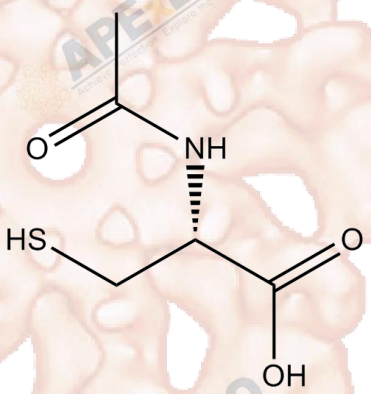
Product Data Sheet

Acetylcysteine

Cat. No.:	A8356
CAS No.:	616-91-1
Formula:	C5H9NO3S
M.Wt:	163.19
Synonyms:	N-acetylcysteine; N-acetyl-L-cysteine; NAC; Acetadote
Target:	Neuroscience
Pathway:	AChR
Storage:	Store at -20°C



Solvent & Solubility

In Vitro

≥44.6 mg/mL in H2O; ≥53.3 mg/mL in EtOH; ≥8.16 mg/mL in DMSO

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	6.1278 mL	30.6391 mL	61.2783 mL
5 mM	1.2256 mL	6.1278 mL	12.2557 mL
10 mM	0.6128 mL	3.0639 mL	6.1278 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary	Antioxidant;mucolytic agent
IC_{50} & Target	

In Vitro

Cell Viability Assay

Cell Line:	PC12 cells
Preparation method:	The solubility of this compound in DMSO is > 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37°C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

	Reacting conditions:	1–1000 μM; 3h
	Applications:	In PC12 cells, Acetylcysteine (NAC) produced concentration-dependent decreases in DOPAL levels. Co-incubation of NAC (1-10 μM) with selegiline (1 μM) attenuated or prevented the Cys-DA response to selegiline, without interfering with the selegiline-induced decrease in DOPAL production or inhibiting tyrosine hydroxylation.
In Vivo	**Animal experiment**	
	Animal models:	the R6/1 transgenic mouse model of Huntington's disease (HD)
	Dosage form:	500 mg/kg i.p., 4 weeks
	Applications:	In the R6/1 transgenic mouse model of Huntington's disease (HD), Acetylcysteine (NAC)-HD mice showed forced-swim test (FST) immobility times intermediate to saline-HD and saline-WT mice. NAC exhibited antidepressant-like effect. HD mice co-administered with CPG (inhibitor of GLT-1) and NAC showed higher immobility times than NAC-HD mice, suggesting that the antidepressant-like effect of NAC is dependent on glutamate transport.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

See more customer validations on www.apexbt.com.

References

[1]. Goldstein DS1, Jinsmaa Y2, Sullivan P2, et al. N-Acetylcysteine Prevents the Increase in Spontaneous Oxidation of Dopamine During Monoamine Oxidase Inhibition in PC12 Cells. Neurochem Res. 2017 Aug 24.

[2] Wright DJ1,2, Gray LJ3,2, Finkelstein DI1, et al. N-acetylcysteine modulates glutamatergic dysfunction and depressive behavior in Huntington's disease. Hum Mol Genet. 2016 Jul 15;25(14):2923-2933.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage

temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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