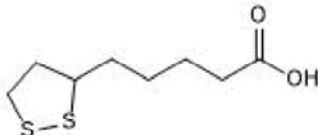


Certificate of Analysiswww.tocris.com**Product Name:** (±)- α -Lipoic acid**Catalog No.:** 7044**Batch No.:** 1

CAS Number: 1077-28-7

IUPAC Name: 1,2-Dithiolane-3-pentanoic acid

1. PHYSICAL AND CHEMICAL PROPERTIES**Batch Molecular Formula:** C₈H₁₄O₂S₂**Batch Molecular Weight:** 206.32**Physical Appearance:** Yellow solid**Solubility:** DMSO to 100 mM
ethanol to 100 mM**Storage:** Store at +4°C**Batch Molecular Structure:****2. ANALYTICAL DATA****HPLC:** Shows 100.0% purity**¹H NMR:** Consistent with structure**Mass Spectrum:** Consistent with structure**Microanalysis:** Carbon Hydrogen Nitrogen

Theoretical 46.57 6.84

Found 46.56 6.87

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Product Information

www.tocris.com

Product Name: (\pm)- α -Lipoic acid

Catalog No.: 7044

Batch No.: 1

CAS Number: 1077-28-7

IUPAC Name: 1,2-Dithiolane-3-pentanoic acid

Description:

(\pm)- α -Lipoic acid (ALA) is a liquid-liquid phase separated condensate modifier. Reduces stress granule formation in HeLa cells. Also stimulates mitochondrial biogenesis in 3T3-L1 adipocytes. Prevents dieback of FUS mutant motor neurons in culture and reverses motor defects in *D. melanogaster* expressing mutated human FUS. (\pm)- α -Lipoic acid is also an antioxidant. In hematopoietic stem cells (HSC) (\pm)- α -Lipoic acid reduces levels of reactive oxygen species (ROS) and inhibits apoptosis. It also promotes the generation of hematopoietic stem/progenitor cells from hPSCs in vitro and maintenance of functional cord blood... Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

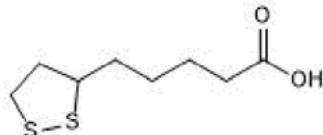
Batch Molecular Formula: C₈H₁₄O₂S₂

Batch Molecular Weight: 206.32

Physical Appearance: Yellow solid

Minimum Purity: \geq 98%

Batch Molecular Structure:



References:

Dong et al (2020) Alpha lipoic acid promotes development of hematopoietic progenitors derived from human embryonic stem cells by antagonizing ROS signals. *J.Leukoc.Biol.* **108** 1711. PMID: 32640500.

Wheeler et al (2019) Small molecules for modulating protein driven liquid-liquid phase separation in treating neurodegenerative disease. *BioRxiv* - paper not yet peer reviewed.

Shen et al (2011) Lipoamide or lipoic acid stimulates mitochondrial biogenesis in 3T3-L1 adipocytes via the endothelial NO synthase-cGMP-protein kinase G signalling pathway. *Br.J.Pharmacol.* **162** 1213. PMID: 21108628.

Storage: Store at +4°C. This product is packaged under an inert atmosphere.

Solubility & Usage Info:

DMSO to 100 mM
ethanol to 100 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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