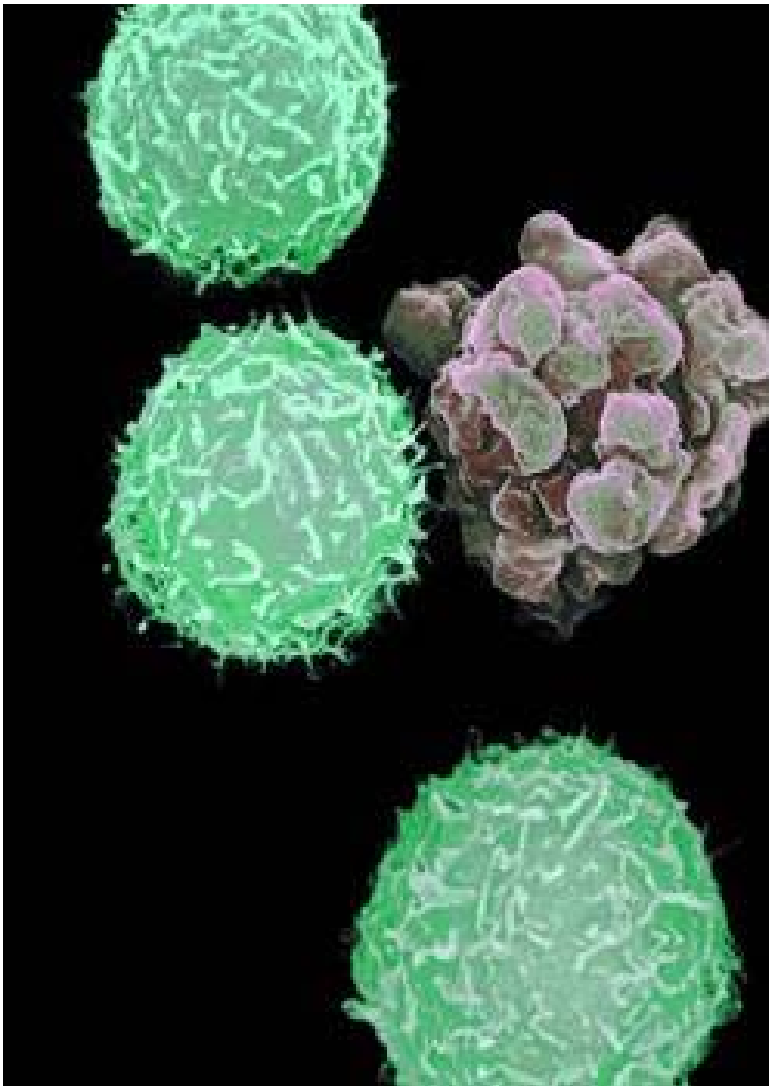


Apoptosis



Apoptosis, or programmed cell death, is a sophisticated process that involves an intricate series of biochemical events. Specific cell death signals are transduced by different biomolecules such as caspases initiating an apoptotic cascade and finally causing multiple events such as degradation of cellular proteins and chromosomal DNA, mitochondrial disruption or changes in the plasma membrane integrity.

Since no single parameter fully defines cell death, it is recommended to use different methods to detect apoptotic cells or to differentiate between necrosis and apoptosis. Thus, PromoKine provides a selected line of tools for detecting and studying the manifold apoptotic events occurring in different areas of the cell, e.g. the plasma membrane, cytoplasm, mitochondria, and nucleus.

- **DNA fragmentation detection**
- **Mitochondrial changes & cytochrome c release**
- **Glutathione detection**
- **Apoptotic & necrotic cell differentiation new**
- **Annexin V detection**
- **Caspase detection & quantification**
- **Cathepsin & calpain detection**
- **Kinase detection**
- **Apoptotic cell isolation**
- **Apoptosis inducers**

DNA Fragmentation Detection

- Fluorometric DNA Fragmentation Detection Kits I and II (BrdU)
- Fluorometric DNA Fragmentation Detection Kit III (F-dUTP)
- Colorimetric DNA Fragmentation Detection Kit (IHC)
- Apoptotic DNA Ladder Detection Kit I
- Apoptotic DNA Ladder Detection Kit II
- DNA Fragmentation Detection Kits

Applications

- Detect fragmented nucleosomal DNA
- Screening for apoptotic cells
- Fluorescence microscopy
- Flow cytometry

Benefits

- High sensitivity
- Appropriate for various multiwell formats and automation
- Compatible with standard lab equipment

Fluorometric DNA Fragmentation Detection Kits I and II (BrdU)

The PromoKine DNA Fragmentation Detection Kits I and II are based on the TUNEL method and identify DNA strand breaks occurring during apoptosis. The kits provide all required components - including positive and negative control cells and tissue slides - for convenient detection of DNA fragmentation by fluorescence microscopy or flow cytometry. The TUNEL assay employs a terminal deoxynucleotidyl transferase (TdT) to add Br-dUTP (brominated deoxyuridine triphosphate nucleotides) to the fragmented DNA strands. Br-dUTP is more readily incorporated into DNA strand breaks than other larger ligands (e.g., fluorescein, biotin or digoxigenin). The greater incorporation gives rise to a brighter signal when the Br-dUTP sites are identified by a green-fluorescent (Kit I) or red-fluorescent (Kit II) labeled anti-BrdU monoclonal antibody. The labeled DNA can then be observed by fluorescence microscopy or analyzed by flow cytometry. The DNA Fragmentation Kit II works also very well with GFP transfected cells.

Fluorometric DNA Fragmentation Detection Kit III (F-dUTP)

The Fluorometric DNA Fragmentation Detection Kit III is a modified TUNEL assay and provides all reagents required for the specific detection of apoptotic cells within a cell population in tissue sections and fixed cell preps. The kit utilizes terminal deoxynucleotidyl transferase (TdT) to catalyze incorporation of fluorescein-12-dUTP at the free 3'-hydroxyl ends of the fragmented DNA. The fluorescein-labeled DNA can then be observed by fluorescence microscopy or analyzed by flow cytometry.

Colorimetric DNA Fragmentation Detection Kit (IHC)

The ready-to-use, TUNEL-based Colorimetric DNA Fragmentation Detection Kit (IHC) has been specifically designed for convenient detection of DNA fragmentation in tissuesections and fixed cell preps. It includes positive and negative control slides and utilizes Br-dUTP, biotin-labeled anti-BrdU antibodies and HRP-streptavidin conjugate. Immunohistochemical staining results can be microscopically analyzed.

Apoptotic DNA Ladder Detection Kit I

The Apoptotic DNA Ladder Detection Kit I provide an easy and sensitive means for detecting DNA fragmentation in apoptotic cells. The method requires less than 90 minutes preparing the DNA, without the need for extraction or columns. DNA fragmentation can then easily be visualized by agarose gel electrophoresis. The procedure increases recovery of small fragmented DNA, and therefore improves the sensitivity of the assay. The assay can be used to detect apoptotic DNA ladders, extracting both genomic DNA and ladderred DNA.

Apoptotic DNA Ladder Detection Kit II

Using the Apoptotic DNA Ladder Extraction Kit II allows to selectively isolate DNA ladders without interference of regular genomic DNA. Apoptotic DNA ladders from both tissues and cells with as little as 5% or less apoptotic cell population can be detected. The kit specifically extracts ladderred DNA, not genomic DNA.

