

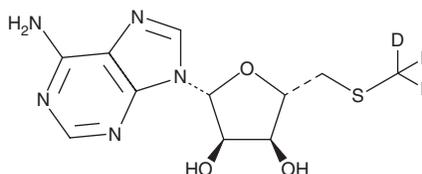
# PRODUCT INFORMATION



## 5'-Deoxy-5'-methylthioadenosine-d<sub>3</sub>

Item No. 27836

**CAS Registry No.:** 174838-38-1  
**Formal Name:** 7-[5-S-(methyl-d<sub>3</sub>)-5-thio-β-D-ribofuranosyl]-7H-purin-6-amine  
**Synonyms:** 5'-S-Methylthioadenosine-d<sub>3</sub>, MTA-d<sub>3</sub>, Vitamin L<sub>2</sub>-d<sub>3</sub>  
**MF:** C<sub>11</sub>H<sub>12</sub>D<sub>3</sub>N<sub>5</sub>O<sub>3</sub>S  
**FW:** 300.3  
**Chemical Purity:** ≥98% (5'-Deoxy-5'-methylthioadenosine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A 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-d<sub>3</sub> (MTA-d<sub>3</sub>) is intended for use as an internal standard for the quantification of MTA (Item No. 15593) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

MTA-d<sub>3</sub> is supplied as a solid. A stock solution may be made by dissolving the MTA-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. MTA-d<sub>3</sub> is soluble in the organic solvent dimethyl formamide. MTA-d<sub>3</sub> is slightly soluble in methanol and DMSO.

### Description

MTA is an intermediate in the generation of adenosine and methionine that is produced by the decarboxylation of S-adenosylmethionine.<sup>1</sup> This nucleoside is a potent agonist of adenosine receptors (K<sub>i</sub>s = 0.15, 1.13, 13.9, and 0.68 μM for A<sub>1</sub>, A<sub>2A</sub>, A<sub>2B</sub>, and A<sub>3</sub>, respectively).<sup>2</sup> At higher concentrations, MTA inhibits several enzymes, including protein carboxylmethyltransferase (K<sub>i</sub> = 41 μM), S-adenosylhomocysteine hydrolase, SET methyltransferases, and spermidine and spermine synthases.<sup>1,3-5</sup>

### References

- Huang, S. Histone methyltransferases, diet nutrients and tumour suppressors. *Nat. Rev. Cancer* **2**(6), 469-476 (2002).
- 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 carboxylmethyltransferase. *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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