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- Trockeneiszuschlag
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- Expressversand

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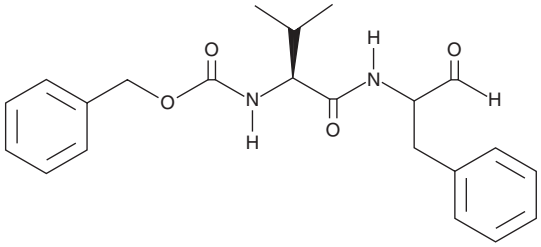
PRODUCT INFORMATION

Calpain Inhibitor III

Item No. 14283

CAS Registry No.:	88191-84-8
Formal Name:	N-[(1S)-1-[[(1-formyl-2-phenylethyl) amino]carbonyl]-2-methylpropyl]-carbamic acid, phenylmethyl ester
Synonym:	MDL 28170
MF:	$C_{22}H_{26}N_2O_4$
FW:	382.5
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Calpain inhibitor III is supplied as a crystalline solid. A stock solution may be made by dissolving the calpain inhibitor III in the solvent of choice, which should be purged with an inert gas. Calpain inhibitor III is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of calpain inhibitor III in these solvents is approximately 3.3, 12.5, and 14 mg/ml, respectively.

Calpain inhibitor III is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, calpain inhibitor III should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Calpain inhibitor III has a solubility of approximately 0.09 mg/ml in a 1:10 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

The calpains are a family of calcium-dependent cysteine proteases that catalyze limited proteolysis of substrates.[1] Calpain inhibitor III is a cell permeable, selective inhibitor of µ-calpain (calpain-1) and m-calpain (calpain-2).[2] Calpain inhibitor III crosses the blood-brain barrier to inhibit brain cysteine protease activity and has been reported to have neuroprotective effects in numerous rodent neurotrauma models, including spinal cord injury, cortical impact trauma, neonatal hypoxia-ischemia, and focal cerebral ischemia.[3] Additionally, calpain inhibitor III has been shown to attenuate depression in myocardial contractile performance that occurs during reperfusion following cardiac ischemia.[4]

References

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2. Mehdi, S. Cell-penetrating inhibitors of calpain. *Trends Biochem. Sci.* **16(4)**, 150-153 (1991).
3. Thompson, S.N., Carrico, K.M., Mustafa, A.G., *et al.* A pharmacological analysis of the neuroprotective efficacy of the brain- and cell-permeable calpain inhibitor MDL-28170 in the mouse controlled cortical impact traumatic brain injury model. *J. Neurotrauma* **27(12)**, 2233-2243 (2010).
4. Urthaler, F., Wolkowicz, P.E., Digerness, S.B., *et al.* MDL-28170, a membrane-permeant calpain inhibitor, attenuates stunning and PKC proteolysis in reperfused ferret hearts. *Cardiovasc. Res.* **35(1)**, 60-67 (1997).

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