

5-Aza-2'-deoxycytidine

Product Number **A3656**

Storage at Room Temperature

Product Description

Molecular Formula: $C_8H_{12}N_4O_4$

Molecular Weight: 228.2

CAS Number: 2353-33-5

Melting Point: 177-182 °C; 191-193 °C¹

λ_{max} : 239 nm¹

Extinction Coefficient: $E^{mM} = 8.2$ (239 nm and pH 4.0)

5-aza-2'-deoxycytidine causes DNA demethylation or hemi-demethylation. DNA demethylation can regulate gene expression in cis by relaxing chromatin structure. This is detectable as an increased nuclease sensitivity. This remodeling of chromatin structure allows transcription factors to bind to the promoter regions, assembly of the transcription complex, and gene expression.^{2,3,4,5}

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is typically dissolved at 50 mg/ml in 50% acetic acid. This product is also soluble at 50 mg/ml in DMSO or 0.25 mg/ml in water.

Storage/Stability

Aqueous solutions of this product appear to be very unstable, probably by analogy to A 2385, aza-cytidine. We suggest preparing solution fresh for each use and storing solutions on ice until use within a few hours.

References

1. Winkley, M.W., and Robins, R.K., Direct glycosylation of 1,3,5-triazinones. A new approach to the synthesis of the nucleoside antibiotic 5-azacytidine (4-amino-1-beta-D-ribofuranosyl-1,3,5-triazin-2-one) and related derivatives.
2. J. Org. Chem., **35**, 491-495 (1970).
3. Chiurazzi, P., et al., Synergistic effect of histone hyperacetylation and DNA demethylation in the reactivation of the FMR1 gene. Hum. Mol. Genet., **8**, 2317-2323 (1999).
4. Slcack, A., et al., Feedback regulation of DNA methyltransferase gene expression by methylation. Eur. J. Biochem., **264**, 191-199 (1999).
5. Chen, R.Z., et al., DNA hypomethylation leads to elevated mutation rates. Nature, **395**, 89-93 (1998).
6. Whang, Y.E., et al., Inactivation of the tumor suppressor PTEN/MMAC1 in advanced human prostate cancer through loss of expression. Proc. Natl. Acad. Sci., USA **95**, 5246-5250 (1998).

MWM/SAG 11/08

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.