

Product Data Sheet

Chemical Properties

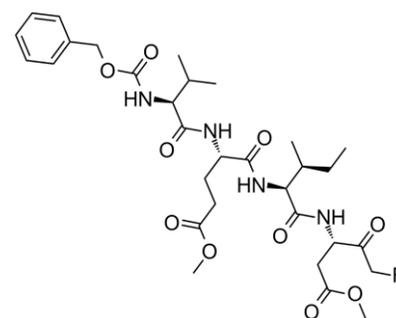
Product Name: Z-VEID-FMK

Cas No.: N/A

M.Wt: 652.71

Formula: C₃₁H₄₅FN₄O₁₀

Synonyms: Caspase-6 inhibitor
(fluoromethylketone), Benzyloxycarbonyl-Val-Glu(OMe)-Ile-Asp(OMe)-fluoromethylketone



Chemical Name: methyl
(4S)-5-[[[(2S)-1-[[[(3S)-5-fluoro-1-methoxy-1,4-dioxopentan-3-yl]amino]-3-methyl-1-oxopentan-2-yl]amino]-4-[[[(2S)-3-methyl-2-(phenylmethoxycarbonylamino)butanoyl]amino]-5-oxopentanoate

Canonical SMILES: CCC(C)C(C(=O)NC(CC(=O)OC)C(=O)CF)NC(=O)C(CCC(=O)OC)NC(=O)C(C(C)C)NC(=O)OCC1=CC=CC=C1

Solubility: ≥113.4mg/ml in DMSO

Storage: Store at -20°C

General tips: For obtaining a higher solubility, please warm the tube at 37° C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20° C for several months.

Shopping Condition: Evaluation sample solution : ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets : Caspase

Pathways: Apoptosis >> Caspase

Description:

When compared to other caspase inhibitors, Z-DRHD-FMK inhibited caspase 6 activity more

effectively than the general caspase inhibitor Z-Val-Ala-Asp (OMe)-fluoromethyl ketone (Z-VAD-FMK) or the caspase 6 inhibitor Z-Val-Glu(Ome)-Ile-Asp(OMe)-fluoromethyl ketone (Z-VEID-FMK). However, it was less effective in inhibiting TNF α -induced apoptosis than Z-VAD-FMK or Z-VEID-FMK, presumably because caspase 6 is only one of at least three effector caspases, the others being caspase 3 and 7, that are active during caspase dependent apoptosis. Loss of DNA-binding activity and TNF α -induced apoptosis can be prevented by caspase-6-preferred inhibitor (Z-VEID-FMK)¹.

The caspase-6-specific inhibitor Z-VEID-FMK and general caspase inhibitors significantly prevent apoptosis of caspase-6-microinjected neurons².

Z-VEID-FMK, which inhibits caspase-6, was also able to abolish the cleavage of procaspase-8, although caspase-6 is activated downstream of caspase-8 in Fas-mediated apoptosis³.

Reference:

1. Nyormoi et al (2003) *Sequence-based discovery of a synthetic peptide inhibitor of caspase 6. Apoptosis* 8 371.
2. Y. Zhang C. Goodyer, *Selective and Protracted Apoptosis in Human Primary Neurons Microinjected with Active Caspase-3, -6, -7, and -8. The Journal of Neuroscience*, 2000, 20(22):8384–8389
3. *Microinjected with Active Caspase-3, -6, -7, and -8 Taimen and Kallajoki (2003) NuMA and nuclear lamins behave differently in Fas-mediated apoptosis. J.Cell Sci.*116 571.

Protocol

Cell experiment:

Cell lines	Luteal cells
Preparation method	Soluble in DMSO. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions	50 μ M; 6 h
Applications	Incubation of luteal cells in the presence of inhibitors of caspase-3 (Z-DEVD-FMK), caspase-6 (Z-VEID-FMK), caspase-8 (Z-IETD-FMK) and a general caspase inhibitor (Boc-DFMK) resulted in a reduction in the level of TNF α -induced DNA fragmentation.

Reference:

- [1]. Abdo M1, Hisheh S, Dharmarajan A. *Role of tumor necrosis factor-alpha and the modulating effect of the caspases in rat corpus luteum apoptosis. Biol Reprod.* 2003 Apr;68(4):1241-8.

Product Citations

1. Chen Y, Sun M, et al, "a novel PAC-1 derivative, activates procaspase-3 and causes cancer cell apoptosis." *Cancer Chemother Pharmacol.* 2016 Aug 3. PMID:27488460

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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