

Technical Data Sheet

Z-VAD-FMK, General Caspase Inhibitor

Product Information

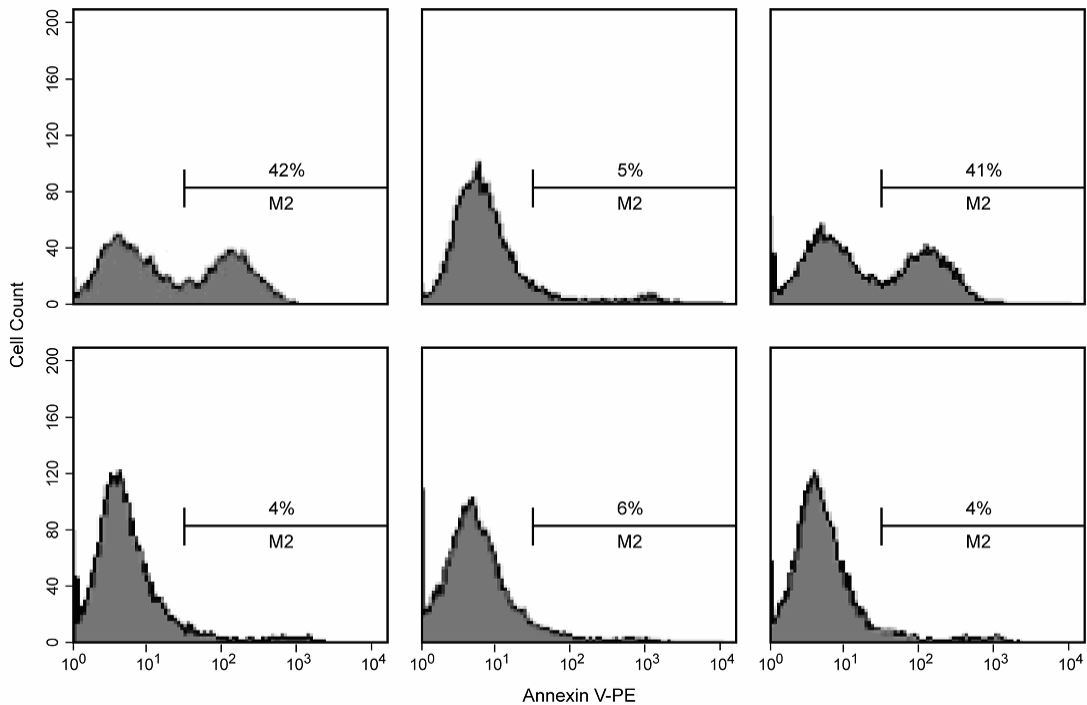
Material Number: 550377

Size: 1.0 mg

Storage Buffer: Lyophilized in dimethyl sulfoxide (DMSO).

Description

Members of the caspase family play key roles in inflammation and mammalian apoptosis. Z-VAD-FMK is a cell permeable general caspase inhibitor that irreversibly binds to the catalytic site of caspase proteases and inhibits apoptosis. The peptide is O-methylated in the P1 position on aspartic acid providing enhanced stability and increased cell permeability. Z-VAD-FMK has a molecular weight of 467 Daltons.



Flow cytometric analysis of apoptosis in Jurkat cells (Human T-cell leukemia; ATCC TIB-152). Jurkat cells were preincubated with the following: no inhibitor (upper left and bottom left panels), 20 μ M Z-VAD-FMK (upper center and bottom center panels) or 20 μ M negative control inhibitor (Z-FA-FMK, upper right and bottom right panels) (Cat. No. 550411) for 30 min, and then either left untreated (bottom row) or treated with 4 μ M of camptothecin for 3 hr (top row). Following incubation, cells were collected and stained with PE Annexin V (Cat. No. 559763) to identify cells undergoing apoptosis. The results indicate that in camptothecin treated cells, approximately 42% of the cells were induced to undergo apoptosis and the use of the general caspase inhibitor Z-VAD-FMK reduced the level of apoptosis to that observed in the untreated control. Cells treated with Z-FA-FMK (Cat. No. 550411) showed similar results to the camptothecin treated cells without inhibitor, indicating that the negative control inhibitor did not attenuate apoptosis.

Preparation and Storage

Avoid multiple freeze-thaws of product.

Store the lyophilized Z-VAD-FMK inhibitor at -20°C. Reconstitute the Z-VAD-FMK inhibitor in DMSO before use. The reconstituted Z-VAD-FMK inhibitor may be stored in small aliquots at -20°C.

Application Notes

Application

Flow cytometry	Routinely Tested
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Recommended Assay Procedure:

The Z-VAD-FMK inhibitor is designed to be used in both *in vivo* and *in vitro* cell based assays to measure the inhibition of apoptosis. Reconstitute 1.0 mg of the Z-VAD-FMK inhibitor in DMSO. A 10 mM stock solution may be made by dissolving 1.0 mg of Z-VAD-FMK in 214 µl DMSO. The final concentration of inhibitor may vary between experimental systems and investigators are encouraged to titrate the inhibitor for optimal performance. As a precautionary note, do not exceed a final DMSO concentration of 0.2% as higher levels may cause cellular toxicity and mask the effects of the caspase inhibitor.

Suggested Companion Products

Catalog Number	Name	Size	Clone
559763	PE Annexin V Apoptosis Detection Kit I	100 tests	(none)
550411	Z-FA-FMK, Negative Control for Caspase Inhibitors	1.0 mg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharming/en/protocols for technical protocols.

References

Gregoli PA, Bondurant MC. Function of caspases in regulating apoptosis caused by erythropoietin deprivation in erythroid progenitors. *J Cell Physiol.* 1999; 178(2):133-143.(Biology)
Schantz N, Blanchard DA, Auffredou MT, Sharma S, Leca G, Vazquez A. Role of caspases and possible involvement of retinoblastoma protein during TGFbeta-mediated apoptosis of human B lymphocytes. *Oncogene.* 1999; 18(23):3511-3519.(Biology)
Thornberry NA, Lazebnik Y. Caspases: enemies within. *Science.* 1998; 281(5381):1312-1316.(Biology)