

Product Data Sheet

Product Name: 5-Methyl-dCTP

Cat. No.: GB20074

Chemical Properties

Cas. No.

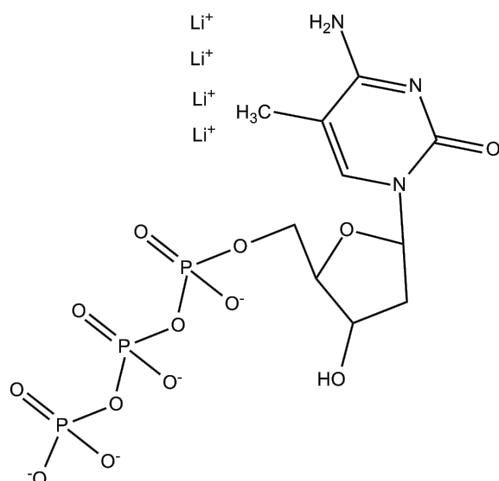
Formula $C_{10}H_{18}N_3O_{13}P_3$ (free acid) M.Wt 481.1 (free acid)

Solubility Storage Store at -20°C or below

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

5-Methyl-dCTP is a base modified deoxynucleotide. Methylation of the C-5 position of cytosines is a common and important epigenetic modification, with more than 4% of the cytosines present in the human genome reported to be methylated. This modification can be incorporated into DNA via the polymerase chain reaction (PCR) with 5-methyl-dCTP instead of dCTP. The ability to synthesize a defined, fully 5-methyl-dCTP-substituted DNA by PCR will be a valuable resource for a variety of applications including testing restriction endonucleases for methyl sensitivity and determining the specificity of 5-methyl-dCTP-dependent endonucleases. In addition, electroporation of 5-methyl-dCTP into living cells can also be incorporated into genomic DNA, and heritably alter cytosine methylation patterns and gene expression. References: 1. Kumar S, Chinnusamy V, Mohapatra T.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Epigenetics of Modified DNA Bases: 5-Methylcytosine and Beyond. *Frontiers in Genetics*, 2018, 9: 640. 2. Wong KK, McClelland M. PCR with 5-methyl-dCTP replacing dCTP. *Nucleic Acids Research*, 1991, 19(5): 1081-1085. 3. Lao VV, Herring JL, Kim CH, Darwanto A, Soto U, Sowers LC. Incorporation of 5-chlorocytosine into mammalian DNA results in heritable gene silencing and altered cytosine methylation patterns. *Carcinogenesis*, 2009, 30(5): 886-893.

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