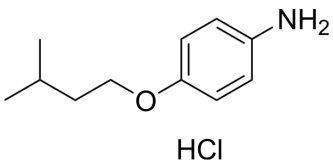
CP-24879 hydrochloride

Cat. No.:	HY-115319
CAS No.:	10141-51-2
Molecular Formula:	$C_{11}H_{18}ClNO$
Molecular Weight:	215.72
Target:	Ferroptosis
Pathway:	Apoptosis
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 : ≥ 100 mg/mL (463.56 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.6356 mL	23.1782 mL	46.3564 mL
5 mM	0.9271 mL	4.6356 mL	9.2713 mL
10 mM	0.4636 mL	2.3178 mL	4.6356 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: ≥ 2.5 mg/mL (11.59 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (9.64 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CP-24879 (hydrochloride) is a potent, selective and combined delta5D/delta6D inhibitor. CP-24879 (hydrochloride) can significantly reduce intracellular lipid accumulation and inflammatory injury in hepatocytes. CP-24879 (hydrochloride) exhibits superior antisteatotic and anti-inflammatory actions in fat-1 and ω-3-treated hepatocytes, and can be used for non-alcoholic steatohepatitis research[1][2].

IC_{50} & Target

IC_{50}: 0.015 μM (delta6D in ABMC-7 cells), 0.56 μM (delta6D in Liver microsomes), 0.67 μM (delta5D in ABMC-7 cells), 3.4 μM (delta5D in ABMC-7 cells)[1]

In Vitro

CP-24879 (hydrochloride) (0-10 μM, 4 days) inhibits Δ6 + Δ5 desaturase activities in a concentration-dependent manner, with

a concentration-dependent depletion of AA and decrease in LTC_4 production[1].
CP-24879 (hydrochloride) (0-10 μM, 16 h) shows the inhibitory responses on oleic acid-induced triglyceride accumulation in hepatocytes[2].
CP-24879 (hydrochloride) (0-10 μM, 16 h) blocks LPS-induced expression of inflammatory cytokines in a concentration-dependent manner[2].
CP-24879 (hydrochloride) (0-2 μM, 4 h) inhibits desaturase activity and ameliorates ferroptosis[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay

Cell Line:	Mouse mastocytoma ABMC-7 cells[1]
Concentration:	0, 100 nM, 300 nM, 1 μM, 3 μM, and 10 μM
Incubation Time:	4 days
Result:	Inhibited Δ6 + Δ5 desaturase activities in a concentration-dependent manner, with a concentration-dependent depletion of AA and decrease in LTC_4 (Leukotriene C_4) production, and did not inhibit either 5-lipoxygenase or LTC_4 synthase activity.

In Vivo

CP-24879 (hydrochloride) (3 mg/kg, IP, three times a day, for 6 or 4 days) inhibits Δ6 + Δ5 desaturase activities in vivo, causing depletion of AA in the livers of chow-fed mice and preventing repletion of AA in the livers of EFAD mice[1].
CP-24879 (hydrochloride) (33 mg/kg, IV, once) is cleared quite rapidly and has a relatively short half-life[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Chow-fed and EFAD Balb/C mice (N = 5/group) [1]
Dosage:	3 mg/kg
Administration:	IP, three times a day, for 6 or 4 days
Result:	Inhibited approximately 80% combined Δ6 + Δ5 desaturase activities, causing depletion of AA in the livers of chow-fed mice and preventing repletion of AA in the livers of EFAD mice, and increased OA and LA, with a higher ratio of LA/AA in the livers of mice injected with CP-24879 versus saline (4.70 vs 2.00, Chow-fed mice; 2.46 vs 1.40, EFAD mice; respectively).

Animal Model:	Swiss-Webster mice (male, 25 g) [1]
Dosage:	33 mg/kg
Administration:	IV in the tail vein, once (Pharmacokinetic Analysis)
Result:	Was readily distributed to the peripheral tissues, with the volume of distribution (V) of 1.9 mL/g, was cleared quite rapidly (CL = 0.56 mL/min) and had a relatively short half-life ($T_{1/2}$ = 59 min).

REFERENCES

[1]. Obukowicz MG, et al. Identification and characterization of a novel delta6/delta5 fatty acid desaturase inhibitor as a potential anti-inflammatory agent. Biochem Pharmacol. 1998 Apr 1;55(7):1045-58.

[2]. [2]López-Vicario C, et al. Molecular interplay between Δ5/Δ6 desaturases and long-chain fatty acids in the pathogenesis of non-alcoholic steatohepatitis. Gut. 2014 Feb;63(2):344-55.

[3]. [3]Lee JY, Nam M, Son HY, et al. Polyunsaturated fatty acid biosynthesis pathway determines ferroptosis sensitivity in gastric cancer. Proc Natl Acad Sci U S A. 2020;117(51):32433-32442.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA