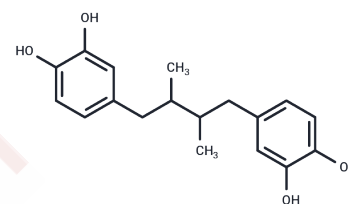


## Nordihydroguaiaretic acid

## Chemical Properties

CAS No. :	500-38-9
Formula:	C <sub>18</sub> H <sub>22</sub> O <sub>4</sub>
Molecular Weight:	302.36
Storage:	Store under nitrogen Powder: -20°C for 3 years   In solvent: -80°C for 1 year <i>Actual storage temperature shall be subject to the COA.</i>



## Biological Description

Description	Nordihydroguaiaretic acid (NDGA) is a natural product, extracted from Pole Fork Kelaroa, and is a lipoxygenase (5-LOX) inhibitor (IC <sub>50</sub> =8 μM). Nordihydroguaiaretic acid possesses antioxidant and free radical scavenging properties.
Targets(IC <sub>50</sub> )	Antioxidant, Ferroptosis, Autophagy, Lipoxygenase
In vitro	<p><b>METHODS:</b> 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<sub>2</sub> for Hb were measured using a TCS hematology analyzer.</p> <p><b>RESULTS:</b> 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]</p> <p><b>METHODS:</b> HepG2 cells were treated with Voxelotor (1 μg/mL) and their metabolites were analyzed by liquid chromatography, high resolution MS and tandem MS.</p> <p><b>RESULTS:</b> Voxelotor can be used for the identification of phase I and phase II metabolites in vitro. [2]</p>
In vivo	<p><b>METHODS:</b> 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.</p> <p><b>RESULTS:</b> Voxelotor reduced isolated sickle cells and prolonged erythrocyte half-life in the SCD mouse model. [1]</p>

## Solubility Information

Solubility	DMSO: 43 mg/mL (142.21 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 4.3 mg/mL (14.22 mM), Solution. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### 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.

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

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 lipoxygenases via intracellular reactive oxygen species in vitro and in vivo. Exp Mol Med. 2008 Aug 31;40(4):461-76.

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