This product binds to dsDNA/nuclei of necrotic or permeabilized cells and can be used in combination with live cell dyes for live/dead discrimination. Analyze samples using a flow cytometer or fluorescence microscope. DRAQ7 is a trademark of Biostatus.	Penetrates only damaged cellular membranes; Excellent counterstain for DNA and chromatin - DNA intercalation amplifies fluorescence; Provided in a ready-to-use solution; Fast procedure -short incubation time and no washing needed
		Propidium Iodide Stain	• 638	Propidium Iodide (PI) is an intercalating fluorescent agent that binds between the bases of DNA. Propidium Iodide is membrane impermeant, which prevents DNA binding in viable cells, allowing identification of dead cells in a population.	Penetrates only damaged cellular membranes; Excellent counterstain for DNA and chromatin - DNA intercalation amplifies fluorescence; Provided in a ready-to-use solution; Fast procedure -short incubation time and no washing needed
	Kits	Advanced Calcein AM Cell Viability Kit	• 9154	Advanced Calcein AM Cell Viability Kit combines Calcein AM with 7-AAD to allow for easy and simultaneous labeling of live, membrane compromised, and dead cells within a single sample. Calcein AM is used to detect live cells, fluorescing green, while 7-AAD is used to detect necrotic or late stage apoptotic cells, fluorescing red. Samples can be analyzed using a flow cytometer or fluorescence microscope.	Versatile; Suitable for proliferating and non-proliferating cells, suspension and adherent cells; Two analysis options; Fast protocol- no washing needed; Simultaneous labeling of live and dead cells for complete cell viability analyses
		Basic Calcein AM Cell Viability Kit	• 9153	Basic Calcein AM Cell Viability Kit allows researchers to easily and simultaneously differentiate between live and dead cells within a single sample. To use Calcein AM, simply add the reagent directly to the cell sample, incubate, and analyze. Samples can be analyzed using a flow cytometer, fluorescence plate reader, or fluorescence microscope.	Versatile; Suitable for proliferating and non-proliferating cells, suspension and adherent cells; Multiple analysis options; Fast protocol- no washing needed
		Cell-mediated Cytotoxicity Assay: Basic Cytotoxicity Assay	• 969 • 970	Basic Cytotoxicity Assay is a single-tube, dual-color assay for determining cell-mediated cytolytic activity by flow cytometry. The assay employs a green fluorescent cellular stain, CFSE, to label target cells and the red live/dead viability dye 7-AAD to identify the dead cells present in the cytotoxicity assay samples. Analyze your results using a flow cytometer.	Differentiates target and effector cells for more accurate detection of cytotoxicity; Includes detailed protocol and controls; Avoids exposure to radioactivity in 51Cr release assay
		Cell-mediated Cytotoxicity Assay: Total Cytotoxicity & Apoptosis Assay	• 971 • 972	Total Cytotoxicity Assay is a single-tube, tri-color assay for quantitative assessment of cell-mediated cytolytic activity due to apoptosis and necrosis. The assay employs a green fluorescent cellular stain, CFSE, to label target cells green, the red live/dead viability dye, 7-AAD, to identify the dead cells present in the cytotoxicity assay samples, and the orange-red SR-FLICA reagent, SR-VAD-FMK, to measure caspase activity in the target cell population. Analyze your results using a flow cytometer.	Differentiates target and effector cells for more accurate detection of cytotoxicity; SR-FLICA is included for apoptosis detection, therefore total cytotoxicity can be calculated; Includes detailed protocol and controls; Avoids exposure to radioactivity in 51Cr release assay

