

Product Name: *N*-Acetylcysteine amide

Catalog No.: 5619

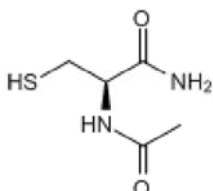
Batch No.: 4

CAS Number: 38520-57-9

IUPAC Name: (2*R*)-2-(Acetylamino)-3-mercaptopropanamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₅H₁₀N₂O₂S
Batch Molecular Weight: 162.21
Physical Appearance: White solid
Solubility: water to 100 mM
DMSO to 100 mM
Storage: Store at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure
Optical Rotation: [α]_D = -8 (Concentration = 1, Solvent = Water)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	37.02	6.21	17.27
Found	37.12	6.17	17.32

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

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Description:

N-Acetylcysteine amide is a glutathione (GSH) precursor and cell-permeable antioxidant. N-Acetylcysteine amide replenishes intracellular Glutathione (GSH). N-Acetylcysteine amide directly reduces intracellular Glutathione disulfide (GSSG) to GSH without glutathione peroxidase. N-Acetylcysteine amide has anti-inflammatory activity through regulation of activation of NF-κB and HIF-1α, as well as modulation of reactive oxygen species. N-Acetylcysteine amide improves neuronal mitochondrial bioenergetics, reduces tissue damage and enhances functional recovery following spinal cord injury in rats. N-Acetylcysteine amide also enhances beha... Please see product specific page on www.tocris.com for full description.

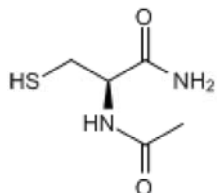
Physical and Chemical Properties:

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References:

Tu et al (2019) The anti-inflammatory and anti-oxidant mechanisms of the Keap1/Nrf2/ARE signaling pathway in chronic diseases. *Aging Dis* **10** 637. PMID: 31165007.

Pandya et al (2014) N-acetylcysteine amide confers neuroprotection, improves bioenergetics and behavioral outcome following TBI. *Exp.Neurol.* **257** 106. PMID: 24792639.

Patel et al (2014) N-acetylcysteine amide preserves mitochondrial bioenergetics and improves functional recovery following spinal trauma. *Exp.Neurol.* **257** 95. PMID: 24805071.

Storage: Store at -20°C. This product is packaged under an inert atmosphere.

Solubility & Usage Info:

water to 100 mM

DMSO 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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