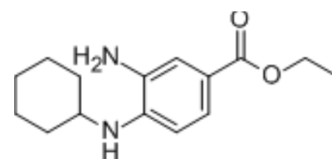


Ferrostatin-1

Cat. No.:	HY-100579
CAS No.:	347174-05-4
Molecular Formula:	C ₁₅ H ₂₂ N ₂ O ₂
Molecular Weight:	262
Target:	Ferroptosis; Fungal
Pathway:	Apoptosis; Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 125 mg/mL (477.10 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	3.8168 mL	19.0840 mL	38.1679 mL
				5 mM	0.7634 mL	3.8168 mL	7.6336 mL
				10 mM	0.3817 mL	1.9084 mL	3.8168 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 (9.54 mM); Clear solution						
	2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: 2.5 mg/mL (9.54 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 (7.94 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

Description	Ferrostatin-1 (Fer-1), a potent and selective ferroptosis inhibitor, suppresses Erastin-induced ferroptosis in HT-1080 cells (EC ₅₀ =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 ^{[1][2][3]} .
IC ₅₀ & Target	EC ₅₀ : 60 nM (Ferroptosis) ^[1]
In Vitro	Ferrostatin-1 prevents erastin-induced accumulation of cytosolic and lipid ROS. Ferrostatin-1 prevents glutamate-induced

neurotoxicity in organotypic rat brain slices^[1].

Ferrostatin-1 (2 μ M; 24 h) prevents Glutamate (5 mM)-induced neurotoxicity in a rat organotypic hippocampal slice culture (OHSC)^[2].

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

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

Ferrostatin-1 (1 μ 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)^[3].

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^[1].

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

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

Ferrostatin-1 (10 mg/kg/d, i.p., 3 d) attenuates hypoxic-ischemic brain damage-, oxygen-glucose deprivation-, or Erastin (HY-15763)-induced ferroptosis in brain of neonatal rats^[6].

Ferrostatin-1 (0.655 mg/kg, i.p., 3 times a week for 6 week) exerts anti-ferroptosis effects by increasing GPX4 activity and by inhibiting lipid peroxidation in the salivary gland of ovariectomized (postmenopausal model) rats^[7].

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

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

CUSTOMER VALIDATION

- Cell. 2024 Feb 1;187(3):624-641.e23.
- 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.

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- [1]. Zhang M, et al. Ferrostatin-1 attenuates hypoxic-ischemic brain damage in neonatal rats by inhibiting ferroptosis. *Transl Pediatr.* 2023 Nov 28;12(11):1944-1970.
- [2]. Cheon YI, et al. Effect of deferoxamine and ferrostatin-1 on salivary gland dysfunction in ovariectomized rats. *Aging (Albany NY).* 2023 Apr 6;15(7):2418-2432.
- [3]. Dixon SJ, et al. Ferroptosis: an iron-dependent form of nonapoptotic cell death. *Cell.* 2012;149(5):1060-1072.
- [4]. 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.
- [5]. Horwath MC, et al. Antifungal Activity of the Lipophilic Antioxidant Ferrostatin-1. *Chembiochem.* 2017;18(20):2069-2078.

[6]. 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.

[7]. 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.

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

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