DATA SHEET

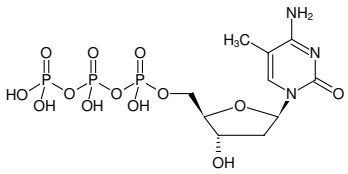
Jena Bioscience

5-Methyl-dCTP

5-mdCTP

5-Methyl-2'-deoxycytidine-5'-triphosphate, Sodium salt

Cat. No.	Amount
NU-1125S	10 µl (100 mM)
NU-1125L	5 x 10 µl (100 mM)



Structural formula of 5-Methyl-dCTP

For general laboratory use.

Please centrifuge briefly before opening (volume ≤2 ml).

Shipping: shipped on gel packs

Storage Conditions: store at -20 °C

Short term exposure (up to 1 week cumulative) to ambient temperature possible.

Shelf Life: 12 months after date of delivery

Molecular Formula: $C_{10}H_{18}N_3O_{13}P_3$ (free acid)

Molecular Weight: 481.18 g/mol (free acid)

Exact Mass: 481.01 g/mol (free acid)

CAS#: 22003-12-9

Purity: ≥ 95 % (HPLC)

Form: solution in water

Color: colorless to slightly yellow

Concentration: 100 mM - 110 mM

pH: 7.5 ±0.5

Spectroscopic Properties: λ_{max} 277 nm, ε 9.0 L mmol^{-1} cm^{-1} (Tris-HCl pH 7.5)

Applications:
Incorporation into DNA by
- PCR with *Taq* polymerase [in-house data, [1-2]]

Description:
5-methylated DNA probes can be used as methylation reference fragment [1-2] or for pull-down of 5-hmC binding proteins from cellular lysate[3].

Selected References:

[1] Szwagierczak *et al.* (2011) Characterization of PvuRts1I endonuclease as a tool to investigate genomic 5-hydroxymethylcytosine. *Nucl. Acids Res.* **39(12)**:5149.
[2] Szwagierczak *et al.* (2010) Sensitive enzymatic quantification of 5-hydroxymethylcytosine in genomic DNA. *Nucl. Acids Res.* **38(19)**:e181.
[3] Lafaye *et al.* (2014) DNA binding of the p21 repressor ZBTB2 is inhibited by cytosine hydroxymethylation. *Biochem. Biophys. Res. Commun.* **446**:341.

Kaito *et al.* (2001) Activation of the maternally preset program of apoptosis by microinjection of 5-aza-2'-deoxycytidine and 5-methyl-2'-deoxycytidine-5'-triphosphate in Xenopus laevis embryos. *Dev Growth Differ.* **43 (4)**:383.

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Song *et al.* (2015) Human dCTP pyrophosphatase 1 promotes breast cancer cell growth and stemness through the modulation on 5-methyl-dCTP metabolism and global hypomethylation. *Oncogenesis* **4**: e159.

Frauer *et al.* (2009) A versatile non-radioactive assay for DNA methyltransferase activity and DNA binding. *Nucleic Acids Research* **37 (3)**:e22.

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Ito *et al.* (1998) Systematic method to obtain novel genes that are regulated by mi transcription factor: impaired expression of granzyme B and tryptophan hydroxylase in mi/mi cultured mast cells. *Blood* **91 (9)**:3210.

Lefaucheur *et al.* (1998) Evidence for three adult fast myosin heavy chain isoforms in type II skeletal muscle fibers in pigs. *J. Anim. Sci.* **76 (6)**:1584.

Wong *et al.* (1997) A novel method for producing partial restriction digestion of DNA fragments by PCR with 5-methyl-CTP. *Nucleic Acids Res.* **25 (20)**:4169.

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Chen *et al.* (1993) Direct induction of DNA hypermethylation in sea urchin embryos by microinjection of 5-methyl dCTP stimulates early histone gene expression and leads to developmental arrest. *Dev Biol.* **155 (1)**:75.
[3] Lafaye *et al.* (2014) DNA binding of the p21 repressor ZBTB2 is inhibited by cytosine hydroxymethylation. *Biochem. Biophys. Res. Commun.* **446**:341.

Nelson *et al.* (1993) Restriction endonuclease cleavage of 5-methyl-deoxycytosine hemimethylated DNA at high enzyme-to-substrate ratios. *Nucl. Acid. Res.* **21 (3)**:681.