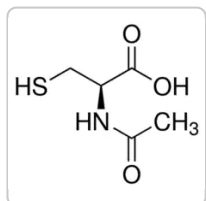


Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



[All Photos](#) (4)

Documents

[↓ SDS](#)

[🔍 COO/COA](#)

[📄 Specification Sheet](#)

[More Documents](#) »

A9165 ▶ **Sigma-Aldrich®**

N-Acetyl-L-cysteine

★★★★★ 5.0 (1)

BioReagent, suitable for cell culture

Synonym(s):

LNAC, NAC

Linear Formula:

HSCH₂CH(NHCOCH₃)CO₂H

CAS Number: **616-91-1**

Molecular Weight: 163.19







Beilstein: 1724426

EC Number: **210-498-3**

MDL number: **MFCD00004880**

PubChem Substance ID: **24891402**

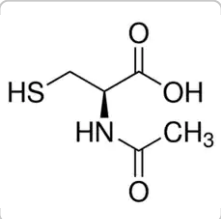
NACRES: NA.26

SKU	Pack Size	Availability	Price	Quantity		
A9165-5G	5 G	 Available to ship on October 10, 2022 Details...	€21.30	<div><div>—</div><div>+</div></div>		
A9165-25G	25 G	 Only 6 left in stock (more on the way) Details...	€72.50	<div><div>—</div><div>+</div></div>		
A9165-100G	100 G	 Only 3 left in stock (more on the way) Details...	€245.00	<div><div>—</div><div>+</div></div>		

[Request a Bulk Order](#)

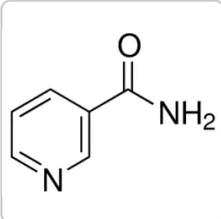
[Add to Cart](#)

RECOMMENDED PRODUCTS

 CC(=O)N[C@H](CS)C(=O)O

Sigma-Aldrich
A7250
N-Acetyl-L-cysteine
Sigma Grade, ≥99% (TLC), powder

[View Price and Availability](#)

 NC(=O)c1cccnc1

Sigma-Aldrich
N0636
Nicotinamide
BioReagent, suitable for cell culture, suitable for insect cell culture

[View Price and Availability](#)

PROPERTIES

product line BioReagent

Quality Level **200**

assay ≥99% (TLC)

form powder

technique(s) cell culture | mammalian: suitable

color white to off-white

mp	106-108 °C (lit.)
solubility	H ₂ O: 100 mg/mL (with heating)
storage temp.	2-8°C
SMILES string	<chem>CC(=O)N[C@@H](CS)C(O)=O</chem>
InChI	1S/C5H9NO3S/c1-3(7)6-4(2-10)5(8)9/h4,10H,2H2,1H3,(H,6,7)(H,8,9)/t4-/m0/s1
InChI key	PWKSKIMOESPYIA-BYPYZUCNSA-N

Looking for similar products? Visit [Product Comparison Guide](#)

Related Categories

[Amino Acids](#)

DESCRIPTION

Application

N-Acetyl-L-cysteine has been used as a component of intestinal basal medium for the culture of mouse intestinal stem cells and also as a component of expansion medium.

Packaging

5, 25, 100 g in poly bottle

Biochem/physiol Actions

Antioxidant and mucolytic agent. Increases cellular pools of free radical scavengers. Reported to prevent apoptosis in neuronal cells but induce apoptosis in smooth muscle cells. Inhibits HIV replication. May serve as a substrate for microsomal glutathione transferase.

RELATED PRODUCTS

Application

G004719

HPLC Analysis of ¹⁵N-Acetylcysteine Enantiomers on Astec® (R,R) P-CAP™, application for HPLC

[View Pricing](#)

Also Commonly Purchased With This Product

700000P

Cholesterol (ovine), cholesterol (ovine wool, 98%), powder

[View Pricing](#)

SAFETY INFORMATION

Pictograms**GHS07****Signal Word**

Warning

Hazard Statements**H319****Precautionary Statements****P264 - P280 - P305 + P351 + P338 - P337 + P313****Hazard Classifications**

Eye Irrit. 2

Storage Class Code

13 - Non Combustible Solids

WGK

WGK 2

Flash Point(F)

Not applicable

Flash Point(C)

Not applicable

Personal Protective Equipmentdust mask type N95 (US),
Eyeshields, Gloves

DOCUMENTATION

Certificate of Analysis

Enter Lot Number to search for Certificate of Analysis (COA).

Lot Number

e.g. 023J5431

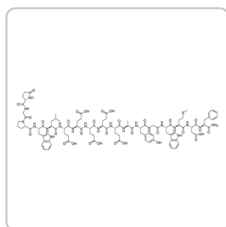
How to enter Lot Number (COA)**Search**

Certificate of Origin

Enter Lot Number to search for Certificate of Origin (COO).

Lot Number

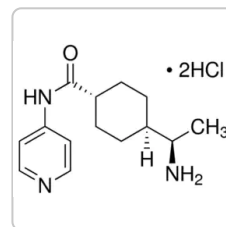
e.g. 023J5431

How to enter Lot Number (COO)**Search****More Documents**[FT-IR Condensed Phase](#)[FT-NMR Spectra](#)[Spectra - ATR-IR](#)[Spectra for FT-IR Raman](#)[Structure Search](#)[SDS](#)**CUSTOMERS ALSO VIEWED**

Sigma-Aldrich

G9020**Gastrin I human**

≥95% (HPLC)

[View Price and Availability](#)

Sigma-Aldrich

Y0503**Y-27632 dihydrochloride**

≥98% (HPLC)

[View Price and Availability](#)

FREQUENTLY ASKED QUESTIONS

Which document(s) contains shelf-life or expiration date information for a given product?

