CRT0066101 dihydrochloride

Cat. No.: HY-15698A

CAS No.: 1883545-60-5

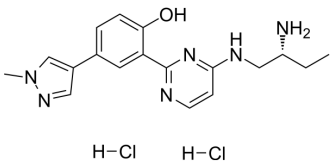
Molecular Formula: $C_{18}H_{24}Cl_2N_6O$

Molecular Weight: 411.33

Target: PKD; Apoptosis; Pim

Pathway: Apoptosis; JAK/STAT Signaling

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



SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (121.56 mM; Need ultrasonic)
DMSO : 11.36 mg/mL (27.62 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4311 mL	12.1557 mL	24.3114 mL
5 mM	0.4862 mL	2.4311 mL	4.8623 mL
10 mM	0.2431 mL	1.2156 mL	2.4311 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 25 mg/mL (60.78 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1.14 mg/mL (2.77 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.14 mg/mL (2.77 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.14 mg/mL (2.77 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CRT0066101 dihydrochloride is a potent and orally active PKD inhibitor with IC_{50} values of 1 nM, 2.5 nM and 2 nM for PKD1, PKD2, and PKD3, respectively[1]. CRT0066101 dihydrochloride is also a potent PIM2 inhibitor with an IC_{50} of ~135.7 nM. CRT0066101 dihydrochloride has anticancer effects[2].

IC_{50} & Target

PKD1	PKD3	PKD2	PIM2
1 nM (IC_{50})	2 nM (IC_{50})	2.5 nM (IC_{50})	135.7 nM (IC_{50})

In Vitro

CRT0066101 (5 μM; 1 h) dihydrochloride blockS both the basal and NT-induced pS916-PKD1/2 (activated PKD1/2) in Panc-1 and Panc-28 cells. CRT0066101 dihydrochloride abrogates NT-induced phosphorylation of Hsp27 (pS82-Hsp27), attenuates PKD1-mediated NF-κB activation, and abrogates expression of NF-κB-dependent-dependent proliferative and pro-survival proteins[1].

CRT0066101 dihydrochloride significantly inhibits Panc-1 cell proliferation, with an IC_{50} value of 1 μM. CRT0066101 dihydrochloride results in a 6-10 fold induction of apoptosis in Panc-1 cells. CRT0066101 dihydrochloride significantly reduces cell proliferation of Colo357, Panc-1, MiaPaCa-2, and AsPC-1 cells but had a modest effect in Capan-2 cells[1].

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

Western Blot Analysis[1]

Cell Line:	Panc-1 and Panc-28 cells stimulation with neurotensin (NT)
Concentration:	5 μM
Incubation Time:	1 h
Result:	Blocked both the basal and NT-induced pS916-PKD1/2 (activated PKD1/2).

In Vivo

CRT0066101 (80 mg/kg/day; oral gavage; once daily; for 21 days) dihydrochloride in Panc-1 orthotopic model potently blocks tumor growth in vivo[1].

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

Animal Model:	CR-UK nu/nu mice injected with Panc-1 cells[1]
Dosage:	80 mg/kg/day
Administration:	Oral gavage; once daily; for 21 days
Result:	Potently blocked tumor growth in vivo.

CUSTOMER VALIDATION

- Exp Mol Med. 2022 Sep 21.
- Int Immunopharmacol. 2023 May 12;120:110240.

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REFERENCES

[1]. Xi Chen, et al. Identification and assessment of new PIM2 inhibitors for treating hematologic cancers: A combined approach of energy-based virtual screening and machine learning evaluation. Arch Pharm (Weinheim). 2024 Jan 23:e2300516.

[2]. Harikumar KB, et al. A novel small-molecule inhibitor of protein kinase D blocks pancreatic cancer growth in vitro and in vivo. Mol Cancer Ther. 2010 May;9(5):1136-46.

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