Cat No	Product	Description	Pack Size
PK-CA577-K120	Apoptotic DNA Ladder Detection Kit I	Kit for fast and sensitive detection of DNA fragmentation in apoptotic cells	50 assays
PK-CA577-K130	Apoptotic DNA Ladder Detection Kit I plus	Kit for fast and sensitive detection of DNA fragmentation in apoptotic cells	50 assays
PK-CA577-K170	Apoptotic DNA Ladder Detection Kit II	Kit for sensitive detection of apoptotic DNA ladder in both tissue and cells	50 assays
PK-CA577-K403	Colorimetric DNA Fragmentation Detection Kit (IHC)	TUNEL-based immunohistochemical staining kit including positive and negative control slides for convenient detection of DNA fragmentation in tissue sections and fixed cell preps.	50 assays
PK-CA577-K401	Fluorometric DNA Fragmentation Detection Kit I (BrdU)	TUNEL-based assay kit for convenient detection of DNA fragmentation in cultured cells and tissue sections.	60 assays
PK-CA577-K404	Fluorometric DNA Fragmentation Detection Kit II (BrdU)	TUNEL-based assay kit provides for convenient detection of DNA fragmentation in cultured cells and tissue sections.	60 assays
PK-CA577-K402	Fluorometric DNA Fragmentation Detection Kit III (F-dUTP)	TUNEL-based assay kit for convenient detection of DNA fragmentation in cultured cells and tissue sections (one-step labeling of apoptotic cells).	50 assays

Mitochondrial Changes & Cytochrome C Release

- Mitochondrial Apoptosis Staining Kit
- Cytochrome c Apoptosis Detection Kit

Applications

- Screening for early apoptotic cells
- Fluorescence microscopy
- Flow cytometry

Benefits

- Optimal sensitivity due to high fluorescence intensity
- Appropriate for various multiwell formats and automation
- Excitation and emission spectra are compatible with common excitation sources and filter sets

Mitochondrial Apoptosis Staining Kit

Disruption of mitochondrial transmembrane potential is one of the earliest intracellular events that occur upon induction of apoptosis. The Mitochondrial Apoptosis Staining Kit provides a simple and sensitive, fluorescent-based in vitro assay for detecting the mitochondrial changes in apoptosis and distinguishing between healthy and apoptotic cells. The assay utilizes a novel cationic dye (called MitoCapture™) that fluoresces differently in healthy versus apoptotic cells. In healthy cells, MitoCapture accumulates and aggregates in the mitochondria - fluorescing brightly red. In apoptotic cells, a shift in mitochondrial transmembrane potential prevents the dye from accumulating in the mitochondria. Instead it remains in the cytoplasm in its monomer form - fluorescing green. The fluorescent signals can be easily detected by fluorescence microscopy or flow cytometry using common filters and channels, respectively (FITC, rhodamine, PI). The assay takes approximately 20 minutes, is highly sensitive and detects apoptosis reliably in living cells.

Cytochrome C Apoptosis Detection Kit

Applications

- Screening for apoptotic cells
- Analysis of apoptotic signal cascades

Benefits

- Non radioactive method
- Easy and fast procedure
- No toxic chemicals necessary

Cytochrome c has been shown to play an important role in apoptosis. The protein is located in the space between the inner and outer mitochondrial membranes. An apoptotic stimulus triggers the release of Cytochrome c from the mitochondria into the cytosol where it binds to Apaf-1.

The Cytochrome c/Apaf-1 complex activates caspase-9 which then activates caspase-3 and other downstream caspases of the apoptotic cascade. The PromoKine Cytochrome c Apoptosis Detection Kit provides an effective means for detecting Cytochrome c translocation from mitochondria into cytosol during apoptosis. The kit provides an easy-to-use procedure and unique reagents for separating a highly enriched mitochondria fraction from cytosol. Cytochrome c released from mitochondria into cytosol is then determined by Western blotting using the Cytochrome c antibody provided in the kit. The procedure is very simple and straightforward - no ultracentrifugation is required and no toxic chemicals are involved.

Cat No	Product Name	Description	Pack Size
PK-CA-577-K250-25	Mitochondrial Apoptosis Staining Kit	Highly sensitive assay / detecting apoptosis in living cells.	25 assays
PK-CA577-K250-100	Mitochondrial Apoptosis Staining Kit	Highly sensitive assay / detecting apoptosis in living cells.	100 assays
PK-CA577-1065-200	MitoCapture Incubation Buffer		200 ml
PK-CA577-K257-100	Cytochrome c Apoptosis Detection Kit	Detects cytochrome c translocation from mitochondria into cytosol during apoptosis	100 assays

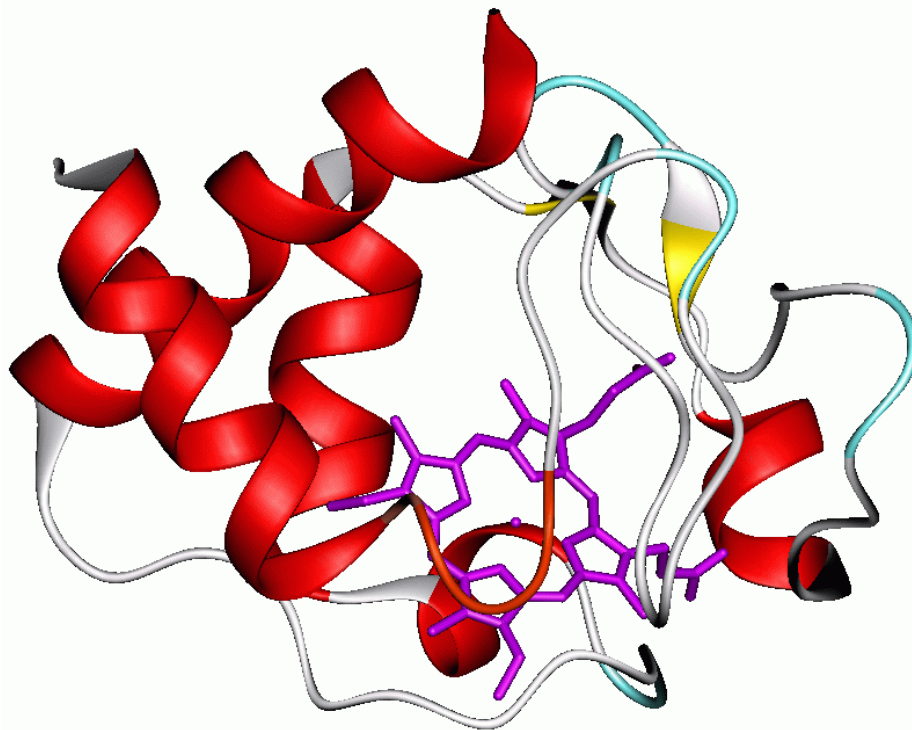


Image of Mitochondrial Cytochrome C

Glutathione Detection Kits

Applications

- Screening for apoptotic cells
- Glutathione detection

Benefits

- Non radioactive, highly sensitive method
- Easy and fast procedure
- Compatible with common spectrophotometers/ fluorometers and plate readers

Fluorometric Glutathione Detection Kit

Diminished glutathione (GSH) levels occur at the early stages of apoptosis. The PromoKine Fluorometric Glutathione Detection Kit provides a simple in vitro assay for detecting the GSH changes in apoptosis and other pathological processes. The assay utilizes a dye (monochlorobimane, MCB) that has a high affinity for glutathione. The unbound dye is almost nonfluorescent; whereas the dye fluoresces blue (excitation = 380 nm; emission = 461 nm) when bound to reduced or oxidized glutathione. The reaction is catalyzed by glutathione S-transferase (GST). Thus, the decrease in glutathione level in apoptotic cells can be easily detected using a fluorometer or a 96-well fluorometric plate reader.

Colorimetric Glutathione Detection Kit

The Colorimetric Glutathione Detection Kit provides a convenient, colorimetric method for analyzing either total glutathione or only the reduced form of glutathione using a microtiter plate reader. The assay utilizes the glutathione recycling system with DTNB and glutathione reductase: GSH is regenerated from GSSG by glutathione reductase, and will again react with DTNB to produce yellow 2-nitro-5-thiobenzoic acid that can be determined spectrophotometrically at 412 nm. This recycling reaction dramatically improves the sensitivity of total glutathione detection - the kit can quantify total glutathione from 1-100 ng/well. For detecting lower glutathione concentrations, such as in blood samples, increasing reaction time will significantly improve the signal. The kit can also specifically detect the reduced form of glutathione (GSH) by omitting the glutathione reductase from the reaction mixture.

