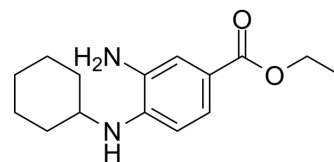


## Ferrostatin-1

<b>Cat. No.:</b>	HY-100579
<b>CAS No.:</b>	347174-05-4
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>22</sub> N <sub>2</sub> O <sub>2</sub>
<b>Molecular Weight:</b>	262.35
<b>Target:</b>	Ferroptosis; Fungal
<b>Pathway:</b>	Apoptosis; Anti-infection
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 125 mg/mL (476.46 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>Concentration</b>				
		<b>1 mM</b>		3.8117 mL	19.0585 mL	38.1170 mL
		<b>5 mM</b>		0.7623 mL	3.8117 mL	7.6234 mL
<b>10 mM</b>		0.3812 mL	1.9059 mL	3.8117 mL		
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (9.53 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: 2.5 mg/mL (9.53 mM); Suspended solution; Need ultrasonic					
	3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (7.93 mM); Clear solution					
	4. Add each solvent one by one: 10% DMSO >> 90% saline Solubility: 0.2 mg/mL (0.76 mM); Clear solution; Need ultrasonic					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Ferrostatin-1 (Fer-1), a potent and selective ferroptosis inhibitor, suppresses Erastin-induced ferroptosis in HT-1080 cells (EC <sub>50</sub> =60 nM). Ferrostatin-1, a synthetic antioxidant, acts via a reductive mechanism to prevent damage to membrane lipids and thereby inhibits cell death. Ferrostatin-1 exhibits antifungal activity <sup>[1][2][3]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	EC50: 60 nM (Ferroptosis) <sup>[1]</sup>
<b>In Vitro</b>	Ferrostatin-1 prevents erastin-induced accumulation of cytosolic and lipid ROS. Ferrostatin-1 prevents glutamate-induced

neurotoxicity in organotypic rat brain slices<sup>[1]</sup>.

Ferrostatin-1 (2  $\mu$ M; 24 h) prevents Glutamate (5 mM)-induced neurotoxicity in a rat organotypic hippocampal slice culture (OHSC)<sup>[2]</sup>.

Ferrostatin-1 inhibits lipid peroxidation, but not mitochondrial reactive oxygen species formation or lysosomal membrane permeability<sup>[2]</sup>.

Ferrostatin-1 inhibits cell death in cellular models of Huntington's disease (HD), periventricular leukomalacia (PVL), and kidney dysfunction<sup>[2]</sup>.

Ferrostatin-1 (1  $\mu$ M; 6 h) inhibits the oxidative destruction of unsaturated fatty acids in HT-1080 cells, thus increases the number of healthy medium spiny neurons (MSNs)<sup>[3]</sup>.

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

#### In Vivo

Ferrostatin-1 (5 mg/kg; ip; single dose, 30 min before glycerol injection) improves renal function in mice with rhabdomyolysis, whereas no beneficial effects were observed with the pan-caspase inhibitor zVAD or in RIPK3-deficient mice<sup>[1]</sup>.

Ferrostatin-1 (0.8 mg/kg; tail vein injection) effectively alleviates LPS-induced acute lung injury (ALI)<sup>[4]</sup>.

Ferrostatin-1 (i.p.; 5 mg/kg; C57BL/6J mice) improves renal function in mice with rhabdomyolysis<sup>[5]</sup>.

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

Animal Model:	Male C57BL/6 mice (LPS-induced ALI) <sup>[4]</sup>
Dosage:	0.8 mg/kg
Administration:	Tail vein injection
Result:	Exerted therapeutic action against LPS-induced ALI.

## CUSTOMER VALIDATION

- Cell Res. 2023 Jul 17.
- Signal Transduct Target Ther. 2020 May 8;5(1):51.
- Cell Discov. 2022 May 3;8(1):40.
- Adv Mater. 2023 Jun;35(23):e2300548.
- Cancer Discov. 2023 Apr 3;CD-22-0411.

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## REFERENCES

[1]. Dixon SJ, et al. Ferroptosis: an iron-dependent form of nonapoptotic cell death. *Cell*. 2012;149(5):1060-1072.

[2]. Skouta R, Dixon SJ, Wang J, et al. Ferrostatins inhibit oxidative lipid damage and cell death in diverse disease models. *J Am Chem Soc*. 2014;136(12):4551-4556.

[3]. Horwath MC, et al. Antifungal Activity of the Lipophilic Antioxidant Ferrostatin-1. *Chembiochem*. 2017;18(20):2069-2078.

[4]. Liu P, Feng Y, et al. Ferrostatin-1 alleviates lipopolysaccharide-induced acute lung injury via inhibiting ferroptosis. *Cell Mol Biol Lett*. 2020;25:10. Published 2020 Feb 27.

[5]. Melania Guerrero Hue, et al. FP282 FERROPTOSIS-MEDIATED CELL DEATH IS DECREASED BY CURCUMIN IN RENAL DAMAGE ASSOCIATED TO RHABDOMYOLYSIS, *Nephrology Dialysis Transplantation*, Volume 34, Issue Supplement\_1, June 2019, gzf106.FP282.

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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