

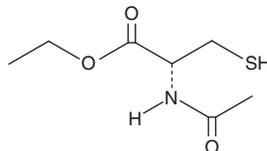
# PRODUCT INFORMATION



## N-acetyl-L-Cysteine ethyl ester

Item No. 30299

**CAS Registry No.:** 59587-09-6  
**Synonyms:** NACET, NAC ethyl ester  
**MF:** C<sub>7</sub>H<sub>13</sub>NO<sub>3</sub>S  
**FW:** 191.2  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

N-acetyl-L-Cysteine ethyl ester is supplied as a crystalline solid. A stock solution may be made by dissolving the N-acetyl-L-cysteine ethyl ester in the solvent of choice, which should be purged with an inert gas. N-acetyl-L-Cysteine ethyl ester is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of N-acetyl-L-cysteine ethyl ester in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of N-acetyl-L-cysteine ethyl ester can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of N-acetyl-L-cysteine ethyl ester in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

N-acetyl-L-Cysteine ethyl ester is an esterified form of N-acetyl-L-cysteine (NAC; Item No. 20261). It has enhanced cell permeability in isolated perfused rat liver compared to NAC.<sup>1</sup> N-acetyl-L-Cysteine ethyl ester (1 mM) prevents *tert*-butyl hydroperoxide-induced formation of methemoglobin in isolated human red blood cells. It increases glutathione levels in rat liver, kidney, heart, testis, and brain when administered at a dose of 50 mg/kg twice per day for two weeks. N-acetyl-L-Cysteine ethyl ester reduces increases in plasma aspartate aminotransferase (AST), alanine aminotransferase (ALT), and lactate dehydrogenase (LDH) levels induced by paracetamol (acetaminophen; Item No. 10024) in rats.

### Reference

1. Giustarini, D., Milzani, A., Dalle-Donne, I., *et al.* N-Acetylcysteine ethyl ester (NACET): A novel lipophilic cell-permeable cysteine derivative with an unusual pharmacokinetic feature and remarkable antioxidant potential. *Biochem. Pharmacol.* **84(11)**, 1522-1533 (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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