

Certificate of Analysis

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Product Name: Z-VAD-FMK
CAS Number: 634911-81-2
IUPAC Name: Benzyloxycarbonyl-Val-Ala-Asp(OMe)-fluoromethylketone

Catalog No.: 2163 **Batch No.:** 29

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₂H₃₀FN₃O₇
Batch Molecular Weight: 467.49
Physical Appearance: White lyophilised solid
Counter Ion: Trifluoroacetate
Solubility: Soluble to 9.35 mg/ml in DMSO
Storage: Store at -20°C
Peptide Sequence: Z-Val-Ala-DL-Asp(OMe)-FMK

2. ANALYTICAL DATA

HPLC: Shows 96.1% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical		Actual		Amino Acid Theoretical		Actual	
Ala	1.00	1.01		Lys			
Arg				Met			
Asx				Phe			
Cys				Pro			
Glx				Ser			
Gly				Thr			
His				Trp			
Ile				Tyr			
Leu				Val	1.00	0.99	

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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IUPAC Name: Benzyloxycarbonyl-Val-Ala-Asp(OMe)-fluoromethylketone

Description:

Z-VAD-FMK is a cell-permeable, irreversible pan-caspase inhibitor. Inhibits caspase processing and apoptosis induction in tumor cells in vitro (IC_{50} = 0.0015 - 5.8 mM). Active in vivo.

Physical and Chemical Properties:

Batch Molecular Formula: $C_{22}H_{30}FN_3O_7$

Batch Molecular Weight: 467.49

Physical Appearance: White lyophilised solid

Peptide Sequence:

Z-Val-Ala-DL-Asp(OMe)-FMK

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 9.35 mg/ml in DMSO

This product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: Trifluoroacetate

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

References:

Garcia-Calvo *et al* (1998) Inhibition of human caspases by peptide-based and macromolecular inhibitors. *J.Biol.Chem.* **273** 32608. PMID: 9829999.

King *et al* (1998) Processing/activation of caspases, -3 and -7 and -8 but not caspase-2, in the induction of apoptosis in B-chronic lymphocytic leukemia cells. *Leukemia* **12** 1553. PMID: 9766499.

Kunstle *et al* (1997) ICE-protease inhibitors block murine liver injury and apoptosis caused by CD95 or by TNF-α. *Immunol.Lett.* **55** 5. PMID: 9093874.

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