Catalog Number	Product Name	Description	Size
PK-CA577-K251	Fluorometric Glutathione Detection Kit	Fluorometric Glutathione Detection Kit for detecting the GSH changes in apoptosis and other pathological processes	100 assays
PK-CA577-K261	Colorimetric Glutathione Detection Kit	Colorimetric Glutathione Detection Kit for detecting the GSH changes in apoptosis and other pathological processes	100 assays

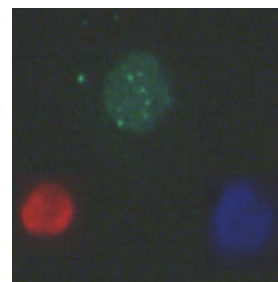
Apoptotic & Necrotic Cell Differentiation

Fast and convenient detection of apoptotic and necrotic cells

- Convenient simultaneous detection apoptotic and necrotic - as well as healthy cells - in a single assay
- Fast, one-step procedures - assays completed within 15 minutes
- Optimized sensitivity

Apoptosis and necrosis are the two major processes leading to cell death. Apoptosis is an active, genetically regulated "cell suicide" induced by diverse factors. This disassembly of the cell creates multiple events and is associated e.g. with changes in the phospholipid content of the outer leaflet of the cytoplasmic membrane. Phosphatidylserine (PS) is translocated from the inner to the outer surface of the cell for phagocytic cell recognition.

U937 cells treated with an apoptosis inducing agent were analyzed using the Apoptotic/Necrotic/Healthy Cells Detection Kit. Apoptotic cells are stained green while necrotic cells show red fluorescence and healthy cells fluoresce blue.



Thus, apoptotic cells can be easily and reliably identified with Annexin V, a phospholipid protein with a high affinity for PS that binds specifically to the PS exposed on the outer membrane leaflet of apoptotic cells. When Annexin V is labeled e.g. with fluorescein (FITC) apoptotic cells are stained brightly green.

Necrosis normally results from a severe cellular insult. Since both internal organelle and plasma membrane integrity are lost, cytosolic and organellar contents are released into the surrounding environment. Ethidium homodimer III (EtD-III) is a nucleic acid probe, which is impermeant to live or apoptotic cells, but stains necrotic cells intensively with red fluorescence. Due to its significantly higher affinity for DNA and higher fluorescence quantum yield, EthD-III is a superior alternative to propidium iodide (PI) or ethidium homodimer I (EthD-I) commonly used in some other cell staining kits.

The PromoKine Apoptotic/Necrotic Cells Detection Kit provides a convenient assay for quantifying apoptotic (green) and necrotic (red) cells within the same cell population by flow cytometry or fluorescence microscopy.

The PromoKine Apoptotic/Necrotic/Healthy Cells Detection Kit additionally includes a membrane-permeant blue fluorescent DNA stain (Hoechst 33342) for quantifying the healthy cell population. Thus, this kit allows simultaneous quantification of apoptotic (green), necrotic (red) and healthy cells (blue) within the same cell population by flow cytometry or fluorescence microscopy.

Cat No	Product Name	Description	Pack Size
PK-CA707-30017	Apoptotic/Necrotic Cells Detection Kit	Fast and sensitive simultaneous detection and quantitation of apoptotic and necrotic cells in a single assay.	50 assays
PK-CA707-30018	Apoptotic/Necrotic/Healthy Cells Detection Kit	Fast and sensitive simultaneous detection and quantitation of apoptotic, necrotic and healthy cells in a single assay.	50 assays

Annexin V Detection

- Annexin V Detection Kits
- Individual Annexin V Reagents

Applications

- Screening for apoptotic cells
- Differentiating apoptotic and necrotic cells
- Annexin detection
- Flow cytometry
- Fluorescence microscopy

Benefits

- High fluorescence intensity and sensitivity
- Many different labels and tags available. Appropriate for various multiwell formats and automation
- Excitation and emission spectra are compatible with common excitation sources and filter sets

In the early stages of apoptosis, changes can be observed on the cell surface: Cells lose their phospholipid membrane asymmetry and expose phosphatidylserine (PS) on the exterior plasma membrane. Annexin V is a Ca²⁺-dependent, phospholipid-binding protein with high affinity for phosphatidylserine (PS) and is thus very useful for identifying apoptotic cells exposing PS on the cell surface to the extracellular environment. Annexin V may be conjugated to biotin or fluorophores such as FITC and phycoerythrin (PE) or it may be tagged with EGFP (Enhanced Green Fluorescent Protein). Since Annexin V conjugates or tagged Annexins retain their high affinity for PS, they are ideally suited as highly sensitive probes to identify early apoptotic cells and to detect apoptosis much earlier than assays based on DNA fragmentation or loss of membrane integrity. The stained cells can be evaluated by flow cytometry or fluorescence microscopy using common filter sets and flow cytometer channels.

Annexin V Detection Kits

The Annexin V Apoptosis Detection Kits include an Annexin V conjugate or a tagged Annexin V, respectively, as well as binding buffer and partially also propidium iodide (PI) for differentiating between early apoptotic and necrotic cells. The kits allow a one-step staining procedure that takes only 10 minutes. In addition, the assay can be directly performed on living cells.

Promokine Annexin V Apoptosis Detection Kit plus includes an additional dye, SYTOX green, that is impermeant to live and apoptotic cells, but stains necrotic cells with intense green fluorescence by binding to cellular nucleic acids. After staining a cell population with e.g. fluorescent Annexin V-Cy3 or Annexin V-PE conjugates and SYTOX Green dye in the provided binding buffer, apoptotic cells show red fluorescence, dead cells show green fluorescence and live cells show little or no fluorescence. These populations can easily be distinguished by fluorescence microscopy using the appropriate filters.

Individual Annexin V Reagents

For easy staining of early apoptotic cells, Annexin V conjugated to FITC, PE, Cy3, Cy5 and biotin are available, as well as Annexin V tagged with EGFP. The stained cells can be evaluated by flow cytometry or fluorescence microscopy using common filter sets and flow cytometer channels. Biotinylated Annexin V can be detected in conjunction with conventional dye-staining using any streptavidin- or avidin-dye reagents, such as our PromoFluor-streptavidin/avidin conjugates, fluorescein-, PE- or APC-streptavidin as well as streptavidin/avidin conjugated to peroxidase, alkaline phosphatase (AP), β -gal, etc.

Cat No	Product Name	Description	Pack Size
PK-CA577-1035-100	1X Annexin V Binding Buffer	Supplemental reagent for use with annexin V reagents for detecting apoptosis.	100 ml
PK-CA577-K109-25	Annexin V-Biotin Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-1003-100	Annexin V-Biotin Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 µg
PK-CA577-1002-1000	Annexin V-Biotin Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1 mg
PK-CA577-1002-200	Annexin V-Cy3 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	200 assays
PK-CA577-K109-100	Annexin V-Biotin Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-1002-1000	Annexin V-Cy3 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1000 assays
PK-CA577-K109-400	Annexin V-Biotin Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-1013-200	Annexin V-Cy5 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	200 assays
PK-CA577-K102-25	Annexin V-Cy3 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-1013-1000	Annexin V-Cy5 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1000 assays
PK-CA577-K102-100	Annexin V-Cy3 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-1004-200	Annexin V-EGFP Reagent	EGFP is a bright and photo-stable protein	200 assays
PK-CA577-K102-400	Annexin V-Cy3 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-1004-1000	Annexin V-EGFP Reagent	EGFP is a bright and photo-stable protein	1000 assays
PK-CA577-K202-25	Annexin V-Cy3 Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-1001-200	Annexin V-FITC Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	200 assays
PK-CA577-K202-100	Annexin V-Cy3 Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-1001-1000	Annexin V-FITC Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1000 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-K202-400	Annexin V-Cy3 Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-1014-200	Annexin V-PE Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	200 assays
PK-CA577-K103-25	Annexin V-Cy5 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-1014-1000	Annexin V-PE Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1000 assays
PK-CA577-K103-100	Annexin V-Cy5 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-1015-200	Annexin V-PE-Cy5 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	200 assays
PK-CA577-K103-400	Annexin V-Cy5 Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-1015-1000	Annexin V-PE-Cy5 Reagent	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	1000 assays
PK-CA577-K104-25	Annexin V-EGFP Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-K104-100	Annexin V-EGFP Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-K104-400	Annexin V-EGFP Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-K101-25	Annexin V-FITC Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-K101-100	Annexin V-FITC Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-K101-400	Annexin V-FITC Apoptosis Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-K201-25	Annexin V-FITC Apoptosis Kit Plus	Simultaneous detection of apoptosis and necrosis by flow cytometry	25 assays
PK-CA577-K201-100	Annexin V-FITC Apoptosis Kit Plus	Simultaneous detection of apoptosis and necrosis by flow cytometry	100 assays
PK-CA577-K201-400	Annexin V-FITC Apoptosis Kit Plus	Simultaneous detection of apoptosis and necrosis by flow cytometry	400 assays
PK-CA577-K128-25	Annexin V-PE Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-K128-100	Annexin V-PE Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-K128-400	Annexin V-PE Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-K203-25	Annexin V-PE Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-K203-100	Annexin V-PE Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-K203-400	Annexin V-PE Apoptosis Kit Plus	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-K129-25	Annexin V-PE-Cy5 Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	25 assays
PK-CA577-K129-100	Annexin V-PE-Cy5 Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	100 assays
PK-CA577-K129-400	Annexin V-PE-Cy5 Apoptosis Detection Kit	Detecting apoptosis in living cells by flow cytometry or fluorescence microscopy	400 assays
PK-CA577-1006-100	10X Annexin V Binding Buffer	Supplemental reagent for use with bulk annexin V reagents for detecting apoptosis.	100 assays
PK-CA577-1005-100	Annexin V Unlabeled Reagent		100 ug

