ICCB-19 hydrochloride

Cat. No.: HY-138779

CAS No.: 1803605-68-6

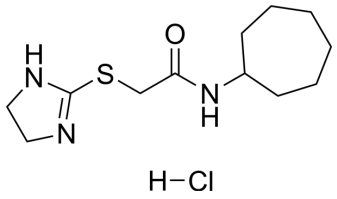
Molecular Formula: $C_{12}H_{22}ClN_3OS$

Molecular Weight: 291.84

Target: RIP kinase; Autophagy; Apoptosis

Pathway: Apoptosis; Autophagy

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : ≥ 100 mg/mL (342.65 mM)
DMSO : 83.33 mg/mL (285.53 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.4265 mL	17.1327 mL	34.2654 mL
5 mM	0.6853 mL	3.4265 mL	6.8531 mL
10 mM	0.3427 mL	1.7133 mL	3.4265 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (7.13 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.13 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

ICCB-19 hydrochloride is a TRADD (TNFRSF1A associated via death domain) inhibitor. ICCB-19 hydrochloride binds with N-terminal domain of TRADD (TRADD-N), disrupting its binding to both TRADD-C and TRAF2. ICCB-19 hydrochloride is indirect inhibitor of RIPK1 kinase activity. ICCB-19 hydrochloride effectively induces autophagy and the degradation of long-lived proteins[1].

IC_{50} & Target

RIPK1

In Vitro	ICCB-19 inhibits Bortezomib-induced apoptosis and RIPK1-dependent apoptosis (RDA) with an IC_{50} of about 1 μM[1]. ?ICCB-19 has no effect on mTOR. ICCB-19 (10 μM) treatment of cells increases the levels of DsRed-FYVE dots and the lipid kinase activity of VPS34[1]. ? ?ICCB-19 (10 μM) promotes autophagy via K63-linked ubiquitination of beclin 1 mediated by E3 ubiquitin ligases cIAP1 and cIAP2 and the adaptor TRAF2[1]. ?ICCB-19 (10 μM) reduces the rapid activation of RIPK1 in complex I induced by TNF. Treatment with ICCB-19 increases recruitment of TRADD, HOIP, and A20, but not RIPK1, to complex I[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	ICCB-19 reduces inflammatory responses in $Tradd^{?/?}$ mice. ICCB-19 reduces expression of the TNF-induced inflammatory target gene products, NOS and COXII27, and of inflammatory cytokines in cells stimulated with pathogen-associated molecular patterns[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

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