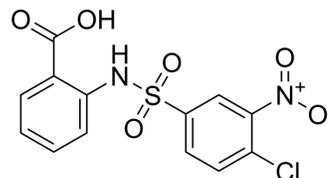


CTPI-2

Cat. No.:	HY-123986		
CAS No.:	68003-38-3		
Molecular Formula:	C ₁₃ H ₉ ClN ₂ O ₆ S		
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)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	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	<ol style="list-style-type: none"> 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 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 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 (267mg/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.

Caution: Product has not been fully validated for medical applications. For research use only.

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