Caspase Detection & Quantification

Caspases, a family of cysteine aspartic acid proteases, are important factors in the progression of apoptosis and can be activated by various deleterious and physiologic stimuli such as cytochrom c release due to mitochondrial membrane disruption, DNA damage, ER stress or other inducers such as TNF-alpha and FasL. Caspases are normally present in the cell as inactive pro-enzymes. During apoptosis, they are activated by proteolysis forming a proteolytic cascade that results in the cleavage of distinct proteins that are mostly essential for the cell's viability.

- Caspase Detection Kits
- Caspase Quantification Kits
- Individual Caspase Reagents
- Caspase Detection Kits

Applications

- Screening for apoptotic cells
- Flow cytometry / fluorescence microscopy
- Caspase detection

Benefits

- High fluorescence intensity and sensitivity
- Highly specific
- Fast and simple
- Appropriate for various multiwell formats and automation
- Excitation and emission spectra are compatible with common excitation sources and filter sets

Caspase Staining Kits

The fluorometric Caspase Staining Kits are the ideal tools for detecting activated caspases in situ in living cells. The kits utilize potent caspase inhibitors that were conjugated to FITC or rhodamine as fluorescence in situ markers. The caspase inhibitors are cell-permeable, nontoxic, and bind specifically and irreversibly to the activated caspases in apoptotic cells. With the FITC or rhodamine labels, activated caspases in apoptotic cells can be directly visualized by fluorescence microscopy, or analyzed by using flow cytometry or a fluorescence plate reader. Caspase inhibitors without FITC or rhodamine labels are also included in the kits as negative controls.

Caspase Screening Kit (FC)

The PromoKine Caspase Screening Kit (FC) provides a convenient means for detecting the activation of caspases by flow cytometry in living cells. The assay is based on the cleavage of (aspartyl)2-Rhodamine 110 (D2R), a reported substrate for members of caspase family proteases. The caspase substrate D2R is nonfluorescent. However, upon cleavage of the substrate by cellular activated caspases, the released rhodamine 110 gives rise to fluorescence that can be measured by flow cytometry at excitation of 488 nm and emission of 530 nm.

Caspase Drug Screening Kits

Inhibition of caspases has been shown to delay apoptosis, implicating a potential role in drug screening efforts. PromoKine provides a full line of Caspase Drug Screening Kits for effective screening of caspase inhibitors using fluorometric methods. The assays utilize peptide substrates containing consensus cleavage sequences specific for each caspase, labeled with AFC (7-amino-4-trifluoromethyl coumarin). Active caspases (provided in the kits) cleave the synthetic substrates to release free AFC which can then be quantified using a microtiter plate reader. Compounds to be screened can directly be added to the reaction and the level of caspase inhibition can then be determined. The assays are simple, straightforward, and can be performed directly in microtiter plates. Assay conditions for each caspase have been optimized to obtain the maximal activity.

Cat No	Product Name	Description	Pack Size
PK-CA577-K180-25	Green Multi-Caspase Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K180-100	Green Multi-Caspase Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K190-25	Red Multi-Caspase Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K190-100	Red Multi-Caspase Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K182-25	Green Caspase-2 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K182-100	Green Caspase-2 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K183-25	Green Caspase-3 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K183-100	Green Caspase-3 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K193-25	Red Caspase-3 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K193-100	Red Caspase-3 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K188-25	Green Caspase-8 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K188-100	Green Caspase-8 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-K198-25	Red Caspase-8 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K198-100	Red Caspase-8 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K189-25	Green Caspase-9 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K189-100	Green Caspase-9 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K199-25	Red Caspase-9 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K199-100	Red Caspase-9 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-K172-25	Green Caspase-12 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	25 assays
PK-CA577-K172-100	Green Caspase-12 Staining Kit	Kit for fluorometric detection of activated caspases in situ in living cells	100 assays
PK-CA577-1266-100	Caspase Staining Kit Wash Buffer		100 ml
PK-CA577-K200-25	Caspase Screening Kit (FC)	Detects caspase activation by flow cytometry	25 assays
PK-CA577-K200-100	Caspase Screening Kit (FC)	Detects caspase activation by flow cytometry	100 assays
PK-CA577-K151-100	Caspase-1 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K152-100	Caspase-2 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K153-100	Caspase-3 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K154-100	Caspase-4 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K155-100	Caspase-5 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays

