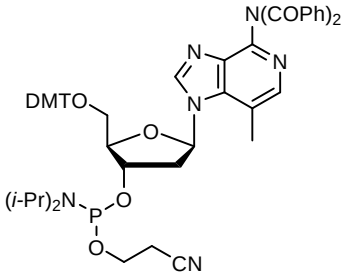
3-Deaza-3-methyl-dA CEP
Product No. BA 0212
Product Information



$C_{56}H_{59}N_6O_8P$
Mol. Wt.: 975.08

3-Deaza-3-methyl-dA has been shown to be a stable analog of N^3-methyladenine (3MeA) which is the major cytotoxic lesion formed in DNA by methylating agents. 3-Deaza-3-methyl-dA CEP (BA 0212) can be used to incorporate this important, stable analog into synthetic oligonucleotides.[1]

3MeA is unstable and is converted to an abasic site which has made rigorous proof of its role in cytotoxicity elusive. The use of 3-deaza-3-methyl-dA in oligonucleotides for replication assays has provided the most direct evidence to date showing that 3MeA is a significant block to two of the main replicases in eukaryotes.[1] These studies also showed that the Y-family polymerases are capable of bypassing the modified base *in vitro*.

The nucleoside 3-deaza-3-methyl-2'-deoxyadenosine (CA reg. no. 515815-12-0), which is fixed in the anti conformation, is also known.[2]

Coupling, cleavage, and deprotection: 3-Deaza-3-methyl-da CEP couples with greater than 95% efficiency (typically >97%) using the standard protocols recommended for popular synthesizers with a 15 minute coupling time. In our hands, shorter coupling times gave less efficient incorporation. Cleavage and deprotection may be accomplished using standard techniques e.g., concentrated ammonium hydroxide at 55 °C for 18 h.

References:

1. Plosky, B. S.; Frank, E. G.; Berry, D. A.; Vennall, G. P.; McDonald, J. P.; Woodgate, R. *Nucleic Acids Res.* **2008**, *36*, 2152-2162.

2. Irani, R. J.; SantaLucia, J., Jr., Nucleosides, Nucleotides, and Nucleic Acids, **2002**, *21*, 737-751.