Apostatin-1

Cat. No.: HY-134050

CAS No.: 2559703-06-7

Molecular Formula: $C_{19}H_{27}N_3OS$

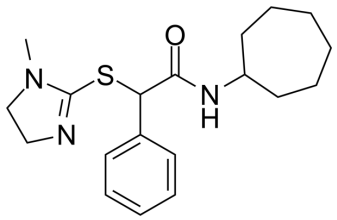
Molecular Weight: 345.5

Target: RIP kinase; Apoptosis; Autophagy; Beclin1; Necroptosis

Pathway: Apoptosis; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 83.33 mg/mL (241.19 mM; ultrasonic and warming and adjust pH to 4 with HCl and heat to 80°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8944 mL	14.4718 mL	28.9436 mL
	5 mM	0.5789 mL	2.8944 mL	5.7887 mL
	10 mM	0.2894 mL	1.4472 mL	2.8944 mL

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

BIOLOGICAL ACTIVITY

Description

Apostatin-1 (Apt-1) is a potent TRADD inhibitor. Apostatin-1 can bind with TRADD-N (K_D=2.17 μM), disrupting its binding to both TRADD-C and TRAF2. Apostatin-1 modulates the ubiquitination of RIPK1 and beclin 1. Apostatin-1 blocks apoptosis and restores cellular homeostasis by activating autophagy in cells with accumulated mutant tau, α-synuclein, or huntingtin[1].

IC_{50} & Target

RIPK1

In Vitro

Apostatin-1 inhibits Velcade (Bortezomib, HY-134050)-induced apoptosis and RIPK1-dependent apoptosis (RDA) and necroptosis, with an IC_{50} of 0.97 μM[1].

?Apostatin-1 (10 μM, 6 h) effectively induces autophagy and the degradation of long-lived proteins[1].

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

Western Blot Analysis[1]

Cell Line:	SH-SY5Y, HeLa, HT-29, and Jurkat cells
Concentration:	10 μM

Incubation Time:	6 h
Result:	Effectively induced autophagy by LC3 II induction and p62 reduction.

In Vivo

Apostatin-1 (20 mg/kg, IP, once) inhibits inflammatory responses, and increases survival of systemic inflammation mouse model[1].

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

Animal Model:	Wild-type mice (n = 10, male, 8 weeks of age, systemic inflammation mouse model)[1]
Dosage:	20 mg/kg
Administration:	IP, once
Result:	Reduced expression of the TNF-induced inflammatory target gene products, NOS and COXII27, and of inflammatory cytokines in cells stimulated with pathogen-associated molecular patterns, including interferon γ (IFNγ), lipopolysaccharide (LPS), Pam3CSK4 (a synthetic bacterial lipopeptide), and muramyl dipeptide (MDP). Showed increased survival following intravenous delivery of TNF, a mouse model of systemic inflammation.

REFERENCES

[1]. Xu D, et al. Modulating TRADD to restore cellular homeostasis and inhibit apoptosis. Nature. 2020 Nov;587(7832):133-138.

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