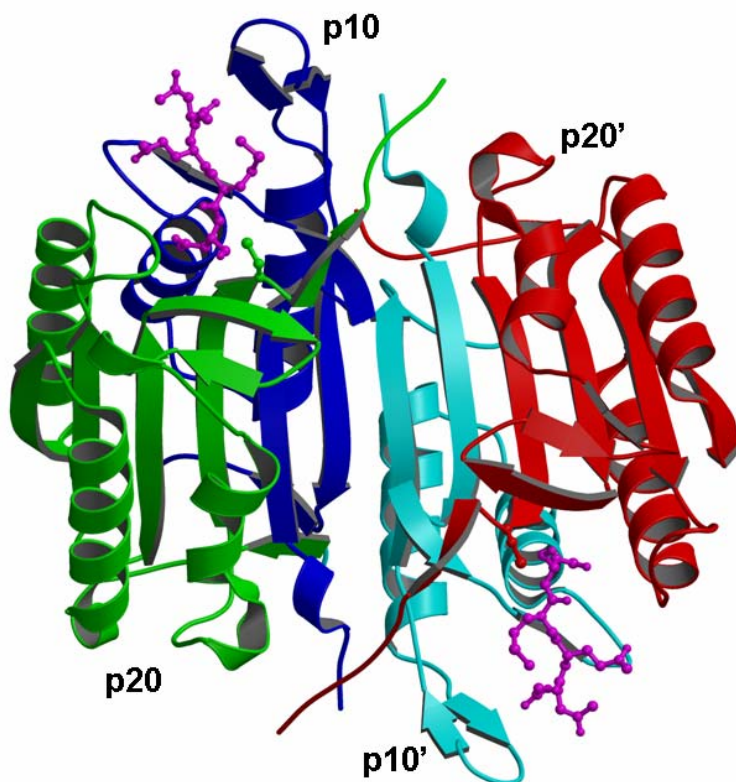
Cat No	Product Name	Description	Pack Size
PK-CA577-K156-100	Caspase-6 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K157-100	Caspase-7 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K158-100	Caspase-8 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K159-100	Caspase-9 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K160-100	Caspase-10 Drug Screening Kit	Kit for measuring caspase activity and caspase-1 inhibitor screening by fluorometer or fluorescence plate reader	100 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-K111-25	Caspase-1 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K111-100	Caspase-1 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K111-200	Caspase-1 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K111-400	Caspase-1 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K110-25	Caspase-1 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K110-100	Caspase-1 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K110-200	Caspase-1 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K110-400	Caspase-1 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K125-25	Caspase-10 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K125-100	Caspase-10 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K124-25	Caspase-10 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K124-100	Caspase-10 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K139-25	Caspase-12 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K139-100	Caspase-12 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K117-25	Caspase-2 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-K117-100	Caspase-2 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K117-200	Caspase-2 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K117-400	Caspase-2 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K116-25	Caspase-2 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K116-100	Caspase-2 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K116-200	Caspase-2 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K116-400	Caspase-2 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA707-30008-2	Caspase-3 Fluorometric & Colorimetric Assay Kit	Kit for measuring caspase activity by spectrometer, fluorometer or plate reader	100 assays
PK-CA577-K106-25	Caspase-3 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K106-100	Caspase-3 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K106-200	Caspase-3 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K106-400	Caspase-3 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA707-30008-1	Caspase-3 Fluorometric & Colorimetric Assay Kit	Kit for measuring caspase activity by spectrometer, fluorometer or plate reader	25 assays
PK-CA577-K105-25	Caspase-3 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K105-100	Caspase-3 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K105-200	Caspase-3 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K105-400	Caspase-3 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA707-30009-3	Caspase-3 Fluorometric Assay Kit (HTS)	Kit for measuring caspase activity by fluorometer or plate reader	100 ml
PK-CA707-30009-2	Caspase-3 Fluorometric Assay Kit (HTS)	Kit for measuring caspase activity by fluorometer or plate reader	10 ml
PK-CA707-30009-1	Caspase-3 Fluorometric Assay Kit (HTS)	Kit for measuring caspase activity by fluorometer or plate reader	1 ml
PK-CA577-K163-100	Caspase-3 Immunoassay Kit	Specifically detect Caspase-3 activity in microtiter plate	100 assays
PK-CA577-K127-25	Caspase-4 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K127-100	Caspase-4 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K126-25	Caspase-4 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K126-100	Caspase-4 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K126-200	Caspase-4 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K123-25	Caspase-5 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays

Cat No	Product Name		Description	Pack Size
PK-CA577-K123-100	Caspase-5 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K123-200	Caspase-5 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K123-400	Caspase-5 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K122-25	Caspase-5 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K122-100	Caspase-5 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K122-200	Caspase-5 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K122-400	Caspase-5 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K115-25	Caspase-6 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K115-100	Caspase-6 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K115-200	Caspase-6 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K115-400	Caspase-6 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K114-25	Caspase-6 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K114-100	Caspase-6 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K114-200	Caspase-6 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K114-400	Caspase-6 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K167-100	Caspase-7 Assay Kit	Immunoassay	Specifically detect Caspase-7 activity in microtiter plate.	100 assays
PK-CA577-K113-25	Caspase-8 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K113-100	Caspase-8 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K113-200	Caspase-8 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K113-400	Caspase-8 Assay Kit	Colorimetric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA707-30011-2	Caspase-8 & Colorimetric Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrometer, fluorometer or plate reader	100 assays
PK-CA707-30011-1	Caspase-8 & Colorimetric Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrometer, fluorometer or plate reader	25 assays
PK-CA577-K112-25	Caspase-8 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K112-100	Caspase-8 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K112-200	Caspase-8 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K112-400	Caspase-8 Assay Kit	Fluorometric	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA707-30012-1	Caspase-8 Assay Kit (HTS)	Fluorometric	Kit for measuring caspase activity by fluorometer or plate reader	1 ml

Cat No	Product Name	Description	Pack Size
PK-CA707-30012-2	Caspase-8 Fluorometric Assay Kit (HTS)	Kit for measuring caspase activity by fluorometer or plate reader	10 ml
PK-CA707-30012-3	Caspase-8 Fluorometric Assay Kit (HTS)	Kit for measuring caspase activity by fluorometer or plate reader	100 ml
PK-CA577-K119-25	Caspase-9 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K119-100	Caspase-9 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K119-200	Caspase-9 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K119-400	Caspase-9 Colorimetric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays
PK-CA577-K118-25	Caspase-9 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	25 assays
PK-CA577-K118-100	Caspase-9 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	100 assays
PK-CA577-K118-200	Caspase-9 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	200 assays
PK-CA577-K118-400	Caspase-9 Fluorometric Assay Kit	Kit for measuring caspase activity by spectrophotometer or plate reader	400 assays



Human Caspase-7 Crystal Structure Image

Cathepsin & Calpain Detection

Applications

- Screening for apoptotic cells
- Cathepsin/ Calpain detection
- Fluorescence microscopy

Benefits

- Non-radioactive method
- Easy and fast procedure
- Appropriate for various multiwell formats and automation
- Excitation and emission spectra are compatible with common fluorometers/ fluorescence plate readers

Apoptosis can be mediated by mechanisms other than the traditional caspase-mediated cleavage cascade. There is growing knowledge that alternative proteolytic enzymes such as the lysosomal cathepsin proteases may initiate or propagate proapoptotic signals, but it is currently unclear how cathepsin mediates apoptosis.

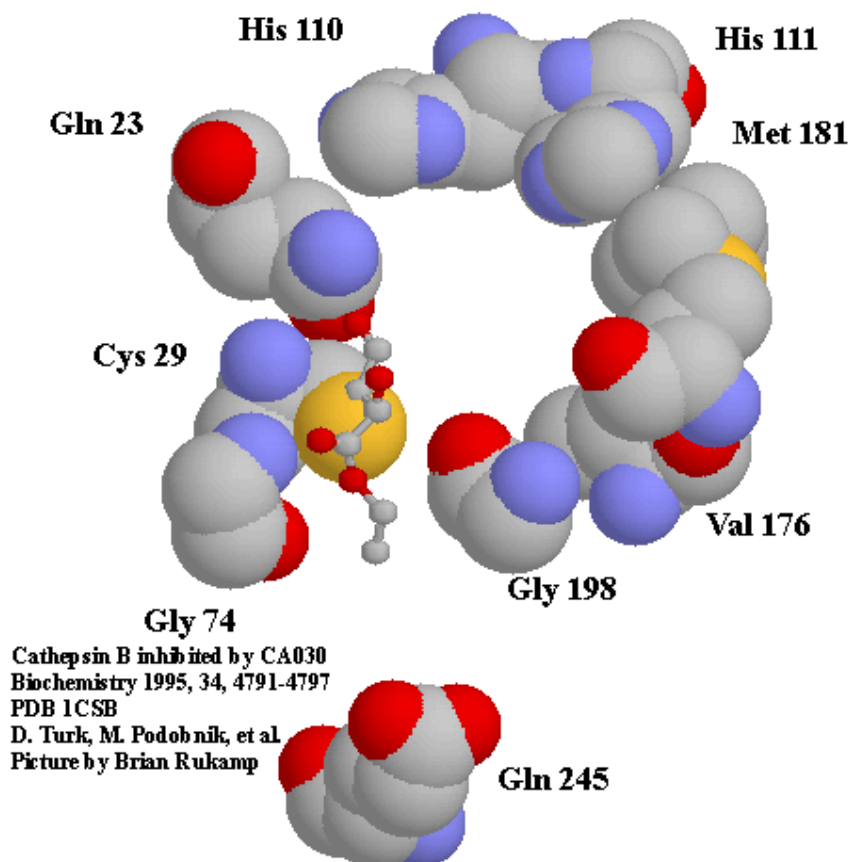
Cathepsin Activity Kits

The Cathepsin Activity Kits are fluorescence-based and utilize the preferred substrate sequence for each cathepsin, labeled with AFC (amino-4-trifluoromethyl coumarin). Cell lysates or other samples that contain cathepsins will cleave the synthetic substrate to release free AFC that can be easily quantified using a fluorometer or a fluorescence plate reader. The cathepsin assays are easy to perform and can be adapted to 96-well plate format. Assay conditions have been optimized to obtain the maximal activity. Active cathepsin and cathepsin inhibitors are also available separately.

