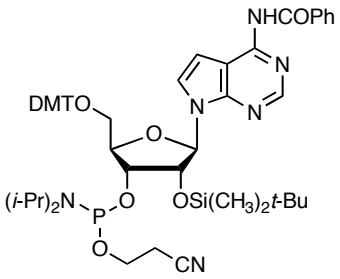
7-Deaza-A CEP (BA 0268)

Product Information



The N7 imidazole nitrogen of purine nucleosides is known to take part in non-Watson-Crick hydrogen bonding and in metal chelation. "Deleting" the N7 nitrogen by replacing it with a CH group is a useful modification that has been accomplished in DNA and RNA oligonucleotides using the phosphoramidites of 7-deaza-dA (2'-deoxytubercidin) and 7-deaza-A (tubercidin), respectively. Early work by Seela[1] involved 7-Deaza-dA CEP (our product BA 0001), which was useful in showing that N7 of dA is an important hydrogen bond acceptor site for the endodeoxyribonuclease *Eco*RI. For RNA work, we offer 7-Deaza-A CEP, also known as Tubercidin CEP or C^7A CEP (our product BA 0268). This phosphoramidite has been used for studies of the role of the N7 adenosine nitrogen in the structure and function of tRNA and ribozymes.[2,3]

Coupling, cleavage, and nucleobase deprotection: Please consult Fu and McLaughlin[2] for the use of this phosphoramidite. Standard coupling methods were used. Cleavage and nucleobase deprotection was accomplished with 3:1 concentrated ammonium hydroxide/ethanol for 6 h at 50 °C. Desilylation was performed with 1 M tetrabutylammonium fluoride in THF for 16 h at room temperature.

References:

(1) (a) Seela, F.; Kehne, A. *Biochemistry* **1987**, *26*, 2232-2238. (b) Seela, F.; Berg, H.; Rosemeyer, H. *Biochemistry* **1989**, *28*, 6193-6198.

(2) Fu, D.-J.; McLaughlin, L. W. *Biochemistry* **1992**, *31*, 10941-10949.

(3) Grasby, J. A.; Mersmann, K.; Singh, M.; Gait, M. J. *Biochemistry* **1995**, *34*, 4068-4076. This work involves a related phosphoramidite using 2'-*O*-triisopropylsilyl and N^6-(dimethylamino)methylidene protecting groups.