If available for a given product, the recommended re-test date or the expiration date can be found on the Certificate of Analysis.

How do I get lot-specific information or a Certificate of Analysis?

The lot specific COA document can be found by entering the lot number above under the "Documents" section.

My media turned yellow when I added N-acetyl cysteine (NAC), Product A9165. Why?

The pH of a 1% solution is 2.0-2.8. You may need to adjust the pH of the media with NaOH. Or, prior to addition to the media, you can initially dilute the NAC with PBS, and then add it to the culture media.

How stable is a solution of Product A9165, N-acetyl cysteine (NAC)?

Aqueous solutions of cysteine oxidize to cystine on contact with air at neutral or alkaline pH. We recommend making aqueous solutions fresh. NAC is relatively stable in acid. Solutions in acid are stable and can be stored at -20 °C.

What concentration of Product A9165, N-Acetyl-L-cysteine (NAC), should I use for cell culture?

Cell culture testing is performed at 0.82 g/L. The exact concentration will depend upon your application.

What is the half life of Product A9165, N-Acetyl-L-cysteine (NAC), in cell culture?

We have not tested the half-life of NAC solutions in our labs here at Sigma. However, this subject has been reviewed in Neuropsychopharmacology, 29, 2018-2023 (2004).

How do I find price and availability?

There are several ways to find pricing and availability for our products. Once you log onto our website, you will find the price and availability displayed on the product detail page. You can contact any of our Customer Sales and Service offices to receive a quote. USA customers: 1-800-325-3010 or view [local office numbers](#).

What is the Department of Transportation shipping information for this product?

Transportation information can be found in Section 14 of the product's (M)SDS. To access the shipping information for this material, use the link on the product detail page for the product.

My question is not addressed here, how can I contact Technical Service for assistance?

Ask a Scientist [here](#).

PEER REVIEWED PAPERS

Derivation and long-term expansion of human endometrial and decidual organoids

Margherita Turco

Protocol Exchange, 2639-2644 (2017)

Isolation, Culture, and Maintenance of Mouse Intestinal Stem Cells

Kevin P. O'Rourke

Bio-protocol, 6(4), e1733-e1733 (2016)

In vitro expansion of single Lgr5+ liver stem cells induced by Wnt-driven regeneration.

Meritxell Huch et al.

Nature, 494(7436), 247-250 (2013-01-29)

The Wnt target gene Lgr5 (leucine-rich-repeat-containing G-protein-coupled receptor 5) marks actively dividing stem cells in Wnt-driven, self-renewing tissues such as small intestine and colon, stomach and hair follicles. A three-dimensional culture system allows long-term clonal expansion of single Lgr5(+) stem

Detailed Biological Profiling of a Photoactivated and Apoptosis Inducing pdppz Ruthenium(II) Polypyridyl Complex in Cancer Cells.

Suzanne M Cloonan et al.

Journal of medicinal chemistry, 58(11), 4494-4505 (2015-05-12)

Ruthenium polypyridyl complexes show great promise as new photodynamic therapy (PDT) agents. However, a lack of detailed understanding of their mode of action in cells poses a challenge to their development. We have designed a new Ru(II) PDT candidate that

The chemistry and biological activities of N-acetylcysteine.

Yuval Samuni et al.

Biochimica et biophysica acta, 1830(8), 4117-4129 (2013-04-27)

N-acetylcysteine (NAC) has been in clinical practice for several decades. It has been used as a mucolytic agent and for the treatment of numerous disorders including paracetamol intoxication, doxorubicin cardiotoxicity, ischemia-reperfusion cardiac injury, acute respiratory distress syndrome, bronchitis, chemotherapy-induced toxicity

[View All Related Papers](#)

PROTOCOLS AND ARTICLES

Articles

Mitochondrial Stress and ROS

Oxidative stress is mediated, in part, by reactive oxygen species produced by multiple cellular processes and controlled by cellular antioxidant mechanisms such as enzymatic scavengers or antioxidant modulators. Free radicals, such as reactive oxygen species, cause cellular damage via cellular.

3D Organoid Culture: New In Vitro Models of Development and Disease

Organoid culture products to generate tissue and stem cell derived 3D brain, intestinal, gut, lung and cancer tumor organoid models.

Dietary Antioxidants

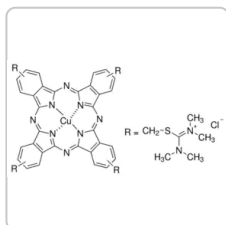
Antioxidants protect biological systems from oxidative damage produced by oxygen-containing free radicals and from redoxactive transition metal ions such as iron, copper, and cadmium.

Chromatograms

HPLC Analysis of ^{15}N -Acetylcysteine Enantiomers on Astec[®] (R,R) P-CAP[™]

application for HPLC

RECENTLY VIEWED PRODUCTS



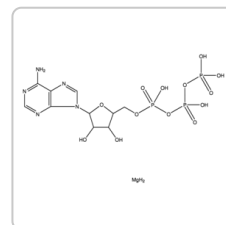
Sigma-Aldrich

A9186

Alcian Blue 8GX

BioReagent, suitable for detection of glycoproteins

[View Price and Availability](#)



Sigma-Aldrich

A9187

Adenosine 5'-triphosphate magnesium salt

≥95%, bacterial

[View Price and Availability](#)

Reviews

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4 ★	<input type="text"/>	0
3 ★	<input type="text"/>	0
2 ★	<input type="text"/>	0
1 ★	<input type="text"/>	0

Average Customer Ratings

Overall ★★★★★ 5.0

1 RATINGS-ONLY REVIEW

★★★★★ 5.0 | [1 Review](#)



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Questions

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