Calpain Detection Kit

Activation of calpain is involved in many physiological and pathological processes (e.g., apoptosis). The Calpain Activity Kit provides a simple and convenient means for analyzing calpain activity in apoptotic and other samples. The assay is based on fluorometric detection and quantitation of the cleavage of a calpain substrate at 505 nm using a fluorometer or a fluorescence plate reader. The kit contains both positive and negative controls. Comparison of the fluorescence intensity from a treated sample with a normal control allows determination of the changes in calpain activity. Active calpain and calpain inhibitors and antibodies are also available separately.

Cat No	Product Name	Description	Pack Size
PK-CA577-K240-100	Calpain Activity Kit	Kit provides a simple and convenient means for analyzing calpain activity in apoptotic and other samples	100 assays
PK-CA577-K140-100	Cathepsin B Activity Kit	For measuring cathepsin B activity by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K143-100	Cathepsin D Activity Kit	For measuring cathepsin D activity by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K145-100	Cathepsin H Activity Kit	For measuring cathepsin H activity by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K141-100	Cathepsin K Activity Kit	For measuring cathepsin K activity by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K142-100	Cathepsin L Activity Kit	For measuring cathepsin L activity by fluorometer or fluorescence plate reader	100 assays
PK-CA577-K144-100	Cathepsin S Activity Kit	For measuring cathepsin S activity by fluorometer or fluorescence plate reader	100 assays
PK-RP577-4811-5	rHu Cathepsin D	Active Human Cathepsin D	5 µg
PK-RP577-1134-100	rHu Calpain I	Active Human Calpain I	100 µg
PK-RP577-1135-100	rHu Cathepsin L	Active Human Cathepsin L	100 µg
PK-CA577-1125-20C	Calpain Inhibitor Z-LLY-FMK	Ready-to-use reagent	20 ul (10 mM)
PK-CA577-1125-20C	Calpain Inhibitor Z-LLY-FMK	Ready-to-use reagent	20 ul (10 mM)
PK-CA577-1126-20C	Cathepsin B&L Inhibitor Z-Phe-Phe-FMK	Ready-to-use reagent	20 ul (10 mM)



Kinase Detection

- JNK Activity Screening Kit
- JNK Activity Immunoassay Kit
- Akt Activity Immunoassay Kit
- Individual Kinase Reagents

Applications

- Screening for apoptotic cells
- Kinase detection and activity screening

Benefits

- Non-radioactive method
- Easy, accurate and fast procedure
- Compatible with standard lab equipment

The activation of protein kinases, such as JNK and Akt, plays an important role in apoptosis and other physiological and pathological processes. PromoKine provides a novel nonradioactive system for convenient measurement of JNK and Akt activities.

JNK Activity Screening Kit

The JNK Activity Screening Kit is used to screen JNK activity quickly - also for large numbers of samples. The assay utilizes an N-terminal c-Jun fusion protein bound to glutathion sepharose beads to selectively isolate JNK from cell lysate. After a washing step to remove nonspecifically bound proteins, the kinase reaction is carried out in the presence of cold ATP. c-Jun phosphorylation is then determined by Western blot analysis using a phospho-c-Jun specific antibody.

JNK Activity Immunoassay Kit

The JNK Activity Immunoassay Kit utilizes a JNK-specific antibody to immunoprecipitate JNK from cell lysate. Activity of the JNK is then detected in a kinase reaction using recombinant c-Jun as substrate. c-Jun phosphorylation is determined by Western blotting using a phospho-c-Jun specific antibody. The kit specifically detects JNK activity; other kinase activities would not be detected.

Akt Activity Immunoassay Kit

The Akt Activity Immunoassay Kit utilizes an Akt-specific antibody to immunoprecipitate Akt from cell lysate. Akt- specific activity is then detected in a kinase reaction using recombinant GSK-3 α ; as substrate. Phosphorylation levels of GSK-3 α are determined by Western blot analysis using a phospho-GSK-3 α specific antibody included in the kit. The kit specifically detects Akt1, Akt2, and Akt3 activities, other kinase activities would not be detected.

Catalog Number	Product Name	Description	Size
PK-CA577-K435-40	Akt Activity Assay Kit	Complete kit for quick screening of Akt activity	40 assays
PK-CA577-K431-40	JNK Activity Assay Kit	Complete kit for quick screening of JNK activity	40 assays
PK-CA577-K430-40	JNK Activity Screening Kit	Complete kit for quick screening of JNK activity	40 assays

Individual Kinase Reagents

A wide range of active kinases (including JNK and Akt kinases) and kinase antibodies as well as kinase substrates, activators, inhibitors and control cell lysates are also available.

- Active Kinases
- Kinase Substrates
- Kinase Inhibitors

Cat No	Product Name	Description	Pack Size
PK-RP577-7701-5	rHu Akt1	Highly active human Akt1 (purity >90%).	5 µg
PK-RP577-7702-5	rHu Akt2	Highly active human Akt2 expressed in Sf 9 cells	5 µg
PK-RP577-7703-5	rHu Akt3	Highly active human Akt3 expressed in Sf9 cells (purity > 90%).	5 µg
PK-RP577-7710-5	rHu ASK1	Highly active human ASK1 expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7723-5	rHu BLK	Highly active human BLK expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7732-5	rHu BMX	Highly active human BMX expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7708-5	rHu BRK	Highly active human BRK expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7729-5	rHu CAMK1b	Highly active human CAMK1b expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7713-5	rHu CAMK1d	Highly active human CAMK1d expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7736-5	rHu CAMK1G	Highly active human CAMK1G expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7740-5	rHu CAMK4	Highly active human CAMK4 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7735-5	rHu CHK1	Highly active human CHK1 expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7712-5	rHu CHK2	Highly active human CHK2 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7738-5	rHu CK2a1	Highly active human CK2a1 expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7722-5	rHu CSK	Highly active human CSK expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7741-5	rHu ERK1	Highly active human ERK1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7724-5	rHu FGR	Highly active human FGR expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7709-5	rHu GRK5	Highly active human GRK5 expressed in Sf 9 cells (purity > 95%).	5 µg

Cat No	Product Name	Description	Pack Size
PK-RP577-7734-5	rHu GSK3b	Highly active human GSK3b expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7720-5	rHu HCK	Highly active human HCK expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7733-5	rHu Lck	Highly active human Lck expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7715-5	rHu Lyn B	Highly active human Lyn B expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7737-5	rHu MAPKAP kinase 2	Highly active human MAPKAP kinase 2 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7755-5	rHu MAPKAPK3	Highly active human expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7719-5	rHu NEK2	Highly active human Nek2 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7716-5	rHu NEK6	Highly active human Nek6 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7717-5	rHu NEK7	Highly active human NEK7 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7754-5	rHu P38delta	Highly active human p38delta expressed in Sf 9 cells (purity > 80%).	5 µg
PK-RP577-7725-5	rHu p70 S6K	Highly active human p70 S6K expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7707-5	rHu PAK4	Highly active human PAK4 expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7727-5	rHu PAK7	Highly active human PAK7 expressed in Sf 9 cells.	5 µg
PK-RP577-7706-5	rHu PDK1	Highly active human PDK1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7742-5	rHu Pim 1	Highly active human Pim 1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7730-5	rHu PIM2	Highly active human PIM2 expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7728-5	rHu PKA cg	Highly active human PKA cg expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7743-5	rHu PKAca	Highly active human PKAca expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7744-5	rHu PKAcb	Highly active human PKAcb expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7704-5	rHu PKC bII	Highly active human PKC bII expressed in Sf9 cells (purity > 90%).	5 µg
PK-RP577-7739-5	rHu PKC delta	Highly active human PKC delta expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7705-5	rHu PKC iota	Highly active human PKC iota expressed in Sf9 cells (purity > 90%).	5 µg
PK-RP577-7714-5	rHu PKCa	Highly active human PKCa expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7753-5	rHu PKCepsilon	Highly active human PKCepsilon expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7731-5	rHu PKCeta	Highly active human PKCeta expressed in Sf 9 cells (purity > 95%).	5 µg
PK-RP577-7745-5	rHu PKCmu	Highly active human PKCmu expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7746-5	rHu PKCnu	Highly active human PKCnu expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7718-5	rHu PKCzeta	Highly active human PKCzeta expressed in Sf 9 cells (purity > 90%).	5 µg

