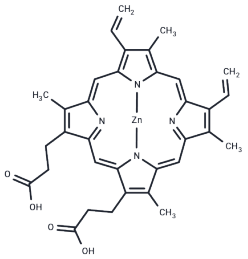
Data Sheet (Cat.No.T13396)

TargetMol

Zinc Protoporphyrin

Chemical Properties



CAS No. : 15442-64-5

Formula: C34H32N4O4Zn

Molecular Weight: 626.02

Storage: Keep away from direct sunlight,Keep away from moisture
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Zinc Protoporphyrin (Zn(II)-protoporphyrin IX) is an orally active, competitive inhibitor of heme oxygenase-1 (HO-1) that markedly attenuates the protective effects of Phloroglucinol (PG) against H2O2 and exhibits anti-cancer activity.
Targets(IC50)	Apoptosis,Reactive Oxygen Species,Endogenous Metabolite,ROS
In vitro	Zinc Protoporphyrin (Zn(II)-protoporphyrin IX; 5 μM; 72 hours) increased the proportion of late apoptosis and necrotic cells from 10.9% in the control group to 30.4% after 72 hours [3]. Zinc Protoporphyrin (1.25-40 μM; 48 or 72 hours) exerts cystostatic/cytotoxic effects against tumor cells[3]. Zinc Protoporphyrin (2.5, 5 μM; 48 or 72 hours) results in dose- and time-dependent reduction of cells in G1 phase of the cell cycle[3]. Zinc Protoporphyrin (1.25-40 μM; 48 hours) leads to accumulation of cleaved (active) caspase-3[3].
In vivo	Zinc Protoporphyrin exhibits dose-dependent antitumor effects manifested by the retardation of tumor growth[3].

Solubility Information

Solubility	DMSO: 50 mg/mL (79.87 mM),Sonication is recommended. H2O: < 0.1 mg/mL (insoluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5974 mL	7.987 mL	15.9739 mL
5 mM	0.3195 mL	1.5974 mL	3.1948 mL
10 mM	0.1597 mL	0.7987 mL	1.5974 mL
50 mM	0.0319 mL	0.1597 mL	0.3195 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Park C, et al. Protective Effect of Phloroglucinol on Oxidative Stress-Induced DNA Damage and Apoptosisthrough Activation of the Nrf2/HO-1 Signaling Pathway in HaCaT Human Keratinocytes. Mar Drugs. 2019 Apr 13;17(4).
Qiu W, An S, Wang T, et al. Melatonin suppresses ferroptosis via activation of the Nrf2/HO-1 signaling pathway in the mouse model of sepsis-induced acute kidney injury. International Immunopharmacology. 2022, 112: 109162.
Mwangi MN, et al. Diagnostic utility of zinc protoporphyrin to detect iron deficiency in Kenyan pregnant women. BMC Med. 2014 Nov 26;12:229.
Nowis D, et al. Zinc protoporphyrin IX, a heme oxygenase-1 inhibitor, demonstrates potent antitumor effects but is unable to potentiate antitumor effects of chemotherapeutics in mice. BMC Cancer. 2008 Jul 11;8:197.