Product Data Sheet

Product Name: Ac-DEVD-CMK
Cat. No.: GC10951

Chemical Properties

Cas. No.	285570-60-7		
Chemical Name	N-acetyl-L-α-aspartyl-L-α-glutamyl-N-[(1S)-1-(carboxymethyl)-3-chloro-2-oxopropyl]-L-valinamide		
SMILES	CC(N[C@@H](CC(O)=O)C(N[C@@H](CCC(O)=O)C(N[C@@H](C(C)C)C(N[C@@H](CC(O)=O)C(CCl)=O)=O)=O)=O)=O		
Formula	$C_{21}H_{31}ClN_4O_{11}$	M.Wt	551.0
Solubility	≤50mg/ml in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Ac-DEVD-CMK		

Background

Ac-DEVD-CMK is a cell-permeable and irreversible caspase-3 inhibitor [1][2][3].

Apoptosis is a process of programmed cell death that occurs in multicellular organisms. Caspase are a family of protease enzymes playing essential roles in programmed cell death (including apoptosis, pyroptosis and necroptosis) and inflammation. Caspase activation is a major event in apoptosis. Caspase-3 cleaves and activates caspases 6 and 7, and is processed and activated by caspases 8, 9, and 10 [1][2][3].

Ac-DEVD-CMK (Ac-Asp-Glu-Val-Asp-CH2Cl) is a cell-permeable, irreversible and specific caspase-3 inhibitor. In coronary occlusion/reperfusion rat isolated hearts, Ac-DEVD-CMK reduced infarct size (the percentage of infarction 27.8+3.3% vs control 38.5+2.6%), suggesting that caspase inhibition during early reperfusion protected myocardium against lethal reperfusion injury [1]. In BL41 cells, Ac-DEVD-CMK partially inhibited Mn2+-induced apoptosis and PARP cleavage, and partially blocked B cell death by 37%

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even at 100 μM [2]. Ac-DEVD-CMK significantly blocked neurotoxicity at 24 hr after 1 hr of SIN-1 exposure and also protected against neurotoxicity at 24 hr after 90 min of zinc (75 μM) exposure. Ac-DEVD-CMK completely blocked SIN-1-induced activation of caspase-3 [3].

References:

[1]. Mocanu MM, Baxter GF, Yellon DM. Caspase inhibition and limitation of myocardial infarct size: protection against lethal reperfusion injury. Br J Pharmacol. 2000 May;130(2):197-200.
[2]. Schrantz N, Blanchard DA, Mitenne F, et al. Manganese induces apoptosis of human B cells: caspase-dependent cell death blocked by bcl-2. Cell Death Differ. 1999 May;6(5):445-53.
[3]. Zhang Y, Wang H, Li J, et al. Peroxynitrite-induced neuronal apoptosis is mediated by intracellular zinc release and 12-lipoxygenase activation. J Neurosci. 2004 Nov 24;24(47):10616-27.