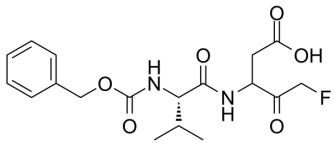
MX1013

Cat. No.:	HY-10397A
CAS No.:	582316-00-5
Molecular Formula:	$C_{18}H_{23}FN_2O_6$
Molecular Weight:	382
Target:	Caspase
Pathway:	Apoptosis
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (261.78 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6178 mL	13.0890 mL	26.1780 mL
	5 mM	0.5236 mL	2.6178 mL	5.2356 mL
	10 mM	0.2618 mL	1.3089 mL	2.6178 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

MX1013 is a potent, irreversible dipeptide caspase inhibitor with antiapoptotic activity. MX1013 inhibits recombinant human caspase 3 with an IC_{50} of 30 nM[1].

IC_{50} & Target

Caspase

In Vitro

MX1013 inhibits caspases 1, 3, 6, 7, 8, and 9, with IC_{50} values ranging from 5 to 20 nm. MX1013 is selective for caspases, and is a poor inhibitor of noncaspase proteases, such as cathepsin B, calpain I, or Factor Xa (IC_{50} values >10 μm)[1].

MX1013 inhibits three key markers of apoptosis: the proteolytic maturation of caspase 3, the caspase-mediated cleavage of PARP, and the fragmentation of genomic DNA[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	Jurkat T-lymphocytes
Concentration:	0, 0.05, 0.1, 0.25, 0.5 μM

Incubation Time:	Preincubated for 2 h
Result:	Neither caspase 3 processing nor PARP cleavage could be detected at 0.5 μM. At concentrations of 0.05 μM, caspase 3 processing and PARP cleavage were still markedly reduced.

In Vivo

MX1013 is an effective antiapoptotic agent in vivo. MX1013 not only inhibits local tissue apoptosis, but also can protect animals against its lethal effects[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female ND4 Swiss Webster mice (16.5-21 g)[1]
Dosage:	0, 0.25, 1, 10 mg/kg (formulated in an aqueous vehicle containing 50 mm Tris-HCl, pH 8.0)
Administration:	Injected i.v.
Result:	The lowest dose of 0.25 mg/kg protected 66% of the mice from the lethal effects of anti-Fas antibody at the 3 h time point, and 1 and 10 mg/kg dose protected 100% of the mice at the 3 h time point.

CUSTOMER VALIDATION

- J Infect Dis. 2024 Jan 19:jiae020.

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REFERENCES

[1]. Wu Yang, et al. MX1013, a dipeptide caspase inhibitor with potent in vivo antiapoptotic activity. Br J Pharmacol. 2003 Sep;140(2):402-12.

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