Cat No	Product Name	Description	Pack Size
PK-RP577-7711-5	rHu PKD2	Highly active human PDK2 expressed in Sf 9 cells.	5 µg
PK-RP577-7726-5	rHu RAF1	Highly active human RAF1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7747-5	rHu RIPK2	Highly active human RIPK2 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7721-5	rHu RSK1	Highly active human RSK1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7748-5	rHu SGK1	Highly active human SGK1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7749-5	rHu SGK2	Highly active human SGK2 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7750-5	rHu Src1	Highly active human Src1 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7751-5	rHu STK3	Highly active human STK3 expressed in Sf 9 cells (purity > 90%).	5 µg
PK-RP577-7752-5	rHu ZAP70	Highly active human ZAP70 expressed in Sf 9 cells (purity > 90%).	5 µg

Cat No	Product Name	Description	Pack Size
PK-CA577-1077-100	AFC (7-amino-4-trifluoromethyl-coumarin)	AFC can be used as a fluorescent marker and standard in fluorometric caspase assays	100 mg
PK-CA577-K132	Caspase Colorimetric Substrate Set	Contains ready-to-use caspase-1/-2/-3/-5/-6/-8/-9 pNA substrates	7 x 25 assays
PK-CA577-K134	Caspase Colorimetric Substrate Set II	Contains ready-to-use caspase-1/-2/-3/-4/-5/-6/-8/-9/-10 PNA substrates	9 x 25 assays
PK-CA577-K138	Caspase Colorimetric Substrate Set II Plus	Contains ready-to-use caspase-1/-2/-3/-4/-5/-6/-8/-9/-10 pNA-labeled substrates and all buffers for performing caspase assay	9 x 25 assays
PK-CA577-K136	Caspase Colorimetric Substrate Set Plus	Contains ready-to-use caspase-1/-2/-3/-5/-6/-8/-9 pNA-labeled substrates and all buffers for performing caspase assay.	7 x 25 assays
PK-CA577-K131	Caspase Fluorometric Substrate Set	Contains ready-to-use caspase-1/-2/-3/-5/-6/-8/-9 AFC substrates	7 x 25 assays
PK-CA577-K133	Caspase Fluorometric Substrate Set II	Contains ready-to-use caspase-1/-2/-3/-4/-5/-6/-8/-9/-10 AFC substrates	9 x 25 assays
PK-CA577-K137	Caspase Fluorometric Substrate Set II Plus	Contains ready-to-use caspase-1/-2/-3/-4/-5/-6/-8/-9/-10 AFC-labeled substrates and all buffers for performing caspase assay	9 x 25 assays
PK-CA577-K135	Caspase Fluorometric Substrate Set Plus	Contains ready-to-use caspase-1/-2/-3/-5/-6/-8/-9 AFC-labeled substrates and all buffers for performing caspase assay	7 x 25 assays
PK-CA577-1103-1000	Caspase-1 Substrate YVAD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1103-200	Caspase-1 Substrate YVAD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1104-1000	Caspase-1 Substrate YVAD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1104-200	Caspase-1 Substrate YVAD-pNA	Provided in the ready-to-use form	200 assays
PK-CA577-1113-1000	Caspase-10 Substrate AEVD-AFC	Provided in the ready-to-use form	1000 assays

KRISHGEN BioSystems

Cat No	Product Name	Description	Pack Size
PK-CA577-1113-200	Caspase-10 Substrate AEVD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1114-1000	Caspase-10 Substrate AEVD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1114-200	Caspase-10 Substrate AEVD-pNA	Provided in the ready-to-use form	200 assays
PK-CA577-1117-1000	Caspase-12 Substrate ATAD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1117-200	Caspase-12 Substrate ATAD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1116-1000	Caspase-13 Substrate LEED-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1116-200	Caspase-13 Substrate LEED-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1071-1000	Caspase-2 Substrate VDVAD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1071-200	Caspase-2 Substrate VDVAD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1072-1000	Caspase-2 Substrate VDVAD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1072-200	Caspase-2 Substrate VDVAD-pNA	Provided in the ready-to-use form	200 assays
PK-CA707-10202	Caspase-3 Substrate Ac-DEVD-AMC	Provided in the ready-to-use form	5 mg
PK-CA577-1007-1000	Caspase-3 Substrate DEVD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1007-200	Caspase-3 Substrate DEVD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1008-1000	Caspase-3 Substrate DEVD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1008-200	Caspase-3 Substrate DEVD-pNA	Provided in the ready-to-use form	200 assays
PK-CA577-1109-1000	Caspase-4 Substrate LEVD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1109-200	Caspase-4 Substrate LEVD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1110-1000	Caspase-4 Substrate LEVD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1110-200	Caspase-4 Substrate LEVD-pNA	Provided in the ready-to-use form	200 assays
PK-CA577-1101-1000	Caspase-5 Substrate WEHD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1101-200	Caspase-5 Substrate WEHD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1102-1000	Caspase-5 Substrate WEHD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1102-200	Caspase-5 Substrate WEHD-pNA	Provided in the ready-to-use form	200 assays
PK-CA577-1069-1000	Caspase-6 Substrate VEID-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1069-200	Caspase-6 Substrate VEID-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1070-1000	Caspase-6 Substrate VEID-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1070-200	Caspase-6 Substrate VEID-pNA	Provided in the ready-to-use form	200 assays

Cat No	Product Name	Description	Pack Size
PK-CA577-1062-1000	Caspase-8 Substrate IETD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1062-200	Caspase-8 Substrate IETD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1063-1000	Caspase-8 Substrate IETD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1063-200	Caspase-8 Substrate IETD-pNA	Provided in the ready-to-use form	200 assays
PK-CA707-10207	Caspase-8 Substrate Z-IETD-R110	Provided in the ready-to-use form	5 mg
PK-CA577-1075-1000	Caspase-9 Substrate LEHD-AFC	Provided in the ready-to-use form	1000 assays
PK-CA577-1075-200	Caspase-9 Substrate LEHD-AFC	Provided in the ready-to-use form	200 assays
PK-CA577-1076-1000	Caspase-9 Substrate LEHD-pNA	Provided in the ready-to-use form	1000 assays
PK-CA577-1076-200	Caspase-9 Substrate LEHD-pNA	Provided in the ready-to-use form	200 assays
PK-CA707-10209	Cathepsin B & L Substrate Z-FR-R110	Provided in the ready-to-use form	5 mg
PK-CA707-10201	Cathepsin Substrate Z-FR-AMC (Z-FR-MCA)	Substrate for Serine Proteases; provided in the ready-to-use form	25 mg
PK-CA577-1131-1	D2R [(L-Asp) ₂ rhodamine 110]	General caspase substrate	1 mg
PK-CA707-10210	D2R [Rhodamine 110, bis-(L-aspartic acid amide), ditrifluoroacetic acid salt]	General caspase substrate	2 mg
PK-CA707-10211	Granzyme B Substrate Z-AAD-R110	Provided in the ready-to-use form	5 mg
PK-CA577-1078-100	pNA (p-nitroaniline)	pNA can be used as a colorimetric marker and standard in colorimetric caspase activity assays	100 mg
PK-CA707-10225	R110-PEG (Rhodamine 110-PEG)	Reference standard for peptidase substrates based on that dye	5 mg

Apoptotic Cell Isolation Kit

Applications

- Isolation of apoptotic cells
- Removal of dead cells from culture

Benefits

- Fast, simple and efficient
- Ready-to-use, complete kit

The PromoKine Apoptotic Cell Isolation Kit provides a simple and efficient means for isolation of apoptotic cells or removal of dead cells from cell culture or tissue preparations using Annexin V magnetic beads (MagBeads). Since Annexin V is a phospholipid-binding protein with high affinity for phosphatidylserine (PS), it binds strongly to PS that is redistributed from the inner to the outer surface of plasma membrane during apoptosis. Binding of Annexin V-biotin to apoptotic cells is followed by binding of the biotin to streptavidin-MagBeads enabling separation of apoptotic cells from normal cells. The apoptotic cells bound to the MagBeads adhere to the magnet - while normal cells stay in suspension. The bound apoptotic cells can then be released from the MagBeads using the *Elution Buffer* provided in the kit. The separated apoptotic cells and normal cells can be used in a variety of assays to study apoptotic mechanisms and pathways. The kit has also been successfully used to remove dead cells from normal culture. A re-usable magnetic separator designed for that kit is also available.

