



PRODUCT DATA SHEET

Product: Z-VEID-FMK (Caspase-6 Inhibitor)

Cat. No.: AB-007 (3 mg)

Chemical Name:

Z-Val-Glu(OMe)-Ile-Asp(OMe)-CH₂F

Molecular Weight: 652

Description:

Peptide-fluoromethyl ketone inhibitor of Caspase-6.

The CH₂F or FMK (fluoromethyl ketone) inhibitor has several advantages over other types of derivatives: Penetrates cell membranes, Not toxic to cells, Irreversible inhibition.

Introduction:

Caspase-6 (also known as Mch2) is a member of the caspase family of cysteine proteases involved in apoptosis. It is a member of the Group III caspases (6, 8, and 9) which prefer the (L/V)EXD sequence as a substrate. Caspase-6 prefers a hydrophobic amino acid at P4, along with caspases-1 and -4, as opposed to the preference for Asp seen with caspases-2, -3, and -7. This is at odds with the gene sequence alignment that predicts Caspase-6 is more closely related to caspases-3 and -7 than to caspase-1. The preference by Caspase-6 for β -branched amino acids in P4 fits well with the one known natural substrate, lamin A, and distinguishes it from caspases-1 and -4. Reconstitution experiments indicate that Caspase-6 activates caspases-3 and -7 and is therefore part of the proteolytic cascade that initiates apoptosis.

Specificity:

Very strong Inhibition of Caspase-6. Weak inhibition of Caspase-1 and Caspase-3, very weak inhibition of Caspase-7 and Caspase-8.

Solubility:

Soluble in DMSO

Protocol:

Dissolve Caspase-6 Inhibitor in high purity (>99.9%) DMSO before use.

For use on intact cells:

1. Prepare desired concentrated stock solutions as follows:

1 mg Z-VEID-FMK in 77 μ L DMSO = 20 mM
in 153 μ L DMSO = 10 mM
in 307 μ L DMSO = 5 mM, etc.

2. Add 2 μ L of above stock solution to 1 mL culture medium containing cells such that the final DMSO concentration is 0.2%. Levels of DMSO above this may cause some cellular toxicity, thus masking the effect of the protease inhibitor. Adding 2 μ L of a 10 mM stock solution to 1 mL of culture medium gives a final Z-VEID-FMK concentration of 20 μ M.

IMPORTANT NOTE for *in vitro* use: Our peptide inhibitors are synthesized as methyl esters to enhance cell permeability. In intact cells, the methyl groups are removed by endogenous enzymes. For *in vitro* experiments with purified enzymes, however, the methyl groups must first be removed by treating the inhibitor with esterase. A procedure is available upon request.

Storage and Stability:

Solid product stable for 1 year when stored in a desiccator at room temperature (RT). Although storage at RT does not affect this compound, for long term storage we recommend 4°C. DMSO stock solution is stable at -20°C for 6-8 months. Keep sealed after removing from the freezer until its temperature equilibrates with room temperature.

Limitations:

For research use only. Not for use in diagnostics or in humans.

Warranty:

No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.