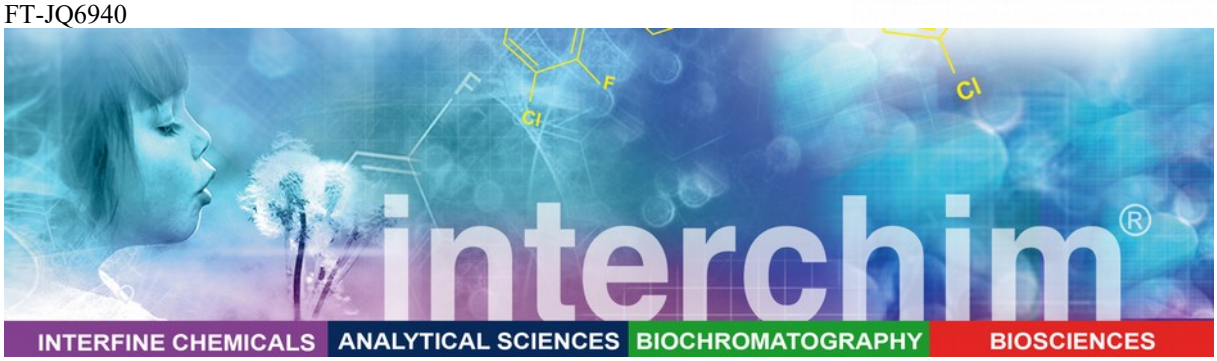
FT-JQ6940



Caspase Substrates

Product Description

Product name cat.number	MW ($g \cdot mol^{-1}$)	$\lambda_{exc}/\lambda_{em}$. max. (nm)	Function (for Caspases)	Soluble in
Ac-DEVD-AFC FP-R1147A, 5 mg	729,61	380 / 500	Caspase 3/7	DMSO
Ac-DEVD-AMC FP-46764A, 100 mg	675,64	351 / 430	Caspase 3/7	DMSO
Ac-DEVD-CHO FP-AN1842, 1 mg	502,47	N/A	Caspase 3/7 inhibitor	DMSO
Ac-DEVD-pNA FP-BI0930, 5 mg	638,58	408 / N/A	Caspase 3/7	DMSO
FITC-C6-DEVD-FMK FP-JQ6930, 1 mg	994,99	492 / 516	Caspase 3/7 (cell permeable)	DMSO
FITC-C6-LEHD-FMK FP-JQ6940, 1 mg	1031,07	492 / 516	Caspase 9 (cell permeable)	DMSO
Ac-IETD-AFC FP-HG804A, 5 mg	729,65	380 / 500	Caspase 8	DMSO
Ac-IETD-AMC FP-HH2900, 5 mg	675,68	351 / 430	Caspase 8	DMSO
Ac-IETD-CHO FP-JQ6970, 5 mg	502,52	N/A	Caspase 8 inhibitor	DMSO
Z-IETD-pNA FP-JQ6980, 5 mg	730,72	380 / 500	Caspase 8	DMSO
Z-IETD-AFC FP-R1147A, 5 mg	821,71	380 / 500	Caspase 3/7	DMSO
Z-DEVD-AMC FP-AM355A, 5 mg	767,74	351 / 430	Caspase 3/7	DMSO
Z-DEVD-pNA FP-HG269A, 5 mg	730,68	408 / N/A	Caspase 3/7	DMSO
Z-IETD-AFC FP-HG830A, 5 mg	821,75	380 / 500	Caspase 8	DMSO
Ac-LEDH-AMC FP-F98962, 5 mg	711,72	351 / 430	Caspase 9	DMSO
(Ac-LEDH)2-R110 FP-CJF520, 5 mg	1403,41	498 / 520	Caspase 9	DMSO
(Z-DEVD)2-R110 FP-HG9031, 1 mg	1515,44	498 / 520	Caspase 3/7	DMSO

