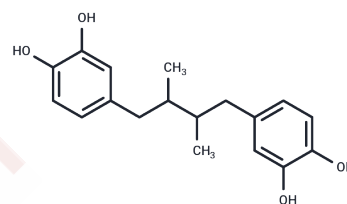


Nordihydroguaiaretic acid

Chemical Properties

CAS No. :	500-38-9
Formula:	C ₁₈ H ₂₂ O ₄
Molecular Weight:	302.36
Appearance:	no data available
Storage:	store under nitrogen
	Powder: -20°C for 3 years In solvent: -80°C for 1 year



Biological Description

Description	Nordihydroguaiaretic acid (NDGA) is a natural product, extracted from Pole Fork Kelarua, and is a lipoxygenase (5-LOX) inhibitor (IC ₅₀ =8 μM). Nordihydroguaiaretic acid possesses antioxidant and free radical scavenging properties.
Targets(IC ₅₀)	Antioxidant, Ferroptosis, Autophagy, Lipoxygenase
In vitro	METHODS: Voxelotor (3-30 μmol/L) was incubated with hemoglobin (25 μmol/L) in TES or saline buffer at 37 °C for 45 min, and changes in the binding affinity of O ₂ for Hb were measured using a TCS hematology analyzer. RESULTS: Voxelotor, a small molecule that binds to the N-terminal α-chain of Hb, increases the affinity of HbS for oxygen, delays HbS polymerization in vitro and prevents erythrocyte sickling. [1] METHODS: HepG2 cells were treated with Voxelotor (1 μg/mL) and their metabolites were analyzed by liquid chromatography, high resolution MS and tandem MS. RESULTS: Voxelotor can be used for the identification of phase I and phase II metabolites in vitro. [2]
In vivo	METHODS: To assess the activity and efficacy of Voxelotor, Voxelotor (100-150 mg/kg, 0.5% methylcellulose/0.5% SDS) was administered by gavage to a mouse model of SCD twice daily for 9-12 days. RESULTS: Voxelotor reduced isolated sickle cells and prolonged erythrocyte half-life in the SCD mouse model. [1]

Solubility Information

Solubility	10% DMSO+90% Saline: 4.3 mg/mL (14.22 mM), Solution. DMSO: 43 mg/mL (142.21 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3073 mL	16.5366 mL	33.0732 mL
5 mM	0.6615 mL	3.3073 mL	6.6146 mL
10 mM	0.3307 mL	1.6537 mL	3.3073 mL
50 mM	0.0661 mL	0.3307 mL	0.6615 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.

Reference

Tezil T, et al. Lifespan-increasing drug nordihydroguaiaretic acid inhibits p300 and activates autophagy. NPJ Aging Mech Dis. 2019 Oct 2;5:7.

Tan Q, Wu D, Lin Y, et al. Identifying eleven new ferroptosis inhibitors as neuroprotective agents from FDA-approved drugs. Bioorganic Chemistry. 2024: 107261.

Guzmán-Beltrán S, et al. Nordihydroguaiaretic acid attenuates the oxidative stress-induced decrease of CD33 expression in human monocytes. Oxid Med Cell Longev. 2013;2013:375893.

Kim SY, et al. Regulation of pro-inflammatory responses by lipoxigenases via intracellular reactive oxygen species in vitro and in vivo. Exp Mol Med. 2008 Aug 31;40(4):461-76.

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