CTPI-2

Cat. No.: HY-123986

CAS No.: 68003-38-3

Molecular Formula: $C_{13}H_9ClN_2O_6S$

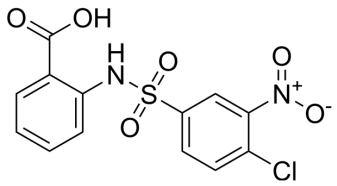
Molecular Weight: 356.74

Target: Mitochondrial Metabolism

Pathway: Metabolic Enzyme/Protease

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (350.40 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.8032 mL	14.0158 mL	28.0316 mL
5 mM	0.5606 mL	2.8032 mL	5.6063 mL
10 mM	0.2803 mL	1.4016 mL	2.8032 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 (5.83 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.83 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.83 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

CTPI-2 is a third-generation mitochondrial citrate carrier SLC25A1 inhibitor with a K_D of 3.5 μM. CTPI-2 inhibits glycolysis, PPARγ, and its downstream target the glucose transporter GLUT4. CTPI-2 halts salient alterations of NASH reverting steatosis, preventing the evolution to steatohepatitis, reducing inflammatory macrophage infiltration in the liver and adipose tissue, and starkly mitigating obesity induced by a high-fat diet. Antitumor activity[1][2].

IC_{50} & Target

KD: 3.5 μM (SLC25A1)[1]

In Vivo

CTPI-2 is a unique regulator of glycolysis that limits the metabolic plasticity of cancer stem cells (CSCs). CTPI-2 (26?mg/kg; i.p.) inhibits tumor growth in in vivo models of non-small cell lung cancer (NSCLC)[1].

?CTPI-2 (50 mg/kg; i.p.; alternate days for 12 weeks) completely averts weight gain in the prevention study and leads to significant weight loss in the reversion study[2].

?CTPI-2 prevents steatohepatitis and normalizes glucose tolerance. CTPI-2 lowers the levels of circulating IL-6 while increasing anti-inflammatory IL-4 and IL-10 and also reduced the monocyte chemoattractant protein-1 and monokine-induced by interferon-γ that attract neutrophils and monocytes. CTPI-2 regulates the citrate pool, the lipogenic and the gluconeogenic pathways[2].

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

Animal Model:	C57BL/6J mice (HFD-fed mice)[2]
Dosage:	50 mg/kg
Administration:	Alternate days via the intraperitoneal route for 12 weeks
Result:	Completely averted weight gain in the prevention study and led to significant weight loss in the reversion study.

CUSTOMER VALIDATION

- EMBO J. 2022 Apr 19;41(8):e109463.
- Cell Death Discov. 2023 Sep 23;9(1):350.
- Chemrxiv. 2023 Nov 1.
- bioRxiv. 2023 Oct 25.
- Universität Duisburg-Essen. Medizinische Fakultät. 2022 Sep.

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REFERENCES

[1]. Tan M, et al. Inhibition of the mitochondrial citrate carrier, Slc25a1, reverts steatosis, glucose intolerance, and inflammation in preclinical models of NAFLD/NASH. Cell Death Differ. 2020;27(7):2143-2157.

[2]. Fernandez HR, et al. The mitochondrial citrate carrier, SLC25A1, drives stemness and therapy resistance in non-small cell lung cancer. Cell Death Differ. 2018;25(7):1239-1258.

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