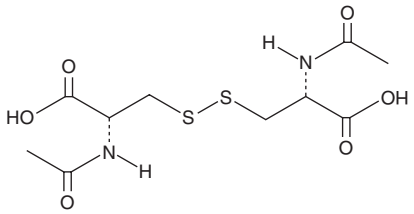
PRODUCT INFORMATION

N,N'-Diacetyl-L-cystine

Item No. 17596

CAS Registry No.:	5545-17-5
Formal Name:	N,N'-diacetyl-L-cystine
Synonyms:	N,N'-Diacetylcystine, DiNAC, NSC 203780
MF:	$C_{10}H_{16}N_2O_6S_2$
FW:	324.4
Purity:	≥90%
Stability:	≥2 years at -20°C
Supplied as:	A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N,N'-diacetyl-L-cystine (DiNAC) be stored as supplied at -20°C. It should be stable for at least two years.

DiNAC is supplied as a crystalline solid. A stock solution may be made by dissolving the DiNAC in the solvent of choice. DiNAC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of DiNAC in ethanol is approximately 25 mg/ml and approximately 20 mg/ml in DMSO and DMF.

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 DiNAC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DiNAC in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DiNAC is a disulfide dimer of N-acetylcysteine with immunomodulatory properties. Its intact disulfide bridge has been shown to be important for its ability to modify contact sensitivity/delayed hypersensitivity reactions in mice.[1,2] At 3 µM/kg/day, DiNAC also demonstrates anti-atherosclerotic effects, improving endothelial function in Watanabe heritable hyperlipidemic rabbits.[2-4]

References

1. Särnstrand, B., Jansson, A.-H., Matuseviciene, G., *et al.* N,N'-Diacetyl-L-cystine-the disulfide dimer of N-acetylcysteine-is a potent modulator of contact sensitivity/delayed type hypersensitivity reactions in rodents. *J. Pharmacol. Exp. Ther.* **288(3)**, 1174-1184 (1999).
2. Pettersson, K. and Bergstrand, H. The antiatherogenic effect of DiNAC: Experimental findings supporting immunomodulation as a new treatment for atherosclerosis related diseases. *Cardiovasc. Drug Rev.* **21(2)**, 119-132 (2003).
3. Wågberg, M., Jansson, A.-H., Westerlund, C., *et al.* N,N'-Diacetyl-L-cystine (DiNAC), the disulphide dimer of N-acetylcysteine, inhibits atherosclerosis in WHHL rabbits: Evidence for immunomodulatory agents as a new approach to prevent atherosclerosis. *J. Pharmacol. Exp. Ther.* **299(1)**, 76-82 (2001).
4. Pettersson, K.S., Eliasson, U.B., Abrahamsson, T., *et al.* N,N-Diacetyl-L-cystine improves endothelial function in atherosclerotic watanabe heritable hyperlipidaemic rabbits. *Basic Clin. Pharmacol. Toxicol.* **100**, 36-42 (2007).

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