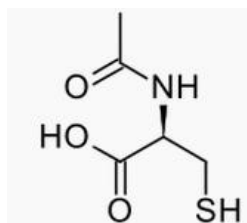


Product Specification Sheet

N-Acetyl-L-cysteine (NAC)

- Cat. # NALC15-N-1	N-Acetyl-L-cysteine (>99%, cell culture grade)in	SIZE: 1 g
- Cat. # NALC15-N-5	N-Acetyl-L-cysteine (>99%, cell culture grade)in	SIZE: 5 g



Acetylcysteine also known as N-acetylcysteine or N-acetyl-L-cysteine (NAC), is a pharmaceutical drug and nutritional supplement used primarily as a mucolytic agent and in the management of paracetamol (acetaminophen) overdose. Other uses include sulfate repletion in conditions, such as autism, where cysteine and related sulfur amino

acids may be depleted. Acetylcysteine is a derivative of cysteine where an acetyl group is attached to the nitrogen atom. This compound is sold as a dietary supplement commonly claiming antioxidant and liver protecting effects. It is used as a cough medicine because it breaks disulfide bonds in mucus and liquefies it, making it easier to cough up. It is also this action of breaking disulfide bonds that makes it useful in thinning the abnormally thick mucus in cystic and pulmonary fibrosis patients. It is on the World Health Organization's List of Essential Medicines, a list of the most important medication needed in a basic health system.

Inhaled acetylcysteine is indicated for mucolytic ("mucus-dissolving") therapy as an adjuvant in respiratory conditions with excessive and/or thick mucus production. Such conditions include emphysema, bronchitis, tuberculosis, bronchiectasis, amyloidosis, pneumonia, cystic fibrosis, chronic obstructive pulmonary disease, and pulmonary fibrosis. It is also used post-operatively, as a diagnostic aid, and in tracheotomy care. It may be considered ineffective in cystic fibrosis.[17] However, a recent paper in the Proceedings of the National Academy of Sciences reports that high-dose oral acetylcysteine modulates inflammation in cystic fibrosis and has the potential to counter the intertwined redox and inflammatory imbalances in CF.[18] Oral acetylcysteine may also be used as a mucolytic in less serious cases.

For this indication, acetylcysteine acts to reduce mucus viscosity by splitting disulfide bonds linking proteins present in the mucus (mucoproteins). Furthermore, with respect to its use as a mucolytic agent in patients with COPD, it is hypothesized that acetylcysteine may exert additional beneficial effects through its anti-inflammatory and antioxidant properties.

Source & Properties

CAS Number:	616-91-1
MDL:	MFCD00004880
Formula:	C ₅ H ₉ NO ₃ S
Formula Weight:	163.19 g/mol
Storage Temp.	2 - 8 °C

TEST	Specification
Appearance (Color)	White to Off White
Appearance	(Form) Powder
Solubility (Color)	Colorless
Solubility (Turbidity)	Clear 100 mg/mL, H ₂ O
Carbon	36.0 - 38.0 %
Nitrogen	8.3 - 8.9 %
Infrared spectrum	Conforms to Structure
Purity	(TLC) > 99 %
Recommended Retest Period	3 yrs

General References:

<https://en.wikipedia.org/wiki/Acetylcysteine>; L-Cysteine, N-acetyl- - Compound Summary". PubChem Compound. USA: National Center for Biotechnology Information. 25 March 2005; Borgstrom L (1986) Eur. J. Clin. Pharmacol. 31 (2): 217–22; Green JL (2013) West J Emerg Med 3: 218–26; Samuni Y (2013) Biochimica et Biophysica Acta 1830 (8): 4117–29.; Dodd S (2008) Expert Opin Biol Ther 8 (12): 1955–62.

*This product is for In vitro research use only.

Related material available from ADI

Ag85A111-P	M. tuberculosis Protein Ag85A	T-cell immunodominant CD8 peptide, MHC class I H-2Ld-restricted epitope (LTSELPGWLQANRHVKPTGS, WT: 2191.5)
Ag85A112-P	M. tuberculosis Protein Ag85A	T-cell immunodominant CD8 peptide, MHC class I H-2Ld-restricted epitope (MPVGGQSST, MW:863)
Ag85B211-P	M. tuberculosis Protein Ag85b	(199-207) HLA-A2 binding peptide (KLVANNTL)
MTB381-C	Recombinant purified M. tuberculosis antigen	38kDa/Ag85B control for Western
MTB381-M	Monoclonal Anti-Mycobacterium tuberculosis antigen	38kDa/Ag85B IgG
MTB38-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen	(38kDa/Ag85B)
MTB6381-S	Anti-M. Tuberculosis antigens	(6Kda/ESAT+16kDa+38KDa/Ag85b proteins antiserum
RP-999	Recomb. M. tuberculosis major secretory protein Antigen 85B	(38kda Antigen, Ag85b)
MTB161-C	Recombinant purified M. tuberculosis antigen	(16kDa/Hspcx) control for Western
MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen	(16kDa/Hspcx) IgG
MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen	(16kDa/Hspcx)
MTB161-C	Recombinant purified M. tuberculosis antigen	(16kDa/Hspcx) control for Western
MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen	(16kDa/Hspcx) IgG
MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen	(16kDa/Hspcx)
MTB061-C	Recombinant purified M. tuberculosis antigen	(6kDa/ESAT-6) control for Western
MTB061-M	Monoclonal Anti-Mycobacterium tuberculosis antigen	(6kDa/ESAT-6) IgG
MTB06-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen	(6kDa/ESAT-6)
MTB161-C	Recombinant purified M. tuberculosis antigen	(16kDa/Hspcx) control for Western
MTB161-M	Monoclonal Anti-Mycobacterium tuberculosis antigen	(16kDa/Hspcx) IgG
MTB16-R	Recombinant purified (E. coli) Mycobacterium tuberculosis antigen	(16kDa/Hspcx)
RP-977	Recombinant purified ESAT-6	(6 kDa early secretory antigen of T cells; M. Tuberculosis)
RP-977-100	Recombinant purified ESAT-6	(6 kDa early secretory antigen of T cells; M. tuberculosis)

NALC15-N-10-N-Acetyl-Cysteine-NAC 150716A