Cat No	Product Name	Description	Pack Size
PK-CA577-K258-30	Apoptotic Cell Isolation Kit	Isolation of apoptotic cells from normal culture using annexin V magnetic beads (MagBeads)	30 isolations
PK-CA577-K1999-1	Magnetic Separator (re-usable)	Uses in conjunction with the Apoptotic Cell Isolation Kit	1 unit

Apoptosis Inducers

Applications

- Induction of apoptotic effects
- Ideally suited for use with diverse apoptosis detection systems

Benefits

- high quality
- ready-to-use

PromoKine offers a selected choice of high quality apoptosis inducers, partially in ready-to-use form or in a convenient set. The apoptosis inducers are well characterized and effective e.g. in disrupting mitochondrial transmembrane potential and activating caspases as well as inducing phosphatidyl-serine (PS) exposure, DNA fragmentation and other apoptotic characteristics. All inducers are ideally suited for use with various of PromoKine's apoptosis detection systems. Diverse high quality antibodies, cytokines and growth factors that are involved in apoptosis as well as Apoptosis ELISAs are also available separately.

Cat No	Product Name	Description	Pack Size
PK-CA577-1036-5	Actinomycin D	Potent inducer of apoptosis in many cell lines	5 mg
PK-CA577-1036-50	Actinomycin D	Potent inducer of apoptosis in many cell lines	50 mg
PK-CA577-1036	Actinomycin D (10 mM)	Ready-to-use apoptosis inducer	50 µl
PK-CA577-1549	Anisomycin	Activator of p54 and MAP kinases; induces apoptosis e.g. in the human monoblastoid cell line	10 mg
PK-CA577-K121	Apoptosis Inducer Set	Contains 5 ready-to-use apoptosis inducers (Actinomycin D, Camptothecin, Cycloheximide, Dexamethasone, Etoposide) in a kit format	1 kit
PK-CA577-1552	Betulinic acid	Anti-tumor and anti-HIV agent that induces apoptosis	25 mg
PK-CA577-1560	Brefeldin A	Induces apoptosis via caspase activation	5 mg
PK-CA577-1039-500MG	Camptothecin	Induces apoptosis e.g. in Jurkat, osteosarcoma and hepatoma cells	500 mg
PK-CA577-1039-50MG	Camptothecin	Induces apoptosis e.g. in Jurkat, osteosarcoma and hepatoma cells	50 mg
PK-CA577-1039-1	Camptothecin (2 mM)	Ready-to-use apoptosis inducer	1 ml
PK-CA577-1519	Colchicine	Induce apoptosis e.g. in PC-12 cells and cerebellar granule cells	1 g
PK-CA577-1041-1G	Cycloheximide	Induces apoptosis in a variety of cells but can also delay or inhibit apoptosis by other agents	1 g
PK-CA577-1041-1	Cycloheximide (100 mM)	Ready-to-use apoptosis inducer	1 ml
PK-CA577-1524	Daunorubicin.HCl	Induces DNA single strand breaks and apoptosis e.g. in HeLaS3 tumor cells	10 mg
PK-CA577-1042-10G	Dexamethasone	Induces apoptosis e.g. in human thymocytes	10 g
PK-CA577-1042-1G	Dexamethasone	Induces apoptosis e.g. in human thymocytes	1 g
PK-CA577-1042-1	Dexamethasone (10 mM)	Ready-to-use apoptosis inducer	1 ml
PK-CA577-1527	Doxorubicin.HCl	Anti-tumor antibiotic that induces apoptosis	5 mg
PK-CA577-1043-250MG	Etoposide	Induces apoptosis e.g. in human T cells, mouse thymocytes, and HL-60 human leukemia cells	250 mg
PK-CA577-1043-25MG	Etoposide	Induces apoptosis e.g. in human T cells, mouse thymocytes, and HL-60 human leukemia cells	25 mg
PK-CA577-1043-100	Etoposide (10 mM)	Ready-to-use apoptosis inducer	100 µl
PK-CA577-1533-10	Genistein	Produces cell cycle arrest and apoptosis (>99% pure)	10 mg
PK-CA577-1533-100	Genistein	Produces cell cycle arrest and apoptosis (>99% pure)	100 mg
PK-CA577-1535-10	Genistin	Produces cell cycle arrest and apoptosis (>99% pure)	10 mg

Cat No	Product Name	Description	Pack Size
PK-CA577-1566	Ionomycin (calcium salt)	Useful in cell activation experiments when calcium dose-response data are not required (>90% pure)	5 mg
PK-CA577-1565	Iononycin (free acid)	Useful for studies of Ca ²⁺ transport across biological membranes and measurement of cytoplasmic free Ca ²⁺ ; induces apoptotic neuronal degeneration in embryonic cortical neurons (>90% pure)	5 mg
PK-CA578-M1108-10	Mitomycin C	Inhibitor of DNA synthesis, nuclear division. Induces apoptosis in cancer cells.	10 mg
PK-CA578-M1108-100	Mitomycin C	Inhibitor of DNA synthesis, nuclear division. Induces apoptosis in cancer cells.	100 mg
PK-CA578-M1108-5	Mitomycin C	Inhibitor of DNA synthesis, nuclear division. Induces apoptosis in cancer cells.	5 mg
PK-CA577-1543	Okadaic acid	Induces apoptosis e.g. in human breast carcinoma cells (MB-231 and MCF-7) and in myeloid cells, but inhibits glucocorticoid-induced apoptosis in T-cell hybridomas	25 µg
PK-CA577-1544	Phorbol-12-myristate 13-acetate (PMA)	Inhibits apoptosis induced by the Fas antigen, but induces apoptosis e.g. in HL-60 promyelocytic leukemia cells	5 mg
PK-CA577-1568-5	Rapamycin	Reported to induce apoptosis in a murine B cell line (>99% pure)	5 mg
PK-CA577-1568-50	Rapamycin	Reported to induce apoptosis in a murine B cell line (>99% pure)	50 mg
PK-CA577-1559-100	Rosiglitazone	Induces apoptosis in various cells, e.g. in vascular smooth muscle cells	100 mg
PK-CA577-1559-5	Rosiglitazone	Induces apoptosis in various cells, e.g. in vascular smooth muscle cells	5 mg
PK-CA577-1048-1	Staurosporine	Potent apoptosis inducer	1 mg
PK-CA577-1048-100	Staurosporine	Potent apoptosis inducer	100 µg
PK-CA577-1551	Tamoxifen citrate	Induces apoptosis e.g. in human malignant glioma cell lines	1 g
PK-CA577-1558	Thapsigargin	Induces apoptosis in rat thymocytes and in human hepatoma cells (>99% pure)	1 mg
PK-CA577-1571	Tyrphostin AG 1295	"Specific and potent inhibitor of JAK2 protein tyrosine kinase, EGF receptor autophosphorylation, DNA synthesis and cell growth (>99%)	5 mg
PK-CA577-1570	Tyrphostin AG 490	"Specific and potent inhibitor of JAK2 protein tyrosine kinase, EGF receptor autophosphorylation, DNA synthesis and cell growth (>99%)	5 mg