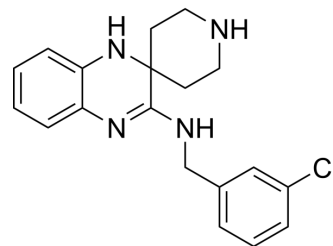


## Liproxstatin-1

<b>Cat. No.:</b>	HY-12726		
<b>CAS No.:</b>	950455-15-9		
<b>Molecular Formula:</b>	C <sub>19</sub> H <sub>21</sub> ClN <sub>4</sub>		
<b>Molecular Weight:</b>	340.85		
<b>Target:</b>	Ferroptosis		
<b>Pathway:</b>	Apoptosis		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 31 mg/mL (90.95 mM)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.9338 mL	14.6692 mL	29.3384 mL
	5 mM	0.5868 mL	2.9338 mL	5.8677 mL
	10 mM	0.2934 mL	1.4669 mL	2.9338 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (7.33 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (7.33 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (7.33 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline  
Solubility: ≥ 2.5 mg/mL (7.33 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 95% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (7.33 mM); Clear solution
- Add each solvent one by one: 50% PEG300 >> 50% saline  
Solubility: 2.17 mg/mL (6.37 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 1% DMSO >> 99% saline  
Solubility: ≥ 0.5 mg/mL (1.47 mM); Clear solution

## BIOLOGICAL ACTIVITY

<b>Description</b>	Liproxstatin-1 is a potent ferroptosis inhibitor and inhibits ferroptotic cell death (IC <sub>50</sub> =22 nM) <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	IC <sub>50</sub> : 22 nM (ferroptosis) <sup>[2]</sup>
<b>In Vitro</b>	Liproxstatin-1 shows anti-ferroptotic activity with an IC <sub>50</sub> of approximately 38 nM in mouse embryonic fibroblasts <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	Liproxstatin-1 (10 mg/kg, i.p.) suppresses ferroptosis in human cells, Gpx4 <sup>-/-</sup> kidney and in an ischaemia/reperfusion-induced tissue injury model <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

<b>Cell Assay</b> <sup>[1]</sup>	To induce the knockout of Gpx4, cells are seeded onto 96-well plates (1,000 cells per well) and treated with 1 μM 4-OH-ICI 47699 (TAM) after plating. Cell viability is assessed at different time points after treatment (usually 72 h) using AquaBluer, unless stated otherwise, as an indicator of viable cells. Alternatively, cell death is also quantified by measuring released lactate dehydrogenase (LDH) activity using the Cytotoxicity Detection Kit. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>Animal Administration</b> <sup>[1]</sup>	Animals included in the treatment study of inducible Gpx4 <sup>-/-</sup> mice are equally distributed between sex and weight, with typically 8-10 weeks of age. The average weight within the groups is between 22 and 24 g. Groups are formed to have comparable numbers of females/males of the same age. Animal weight is arranged to have a similar distribution between females and males. For the pharmacological inhibitor experiments, CreERT2;Gpx4 <sup>fl/fl</sup> mice are injected on day 1 and 3 with 0.5 mg TAM dissolved in Miglyol. On day 4, compound treatment is started (Liproxstatin-1: 10 mg/kg) along with vehicle control (1% dimethylsulphoxide (DMSO) in PBS). Liproxstatin-1 and vehicle control are administered once daily by i.p. injection. Survival analysis is performed using the GraphPad Prism software and statistical analysis is done according to the log-rank test. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Cell Stem Cell. 2024 Aug 21:S1934-5909(24)00285-6.
- Bioact Mater. 2021 Nov 19;13:23-36.
- Nat Commun. 2023 Mar 17;14(1):1430.
- J Clin Invest. 2024 Jan 23.
- Adv Sci (Weinh). 2024 Jan 17:e2307870.

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## REFERENCES

[1]. Friedmann Angeli JP, et al. Inactivation of the ferroptosis regulator Gpx4 triggers acute renal failure in mice. Nat Cell Biol. 2014 Dec;16(12):1180-91.

[2]. Zilka O, et al. On the Mechanism of Cytoprotection by Ferrostatin-1 and Liproxstatin-1 and the Role of Lipid Peroxidation in Ferroptotic Cell Death. ACS Cent Sci. 2017 Mar 22;3(3):232-243

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA