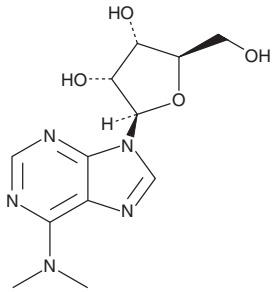
PRODUCT INFORMATION

N^6,N^6-Dimethyladenosine

Item No. 35348

CAS Registry No.:	2620-62-4
Synonyms:	6-N,N-Dimethyladenosine, 6-DMA, m^6_2A
MF:	$C_{12}H_{17}N_5O_4$
FW:	295.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 216, 274 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

N^6,N^6-Dimethyladenosine is supplied as a solid. A stock solution may be made by dissolving the N^6,N^6-dimethyladenosine in the solvent of choice, which should be purged with an inert gas. N^6,N^6-Dimethyladenosine is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of N^6,N^6-dimethyladenosine in these solvents is approximately 25 and 20 mg/ml, respectively. N^6,N^6-Dimethyladenosine is slightly soluble in ethanol.

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 N^6,N^6-dimethyladenosine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of N^6,N^6-dimethyladenosine in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

N^6,N^6-Dimethyladenosine is a modified nucleoside.[1] It has been found in tRNA isolated from *M. bovis*. Dimethylation of adjacent adenosine nucleosides ($m^6_2Am^6_2A$) is found in *E. coli* 16S rRNA and is important for the initiation of protein synthesis.[2] N^6,N^6-Dimethyladenosine inhibits the proliferation of L1210 leukemia cells *in vitro* (IC_{50} = 0.5 µg/ml) but does not have antitumor activity *in vivo*.[2] It is also a component of the antibiotic and protein synthesis inhibitor puromycin (Item No. 13884).

References

1. Chan, C.T.Y., Chionh, Y.H., Ho, C.-H., *et al.* Identification of *N^6*,*N^6*-dimethyladenosine in transfer RNA from *Mycobacterium bovis* Bacille Calmette-Guérin. *Molecules* **16(6)**, 5168-5181 (2011).
2. Poldermans, B., Van Buul, C.P.J.J., and Van Knippenberg, P.H. Studies on the function of two adjacent *N^6*,*N^6*-dimethyladenosines near the 3' end of 16 S ribosomal RNA of *Escherichia coli*. II. The effect of the absence of the methyl groups on initiation of protein biosynthesis. *J. Biol. Chem.* **254(18)**, 9090-9093 (1979).

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