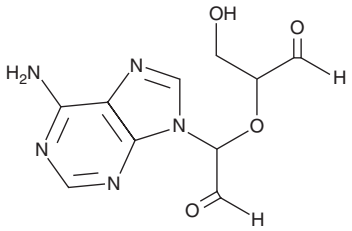
PRODUCT INFORMATION

Adenosine Dialdehyde

Item No. 15644

CAS Registry No.:	34240-05-6
Formal Name:	6-amino-α-(1-formyl-2-hydroxyethoxy)-9H-purine-9-acetaldehyde
MF:	$C_{10}H_{11}N_5O_4$
FW:	265.2
Purity:	≥90%
UV/Vis.:	λ_{max}: 259 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

Adenosine dialdehyde is supplied as a crystalline solid. A stock solution may be made by dissolving the adenosine dialdehyde in the solvent of choice, which should be purged with an inert gas. Adenosine dialdehyde is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of adenosine dialdehyde in these solvents is approximately 10 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 adenosine dialdehyde can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of adenosine dialdehyde in PBS, pH 7.2, is approximately 0.33 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Adenosine dialdehyde is an irreversible inhibitor of S-adenosylhomocysteine (SAH; Item Nos. 13603 | 9000372) hydrolase (IC_{50} = 40 nM), blocking the conversion of SAH to homocysteine and adenosine (Item No. 21232).[1,2] This reduces the amount of homocysteine that can be converted to methionine and, subsequently, S-adenosylmethionine, a substrate of methyltransferases. In this way, adenosine dialdehyde indirectly inhibits cellular methyltransferase activity.[3-5]

References

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2. O'Dea, R.F., Mirkin, B.L., Hogenkamp, H.P., *et al.* Effect of adenosine analogues on protein carboxylmethyltransferase, S-adenosylhomocysteine hydrolase, and ribonucleotide reductase activity in murine neuroblastoma cells. *Cancer Res.* **47(14)**, 3656-3661 (1987).
3. Dung, T.T.M., Yi, Y.-S., Heo, J., *et al.* Critical role of protein L-isoaspartyl methyltransferase in basic fibroblast growth factor-mediated neuronal cell differentiation. *BMB Rep.* **49(8)**, 437-442 (2016).
4. Huang, H.-M., Tam, M.F., Tam, T.-C.S., *et al.* Proteomic analysis of stable protein methylation in lymphoblastoid cells. *J. Biochem.* **132(5)**, 813-818 (2002).
5. Miranda, T.B., Cortez, C.C., Yoo, C.B., *et al.* DZNep is a global histone methylation inhibitor that reactivates developmental genes not silenced by DNA methylation. *Mol. Cancer. Ther.* **8(6)**, 1579-1588 (2009).

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