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Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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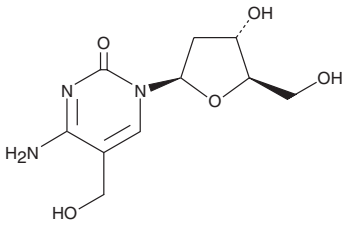
PRODUCT INFORMATION

5-(Hydroxymethyl)-2'-deoxycytidine

Item No. 18162

CAS Registry No.: 7226-77-9
Formal Name: 2'-deoxy-5-(hydroxymethyl)-cytidine
MF: $C_{10}H_{15}N_3O_5$
FW: 257.2
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 277 nm



Laboratory Procedures

For long term storage, we suggest that 5-(hydroxymethyl)-2'-deoxycytidine be stored as supplied at -20°C. It should be stable for at least two years.

5-(Hydroxymethyl)-2'-deoxycytidine is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-(hydroxymethyl)-2'-deoxycytidine in the solvent of choice. 5-(Hydroxymethyl)-2'-deoxycytidine is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of 5-(hydroxymethyl)-2'-deoxycytidine in these solvents is approximately 20 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 5-(hydroxymethyl)-2'-deoxycytidine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5-(hydroxymethyl)-2'-deoxycytidine in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DNA methylation occurs mainly at the 5'-position of cytosine rings (5-methylcytosine) and occurs almost exclusively in CpG islands. Another epigenetic modification in DNA has been recently identified that involves hydroxymethylation of this same base (5-hydroxymethylcytosine), which potentially offers another level of transcriptional control.[1] 5-(Hydroxymethyl)-2'-deoxycytidine is a modified pyrimidine that is capable of producing interstrand cross-links in double-stranded DNA and has been used to quantify DNA hydroxymethylation levels in biological samples.[2-4]

References

1. Song, C.-X., Szulwach, K.E., Fu, Y., *et al.* Selective chemical labeling reveals the genome-wide distribution of 5-hydroxymethylcytosine. *Nat. Biotechnol.* **29(1)**, 68-72 (2011).
2. Le, T., Kim, K.-P., Fan, G., *et al.* A sensitive mass-spectrometry method for simultaneous quantification of DNA methylation and hydroxymethylation levels in biological samples. *Anal. Biochem.* **412(2)**, 203-209 (2011).
3. Clark, T.A., Lu, X., Luong, K., *et al.* Enhanced 5-methylcytosine detection in single-molecule, real-time sequencing *via* Tet1 oxidation. *BMC Biol.* **11(4)**, 1-10 (2013).
4. Krais, A.M., Park, Y.J., Plass, C., *et al.* Determination of genomic 5-hydroxymethyl-2'-deoxycytidine in human DNA by capillary electrophoresis with laser induced fluorescence. *Epigenetics* **6(5)**, 560-565 (2011).

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