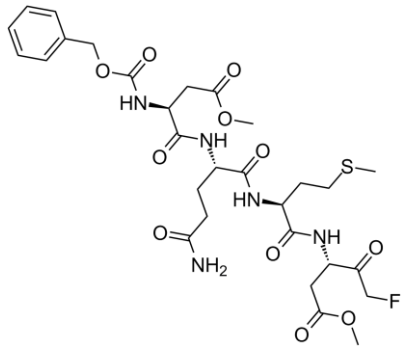
Product Name: Z-DQMD-FMK

Revision Date: 6/30/2016

Product Data Sheet

Chemical Properties



Product Name: Z-DQMD-FMK

Cas No.:

M.Wt: 685.72

Formula: C29H40FN5O11S

Synonyms: Z-DQMD-FMK,Benzyloxycarbonyl-Asp(OMe)-Gln-Met-Asp(OMe)-fluoromethylketone

Chemical Name: methyl (3S)-3-[[(2S)-2-[[(2S)-5-amino-2-[[(2S)-4-methoxy-4-oxo-2-(phenylmethoxycarbonylamino)butanoyl]amino]-5-oxopentanoyl]amino]-4-methylsulfanylbutanoyl]amino]-5-fluoro-4-oxopentanoate

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

Solubility: Soluble in DMSO > 10 mM

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:

Inhibition of caspase-3 processing by Z-DQMD-FMK

(Z-Asp(OMe)-Gln-Met-Asp(OMe)-fluoromethylketone) did not restore cell number in the zinc-deficient group, but resulted in processing of full-length PKC-δ to a 56-kDa fragment1.
The inhibitory effect of specific caspase inhibitors (Z-DQMD-FMK, Z-IETD-FMK and Z-LEHD-FMK) suggests that the MG132-induced apoptotic cell death and depletion of GSH in SCLC cells are mediated by both activation of caspase-8 and mitochondrial damage, leading to the activation of caspase-9 and -32.
To investigate whether εPKC cleavage after stroke is caused by caspase-3 activation, we examined the effect of a cell-permeable caspase-3–specific inhibitor, Z-DQMD-FMK, on generation of cleaved εPKC fragments. Caspase-3 inhibition did not suppress the decrease in fulllength εPKC and the 43-kDa fragment in the ischemic core and penumbra after stroke3.

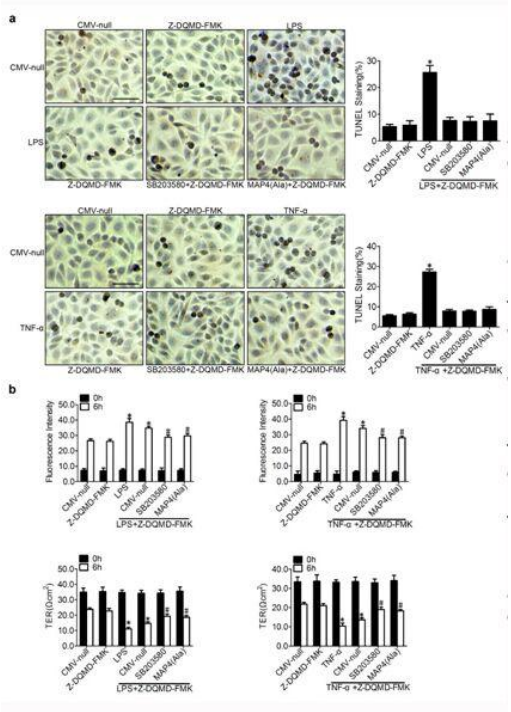
***Reference**:*

1. Susan S. CHOU, Michael S. CLEGG, Alterations in protein kinase C activity and processing during zinc-deficiency-induced cell death, Biochem. J. (2004) 383, 63–71*
2. J. H. Banga, E. S. Han. Differential response of MG132 cytotoxicity against small cell lung cancer cells to changes in cellular GSH contents. Biochemical Pharmacology 68 (2004) 659–666.
3. T. Shimohata, H. Zhao, εPKC May Contribute to the Protective Effect of Hypothermia in a Rat Focal Cerebral Ischemia Model. Stroke. 2007;38:375-380

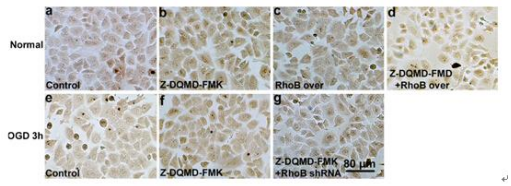
Product Citations

1.Li, Lingfei, et al. "P38/MAPK contributes to endothelial barrier dysfunction via MAP4 phosphorylation-dependent microtubule disassembly in inflammation-induced acute lung injury." Scientific reports 5 (2015). PMID:25746230
2.Han J, Yang BP, et al. "RhoB/ROCK mediates oxygen-glucose deprivation-stimulated syncytiotrophoblast microparticle shedding in preeclampsia." Cell Tissue Res. 2016 PMID:27324125

Product Validation



LPS- or TNF-α-induced permeability develops independently of apoptosis.
(a) Representative images showing cell apoptosis is using TUNEL (terminal deoxynucleotidyl transferaese dUTP nick-end labeling) staining.The Z- DQMD-FMK, an inhibitor of caspase-3 (10 μM),SB203580 (5 μM),and MAP4 (Ala) overexpression were applied as indicated before LPS or TNF-α (500 ng/ml) treatment.Z-DQMD-FMK block the LPS- or TNF-a-induced cadpase-dependent apoptosis.
(b) The Z- DQMD-FMK,an inhibitor of caspase-3 (10 μM),SB203580 (5 μM),and MAP4 (Ala) overexpression were applied as indicated before LPS or TNF-α (500 ng/ml) treatment.The permeability of endothelial cells was assessed by measuring the influx of FITC-conjugated dextran and the TER across the cells.Pretreatment with Z- DQMD-FMK,MAP4 (Ala)overexpression,and SB203580 pretreatment showed a more protective effect against endothelial barrier permeability compared with that of the CMV-null under the LPS or TNF-a challenge.



OGD-induced STBM shedding is independent of apoptosis. a–g Representative images showing cell apoptosis using TUNEL staining. Z- DQMD-FMK, an inhibitor of caspase-3 (10 μM) and RhoB overexpression were applied as indicated prior to OGD (1 % O2) treatment. Bar 80 μm. Cell Tissue Res. 2016 Jun 21.

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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