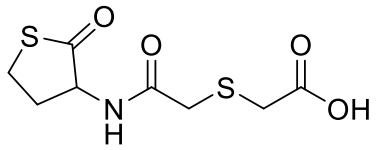
Product data sheet

MedKoo Cat#: 540120 Name: Erdosteine CAS#: 84611-23-4 Chemical Formula: $C_8H_{11}NO_4S_2$ Exact Mass: 249.0129 Molecular Weight: 249.29	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Erdosteine is a thiol derivative and antioxidant used to treat bronchitis and COPD. It inhibits H2O2-induced oxidative stress and DNA damage, scavenges free radicals, and decreases levels of leukotrienes.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	43.33	173.81
DMSO:PBS (pH 7.2) (1:5)	0.16	0.64
DMF	25.0	100.28
Ethanol	10.0	40.11
Water	6.67	26.76

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.01 mL	20.06 mL	40.11 mL
5 mM	0.80 mL	4.01 mL	8.02 mL
10 mM	0.40 mL	2.01 mL	4.01 mL
50 mM	0.08 mL	0.40 mL	0.80 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Xi Y, Huang X, Tan G, Chu X, Zhang R, Ma X, Ni B, You H. Protective effects of Erdosteine on interleukin-1β-stimulated inflammation via inhibiting the activation of MAPK, NF-κB, and Wnt/β-catenin signaling pathways in rat osteoarthritis. Eur J Pharmacol. 2020 Apr 15;873:172925. doi: 10.1016/j.ejphar.2020.172925. Epub 2020 Jan 17. PMID: 31958453.
2. Kim SJ, Park C, Lee JN, Lim H, Hong GY, Moon SK, Lim DJ, Choe SK, Park R. Erdosteine protects HEI-OC1 auditory cells from cisplatin toxicity through suppression of inflammatory cytokines and induction of Nrf2 target proteins. Toxicol Appl Pharmacol. 2015 Oct 15;288(2):192-202. doi: 10.1016/j.taap.2015.07.014. Epub 2015 Jul 18. PMID: 26193055.

In vivo study

1. Mutneja E, Verma VK, Malik S, Sahu AK, Ray R, Bhatia J, Arya DS. Erdosteine salvages cardiac necrosis: Novel effect through modulation of MAPK and Nrf-2/HO-1 pathway. J Biochem Mol Toxicol. 2020 Dec;34(12):e22590. doi: 10.1002/jbt.22590. Epub 2020 Jul 30. PMID: 33210414.

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2. Dobrakowski M, Machoń-Grecka A, Nowak P, Szczęsny P, Maciejczyk M, Kasperczyk A, Pryzwan T, Kasperczyk S. The influence of erdosteine administration on lead-induced oxidative stress in rat muscle. Drug Chem Toxicol. 2019 Sep 10:1-5. doi: 10.1080/01480545.2019.1659810. Epub ahead of print. PMID: 31502475.

7. Bioactivity

Biological target:

Erdosteine inhibits lipopolysaccharide (LPS)-induced NF-κB activation.

In vitro activity

Cell viability, pro-inflammatory cytokines and the degradation of ECM biomarkers were tested to determine the effects of ER (erdosteine) at 10, 20, and 40 μM doses on IL-1β-induced rat chondrocytes for 24 h in vitro. In vivo, intra-articular injections of 50 μl of 100 mg/ml ER twice a week for 8 weeks. The results showed ER significantly suppressed the expressions of IL-1β-induced the production of inflammatory factors in a dose-dependent pattern (4.30-fold decrease in COX-2, $p < 0.05$; 4.77-fold decrease in iNOS, $p < 0.05$ at 40 μM in protein levels).

Reference: Eur J Pharmacol. 2020 Apr 15;873:172925. https://pubmed.ncbi.nlm.nih.gov/31958453/

In vivo activity

Erdosteine at 80 mg/kg reversed the deleterious effects of ISO and normalized myocardium. Erdosteine showed anti-inflammatory, antiapoptotic, and antioxidant activities through inhibition of MAPK and Nrf-2/HO-1 pathways. To conclude, erdosteine was found protective in ISO-induced myocardial necrosis through MAPK and Nrf-2/HO-1 pathway.

Reference: J Biochem Mol Toxicol. 2020 Dec;34(12):e22590. https://pubmed.ncbi.nlm.nih.gov/33210414/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.