

FAM-DEVD-OPH in vitro Apoptosis Detection Kit | FAM-DEVD-OPH detection kit

FAM-DEVD-OPH in vitro Apoptosis Detection Reagent, Pack of 4 Vials

CATALOG #
AAA52733

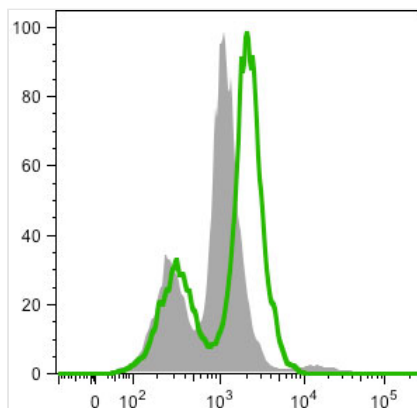
PRODUCT SYNONYMS

FAM-DEVD-OPH in vitro Apoptosis; FAM-DEVD-OPH in vitro Apoptosis Detection Reagent; Pack of 4 Vials; FAM-DEVD-OPH detection kit

PRODUCT SPECIFICATIONS

Sample Protocol	FAM-OPH Apoptosis Detection Reagents FAM-DEVD-OPH, FAM-VAD-OPH I, and FAM-VAD-OPH II offer a simple yet accurate method to measure caspase activity in cell culture or live animals. Two sample protocols are outlined below.
Target	Apoptosis, Poly Caspases
Excitation / Emission	488-492 nm / 515-535 nm
Method of Analysis	Flow Cytometer, Fluorescence Microscope, Fluorescence Plate Reader
Types of Samples	Cell Culture, Tissue
Preparation and Storage	Store at 2-8 degree C

IMAGES



Application Data

Jurkat cells (lymphocytes) were treated with 1 μ M staurosporine for 4 hours to induce apoptosis via caspase activity. Cells were then stained with either FAM-VAD-OPH or FLICA FAM-VAD-FMK green fluorescent polycaspase inhibitor probes at 10 μ M for 1 hour. Cells were washed twice and read on a BD FACSCanto flow cytometer. Histograms were made of cell fluorescence intensity output. Staining results with the OPH-based caspase inhibitor (grey solid) are consistent with those achieved using the FMK-based caspase inhibitor (green outline). FAM-VAD-OPH caspase inhibitor reagents mirror FAM-VAD-FMK analogs for in vitro apoptosis detection, and they may be less toxic and more stable.

ADDITIONAL INFORMATION

Related Product Information for FAM-DEVD-OPH detection kit	Description: Detect apoptosis in cultured cell settings with the green fluorescent caspase 3/7 inhibitor reagent, FAM-DEVD-OPH. FAM-DEVD-OPH: 5-FAM-Asp-Glu-Val-Asp(OMe)-Oph (2,6-diF) caspase 3/7 inhibitor; Pack of 4 Vials. Background: Apoptosis Detection with FAM-DEVD-OPH Caspase 3-7 Inhibitor Apoptosis is an evolutionarily conserved process of programmed cell suicide mediated by a cascade of proteolytic enzymes called caspases. Once activated in response to pro-apoptotic signals, caspases cleave protein substrates leading to the eventual disassembly of the cell¹. Caspase Inhibitors with FMK Reactive Groups Early research studies using short peptide sequences linked to an aldehyde or fluoromethyl ketone (FMK) reactive group identified a number of peptide sequences preferentially targeted by different caspase enzymes. For example, the sequence Asp-Glu-Val-Asp (DEVD) is cleaved by activated caspase-3 and the sequence Val-Ala-Asp (VAD) demonstrates multiple caspase (activated caspase -1, -2, -3, -4, -5, -6, -7 -8, -9) recognition properties². When linked to an FMK reactive group, the resulting peptide-FMK molecule will form an irreversible, covalent thioether adduct with the reactive SH-site of caspase enzymes. AAA Biotech utilized these findings to develop the often-cited FLICA (FLuorescence Labeled Inhibitors of CAspases) and FLIVO (FLuorescence in vivo, now discontinued) caspase inhibitor and apoptosis detection reagents, both of which have been widely used for years as simple and reliable methods for screening apoptosis in live cells, tissues, and whole animals. These reagents consist of short peptide sequences with varying caspase specificities, a fluorescent label, such as carboxyfluorescein (FAM), and an FMK reactive moiety. The resulting fluorescent, cell-permeant, non-cytotoxic caspase inhibitor reagents can be added to cell culture media for whole cell apoptosis detection. These labeled caspase inhibitors permeate the cell membrane and form irreversible covalent bonds with activated caspase enzymes inside apoptotic cells, which can then be differentiated from non-apoptotic cells by their retained fluorescence. Caspase Inhibitors with O-phenoxy Reactive Groups AAA Biotech has now released a novel set of inhibitor reagents that employ an O-phenoxy (OPH) reactive group in place of an FMK group. In a manner analogous to the FMK class of cysteine reactive compounds, the OPH caspase inhibitors form a stable, covalent thioether adduct with the reactive SH-site of caspase enzymes present in apoptotic cells³. OPH inhibitor compounds have the benefit of being extremely non-cytotoxic, display enhanced stability characteristics compared to the FMK analogs, and have been optimized to provide a high level of performance for in vitro applications³⁻⁴. The new FAM-OPH line of green fluorescent in vitro apoptosis detection reagents includes 5-FAM-Val-Ala-Asp(OMe)-2,6-difluorophenoxy-methyl ketone (FAM-VAD-OPH I) poly caspase inhibitor, 5-FAM-Val-Ala-Asp(OMe)-Oph (2,6-diF) (FAM-VAD-OPH II) poly caspase inhibitor, and 5-FAM-Asp-Glu-Val-Asp(OMe)-Oph (2,6-diF) (FAM-DEVD-OPH) caspase 3-7 inhibitor. A red fluorescent poly caspase inhibitor is also available: SR-VAD-OPH.
Product Categories/Family for FAM-DEVD-OPH detection kit	FAM-DEVD-OPH Caspase 3
References	Slee, E. A., et. al. Serial killers: ordering caspase activation events in apoptosis. Cell Death Differ. 6:1067-1074 (1999) Thornberry, A., et. al. A combinatorial approach defines specificities of members of the caspase family and granzyme B. J Bio Chem. 272(29):17907-17911 (1997). Chauvier, D., et. al. Broad spectrum caspase inhibitors: from myth to reality? Cell Death Differ. 14:387-391 (2007). Callus, B. A. and Vaux, D. L. Caspase inhibitors: viral, cellular, and chemical. Cell Death Differ. 14:73-78 (2007).

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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 Online datasheet: <https://stage.aaabiotech.com/detection-kits/fam-devd-oph-in-vitro-apoptosis/52733>