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FT-JQ6940

Product name cat.number	MW ($g \cdot mol^{-1}$)	$\lambda_{exc}/\lambda_{em}$. max. (nm)	Function (for Caspases)	Soluble in
(Ac-IETD)2-R110 FP-HG9281, 1 mg	1331,34	498 / 520	Caspase 8	DMSO
Z-DEVD-ProRed 620 FP-GCZ830, 1 mg	1565,50	534 / 619	Caspase 3/7	DMSO
Z-IETD-ProRed 620 FP-GCZ840, 1 mg	1565,59	534 / 619	Caspase 8	DMSO
Z-LEHD-ProRed 620 FP-GCZ850, 1 mg	1453,47	534 / 619	Caspase 9	DMSO

Storage: -20°C Protect from light and moisture

Introduction

Caspases are essential in cells for apoptosis, or programmed cell death, in development and most other stages of adult life, and have been termed "executioner" proteins for their roles in the cell. Some caspases are also required in the immune system for the maturation of lymphocytes. Failure of apoptosis is one of the main contributions to tumour development and autoimmune diseases.
Caspases are also involved in ischemia and Alzheimer's disease. There are two types of apoptotic caspases: initiator and effector caspases. Initiator caspases (e.g., CASP2, CASP8, CASP9, and CASP10) cleave inactive pro-forms of effector caspases, thereby activating them. Effector caspases (e.g., CASP3, CASP6, CASP7) in turn cleave other protein substrates within the cell, to trigger the apoptotic process. The initiation of this cascade reaction is regulated by caspase inhibitors.

FluoProbes offers both color and a group of blue, green, and red fluorescent substrates for monitoring caspase activities. The AMC-, AFC-, R110- and ProRed™-derived protease substrates are colorless and non-fluorescent. Cleavage of blocking protease-cleavable peptide residue by caspases generates the strongly blue, green, or red fluorescent respectively that can be monitored by fluorescence instruments. Our proprietary ProRed™-derived caspase substrates are the most sensitive red indicators for the fluorimetric detection of various caspase activities. In general, R110 and ProRed™ substrates are much more sensitive than the AMC-, AFC- or 4-nitroaniline-based substrates.

Directions for use

Guidelines for use

Following protocol only provides a guideline, and should be modified according to your specific needs.

1. General Solution Caspase Assays Using AMC, AFC, pNA, R110 and ProRed Substrates

1.1. Prepare a 10 mM stock solution in DMSO.

1.2. Prepare a 2X caspase substrate (50 µM) assay solution as the following:

- 50 µL substrate stock solution
- 100 µL DTT (1M)
- 400 µL EDTA (100 mM)
- 10 mL Tris Buffer (20 mM), pH =7.4

1.3. Mix equal volume of the caspase standards or samples with 2X caspase substrate assay solution (from Step 1.2), and incubate the solutions at room temperature for at least 1 hour.

1.4. Monitor the fluorescence using a fluorescence microplate reader, or absorbance using an absorbance microplate reader.

2. Cell Caspase Assays Using Cell-Permeable FMK Caspase Probes

2.1. Prepare a 2-5 mM stock solution in DMSO.

2.2. Treat cells as desired.

2.3. Prepare a 2X permeable caspase substrate (20 µM) assay solution by diluting the DMSO stock solution (from Step 2.1) in Hanks with 20 mM Hepes buffer (HHBS).

2.4. Mix equal volume of the treated cells with 2X caspase substrate assay solution (from Step 2.3), and incubate the cells in a 37°C, 5% CO2 incubator for at least1 hour.

2.5. Wash the cells with HHBS for at least once.

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2.6. Monitor the fluorescence intensity by a flow cytometer, a fluorescence microscope or a fluorescence microplate reader.

3. Cell Caspase Assays Using Cell-Permeable FMK Caspase Probes (For #13470-13476 only)
3.1. Prepare a 150X stock solution by adding 50 ⌣L DMSO into the vial.
3.2. Treat cells as desired.
3.3. Add 150 X DMSO stock solution (from Step 3.1) into the cell solution at a 1:150 ratio, and incubate the cells in a 37°C, 5% CO2 incubator for 1 hour.
3.4. Wash the cells with HHBS for at least once.
3.5. Monitor the fluorescence intensity by flow cytometer, fluorescence microscopy or fluorescent microplate reader.

References

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