

## Product Information

### Z-Val-Ala-Asp fluoromethyl ketone

Catalog Number **C2105**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Synonym: Z-VAD-FMK

#### Product Description

Molecular Formula:  $\text{C}_{21}\text{H}_{28}\text{N}_3\text{O}_7\text{F}$

Formula Weight: 453.46

Non-methylated, competitive, and irreversible inhibitor of caspase 1, as well as other caspases,<sup>1</sup> which can be used directly with purified enzymes. It does not require an esterase to hydrolyze the O-methyl ester like the cell-permeable form, Z-Val-Ala-Asp(O-Me) fluoromethyl ketone (Catalog Number V116).

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

The product is soluble in DMSO (high purity, >99.9 %) at 20 mM.

Dissolve 1 mg of Z-Val-Ala-Asp FMK in 206  $\mu\text{l}$  of DMSO to yield a 10 mM stock solution.

#### Storage/Stability

Store tightly sealed and desiccated at  $-20\text{ }^{\circ}\text{C}$ . Allow powder to reach room temperature before opening vial. May be stored desiccated in solid form at room temperature for one year. Store DMSO solutions at  $-20\text{ }^{\circ}\text{C}$  for up to 6 months.

#### Procedure

Dilute from stock solution into enzyme/buffer solution after enzyme pre-incubation/activation. Optimal inhibitor concentration is enzyme dependent. An effective final concentration is estimated to be 5–100  $\mu\text{M}$ . A 40  $\mu\text{M}$  final concentration is made by adding 4  $\mu\text{l}$  of 10 mM stock solution to 1 ml of enzyme/buffer solution. The researcher must determine the optimal incubation time. Ten to twenty minutes of inhibitor incubation is suggested.

#### References

1. Garcia-Calvo, M., et al., Inhibition of human caspases by peptide-based and macromolecular inhibitors, *J. Biol. Chem.*, **273**, 32608-32613 (1998).
2. Slee, E.A., et al., Benzyloxycarbonyl-Val-Ala-Asp (Ome) fluoromethylketone (Z-VAD-FMK) inhibits apoptosis by blocking the processing of CPP32. *Biochem. J.*, **315**, 21-24 (1996).
3. Mesner, P.W., et al., Characterization of Caspase Processing and Activation in HL-60 Cell Cytosol Under Cell-free Conditions. Nucleotide Requirement and Inhibitor Profile. *J. Biol. Chem.*, **274**, 22635-22645 (1999).

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