

# PRODUCT INFORMATION



## Dihydrolipoic Acid

Item No. 16372

CAS Registry No.: 462-20-4  
Formal Name: 6,8-dimercapto-octanoic acid

Synonym: DHLA  
MF:  $C_8H_{16}O_2S_2$

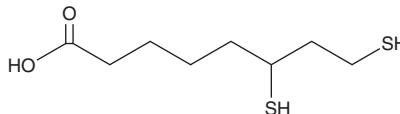
FW: 208.3

Purity:  $\geq 95\%$

Supplied as: A neat oil

Storage:  $-20^\circ\text{C}$

Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



### Laboratory Procedures

Dihydrolipoic acid (DHLA) is supplied as a neat oil. A stock solution may be made by dissolving the DHLA in the solvent of choice. DHLA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of DHLA in these solvents is approximately 30 mg/ml.

DHLA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, DHLA should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. DHLA has a solubility of approximately 0.25 mg/ml in a 1:8 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

DHLA is a dithiol-containing carboxylic acid that is the reduced form of  $\alpha$ -lipoic acid (Item No. 10005728). It acts as a general antioxidant that is highly reactive against a variety of reactive oxygen species, including hydroxyl radicals, peroxynitrite, hydrogen peroxide, and hypochlorite, at concentrations ranging from 0.01-0.5 mM.<sup>1</sup> At concentrations of 50-100  $\mu\text{M}$ , DHLA triggers apoptosis of mouse embryonic stem cells and human cancer cells, suppressing proliferation.<sup>2</sup>

### References

1. Moini, H., Packer, L., and Saris, N.-E.L. Antioxidant and prooxidant activities of  $\alpha$ -lipoic acid and dihydrolipoic acid. *Toxicol. Appl. Pharmacol.* **182**, 84-90 (2002).
2. Houg, W.-L., Lin, C.-A.J., Shen, J.-L., et al. Dihydrolipoic acid induces cytotoxicity in mouse blastocysts through apoptosis processes. *Int. J. Mol. Sci* **13**, 3988-4002 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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