

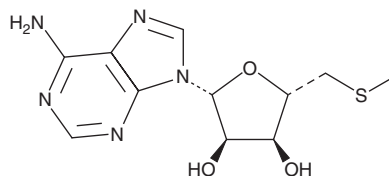
PRODUCT INFORMATION



5'-Deoxy-5'-methylthioadenosine

Item No. 15593

CAS Registry No.: 2457-80-9
Formal Name: 5'-S-methyl-5'-thio-adenosine
Synonyms: 5'-S-Methylthioadenosine, MTA, NSC 335422, Vitamin L₂
MF: C₁₁H₁₅N₅O₃S
FW: 297.3
Purity: ≥95%
UV/Vis.: λ_{max}: 260 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

5'-Deoxy-5'-methylthioadenosine (MTA) is supplied as a crystalline solid. A stock solution may be made by dissolving the MTA in the solvent of choice, which should be purged with an inert gas. MTA is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of MTA in these solvents is approximately 20 mg/ml and 5 mg/ml, respectively.

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

Description

MTA is an intermediate in the generation of adenine and methionine that is produced by the decarboxylation of S-adenosylmethionine.¹ This nucleoside is a potent agonist of adenosine receptors (K_is = 0.15, 1.13, 13.9, and 0.68 μM for A₁, A_{2A}, A_{2B}, and A₃, respectively).² At higher concentrations, MTA inhibits several enzymes, including protein carboxymethyltransferase (K_i = 41 μM), S-adenosylhomocysteine hydrolase, SET methyltransferases, and spermidine and spermine synthases.^{1,3,4,5}

References

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- Kehraus, S., Gorzalka, S., Hallmen, C., *et al.* Novel amino acid derived natural products from the ascidian *Atrium robustum*: Identification and pharmacological characterization of a unique adenosine derivative. *J. Med. Chem.* **47(9)**, 2243-2255 (2004).
- Oliva, A., Galletti, P., Zappia, V., *et al.* Studies on substrate specificity of S-adenosylmethionine: Protein-carboxyl methyltransferase from calf brain. *Eur. J. Biochem.* **104(2)**, 595-602 (1980).
- Cole, P. A. Chemical probes for histone-modifying enzymes. *Nat. Chem. Biol.* **4(10)**, 590-597 (2008).
- Lee, S.H. and Cho, Y.D. Induction of apoptosis in leukemia U937 cells by 5'-deoxy-5'-methylthioadenosine, a potent inhibitor of protein carboxymethyltransferase. *Exp. Cell Res.* **240(2)**, 282-292 (1998).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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