10 | CELL VIABILITY PRODUCT ADVANTAGES

CATEGORY	SUBCATEGORY	PRODUCT	CATALOG #	DESCRIPTION	ADVANTAGES
OXIDATIVE STRESS	ELISA/ Biochemical Assay-Based	DNA Damage ELISA Kit	•9143	Quantify 8-OHdG in urine, cell culture, plasma and other sample matrices using ICT's DNA Damage (8-OHdG) ELISA Kit. This kit offers a quick incubation time, stable reagents, and a user-friendly protocol. Analyze results using an absorbance plate reader.	Detects all 3 oxidized guanine species for more complete picture of oxidative damage (8-hydroxy-2-deoxyguanosine, 8-hydroxyguanosine, and 8-hydroxyguanine)
		Glutathione Colorimetric Detection Kit	•9135	Quantitatively measure glutathione (GSH) and oxidized glutathione (GSSG) present in a variety of samples, including whole blood, serum, plasma, erythrocytes, urine, cell lysates, and tissue samples. Analyze the absorbance colorimetric signal by spectrophotometer.	Versatile; Multi-species; Compatible with a multiple sample types
		Glutathione Fluorescent Detection Kit	•9133 •9134	ICT's Glutathione Fluorescent Detection Kit is designed to quantitatively measure reduced state glutathione (GSH), and oxidized state glutathione (GSSG) present in a variety of samples. Sample types validated include: human whole blood; serum; EDTA and heparin plasma; urine; and isolated erythrocytes. Most cell lysates and tissue homogenates should also be compatible.	Versatile; Multi-species; Compatible with a multiple sample types; Increased sensitivity compared to #9135
		Hydrogen Peroxide Colorimetric Detection Kit	•9132	ICT's Hydrogen Peroxide Colorimetric Detection Kit allows you to quantitatively measure H ₂ O ₂ in a variety of samples. This kit is validated for use in fresh urine, buffers, and tissue culture media. This kit is species independent.	Versatile; Multi-species; Compatible with a multiple sample types
		Hydrogen Peroxide Fluorescent Detection Kit	•9131	ICT's Hydrogen Peroxide Fluorescent Detection Kit is designed to quantitatively measure H ₂ O ₂ in a variety of samples. This kit is validated for use in fresh urine, buffers, and tissue culture media samples. It is species independent.	Versatile; Multi-species; Compatible with a multiple sample types; Increased sensitivity compared to #9132
		Nitric Oxide Colorimetric Detection Kit	•9136	ICT's flexible Nitric Oxide Colorimetric Detection Kit offers two assay capabilities. The first assay allows you to quantitatively measure endogenous Nitrite. In the second assay, Nitrate is converted to Nitrite using Nitrate Reductase and Total Nitric Oxide is measured. Nitrate concentration can be calculated by performing both assays.	Versatile; Multi-species; Compatible with a multiple sample types
	Cell-Based Assays	Intracellular GSH Assay	•9137	Assess changes in intracellular glutathione levels with the Intracellular GSH Assay. This whole cell glutathione assay employs a proprietary thiol-sensitive dye, ThioBright™ Green, to monitor relative changes in the concentration of the reduced form of glutathione, aka GSH. Analyze the fluorescent signal by flow cytometry.	Optimized for flow cytometry; Can be paired with other reagents, such as 7-AAD, for multi-parametric study of cell viability and apoptosis
		Intracellular Total ROS Activity Assay	•9144	ICT's Intracellular Total ROS Activity Assay provides a good screening option for assessing the potency of oxidative stress inhibitor and activator reagents, and will help to determine how oxidative stress modulates varied intracellular pathways. This product assesses the overall level of intracellular ROS activity and can be analyzed using a flow cytometer.	Optimized for flow cytometry; Suitable for suspension and adherent cells; Cell-permeant; Sensitive; Fast protocol- no washing needed
		Nitric Oxide Synthase Assay	•9155	ICT's Nitric Oxide Synthase Assay provides a good screening option for assessing the potency of nitrosative stress inhibitor and activator reagents, and will help to determine how oxidative and nitrosative stress modulates varied intracellular pathways. This kit assesses the overall intracellular levels of free nitric oxide and NOS using a Diaminofluorescein-2 Diacetate (DAF-2DA) dye. Results can be analyzed using a flow cytometer, fluorescence plate reader, or fluorescence microscope.	Versatile; Suitable for suspension and adherent cells; Multiple analysis options; Fast protocol- minimal procedural steps and hands on time

CATEGORY	SUBCATEGORY	PRODUCT	CATALOG #	DESCRIPTION	ADVANTAGES
PYROPTOSIS	Caspase-1	FAM-FLICA[®] Caspase-1 Assay	• 97 • 98	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-1 inhibitor probe, FAM-YVAD-FMK. This probe contains the preferred tetrapeptide caspase-1 targeting sequence (YVAD) that enables the detection of active caspase-1 enzyme in living cells. Analyze samples using fluorescence microscopy, a fluorescence plate reader, or flow cytometry.	Identifies inflammasome activation and pyroptosis in whole cells; Sensitive; Cell-permeant; Accurate
		FLICA[®] 660 Caspase-1 Assay	• 9122	This in vitro assay employs the fluorescent cell-membrane permeant, caspase-1 inhibitor probe, 660-YVAD-FMK. This probe contains the preferred tetrapeptide caspase-1 targeting sequence (YVAD) that enables the detection of active caspase-1 enzyme in living cells. Analyze the fluorescent signal using fluorescence microscopy or flow cytometry.	Identifies inflammasome activation and pyroptosis in whole cells; Sensitive; Cell-permeant; Accurate; Far-red emission can be easily combined with green emission reagents
		Pyroptosis/ Caspase-1 Assay, Green	• 9145 • 9146	ICT's Pyroptosis/Caspase-1 Assay Kit utilizes our popular FLICA technology to detect caspase-1 activation. Using this kit, researchers can easily assess pyroptotic cells and utilize nigericin as a positive control. Analyze the green fluorescent signal using fluorescence microscopy, a fluorescence plate reader, or by flow cytometry.	Identifies inflammasome activation and pyroptosis in whole cells; Sensitive; Cell-permeant; Accurate
		Pyroptosis/ Caspase-1 Assay, Red	• 9158	This kit utilizes the far red, cell-permeant FLICA reagent, 660-YVAD-FMK, for the in vitro detection of caspase-1 in whole living cells. 660-YVAD-FMK enters each cell and irreversibly binds to activated caspase-1. Because 660-YVAD-FMK becomes covalently coupled to the active enzyme, it is retained within the cell, while any unbound reagent diffuses out of the cell and is washed away.	Identifies inflammasome activation and pyroptosis in whole cells; Sensitive; Cell-permeant; Accurate; Far-red emission can be easily combined with green emission reagents
	Pyroptosis Inducing Agent	Nigericin	• 6698	Nigericin is a potent microbial toxin that acts as a potassium ionophore, inducing a net decrease in intracellular levels of potassium. This is critical for the oligomerization of the NLRP3 inflammasome and activation of caspase-1 in pyroptosis. Nigericin can be used as a positive control in pyroptosis experiments.	High purity; ≥98%; Lyophilized for long-term stability



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