

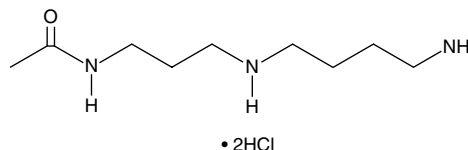
Product Information



N¹-Acetylspermidine (hydrochloride)

Item No. 9001535

CAS Registry No.: 34450-16-3
Formal Name: N-[3-[(4-aminobutyl)amino]propyl]-acetamide, dihydrochloride
Synonym: N¹-AcSPD
MF: C₉H₂₁N₃O • 2HCl
FW: 260.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that N¹-acetylspermidine (hydrochloride) be stored as supplied at -20°C. It should be stable for at least two years.

N¹-Acetylspermidine (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the N¹-acetylspermidine (hydrochloride) in the solvent of choice. N¹-Acetylspermidine (hydrochloride) is soluble in DMSO at a concentration of approximately 0.1 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 N¹-acetylspermidine (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of N¹-acetylspermidine (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

N¹-Acetylspermidine is an acetyl derivative of spermidine (Item No. 14918) that acts as a substrate for polyamine oxidase (PAO).¹ In peroxisomes, PAO oxidizes N¹-acetylspermidine to 3-acetamidopropanal and putrescine, a positively charged polyamine that binds DNA and is involved in various cellular processes including cell division, differentiation, and membrane function.²⁻⁵ N¹-Acetylspermidine has been used to examine the interaction between DNA and polyamines during the cleavage of phosphodiester bonds at apurinic/aprimidinic sites in DNA.⁶

References

1. Takao, K., Sugita, Y., and Shirahata, A. Assay of N¹-acetylpolyamine oxidase activity with N¹,N¹¹-didansyl norspermine as the substrate by ion-pair reversed phase high performance liquid chromatography. *Biol. Pharm. Bull.* **33(7)**, 1089-1094 (2010).
2. Gawandi, V. and Fitzpatrick, P.F. The synthesis of deuterium-labeled spermine, N¹-acetylspermine and N¹-acetylspermidine. *J. Labelled Comp. Radiopharm.* **50(7)**, 666-670 (2007).
3. Gill, S.S. and Tuteja, N. Polyamines and abiotic stress tolerance in plants. *Plant Signal. Behav.* **5(1)**, 26-33 (2010).
4. Prunotto, M., Compagnone, A., Bruschi, M., *et al.* Endocellular polyamine availability modulates epithelial-to-mesenchymal transition and unfolded protein response in MDCK cells. *Lab Invest.* **90(6)**, 929-939 (2010).
5. Babbar, N., Ignatenko, N.A., Casero, R.A., Jr., *et al.* Cyclooxygenase-independent induction of apoptosis by sulindac sulfone is mediated by polyamines in colon cancer. *J. Biol. Chem.* **278(48)**, 47762-47775 (2003).
6. Haukanes, B.I., Szajko, K., and Helland, D.E. Action of spermidine, N¹-acetylspermidine, and N⁸-acetylspermidine at apurinic sites in DNA. *FEBS Lett.* **269(2)**, 389-393 (1990).

Related Products

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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