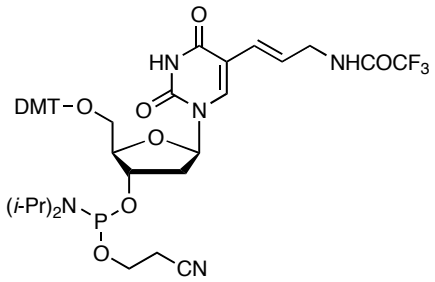
5-Aminoallyl-dU CEP
Product No. BA 0311
Product Information



$C_{44}H_{51}F_3N_5O_9P$
Mol. Wt.: 881.87

Allows the introduction of a 5-aminoallyl-dU residue into oligonucleotides for the purpose of post-synthetic labeling by acylation. Further, triplex-forming oligonucleotides (TFOs) containing this residue form triplexes that are similar in stability to those bearing unmodified residues.

Early work on the introduction of a 5-aminoallyl-dU amino modifier into oligonucleotides involved the methyl phosphoramidite.[1] 5-Aminoallyl-dU CEP, employing a 2-cyanoethyl phosphoramidite, was reported later.[2,3]

Williams and co-workers[3] studied the incorporation of 5-aminoallyl-dU residues into triplex-forming oligonucleotides (TFOs), where a single incorporation did not change the stability of the triplex vs. unmodified TFOs. Multiple incorporations led to a lower triplex stability. The pKa of the protonated form of the amino group of 5-aminoallyl-dU is expected to be 9.7 based on studies on the free nucleoside. Conformational studies on the nucleoside were also carried out.

> **Note:** We also offer 5-Aminoallyl-U CEP (BA 0269), the ribose version of this amine modifier, .

Use: Lermer, *et al.*,[2] suggest a coupling time of 10 min. Oligonucleotides containing 5-aminoallyl-dU residues were deprotected with concentrated ammonium hydroxide at 55 °C overnight. Williams and co-workers[3] used a phosphoramidite concentration of 1.5x normal. They also employed N^4-acetyl-dC phosphoramidite followed by deprotection with concentrated ammonium hydroxide at room temperature for 12 h.

In our hands, acetonitrile diluent at the concentration recommended by the synthesizer manufacturer was employed. A standard coupling time was sufficient to obtain high yields; extending to 15 minutes led to only a marginal improvement. Cleavage from the solid support was carried out using standard procedures. Deprotection was carried out using concentrated ammonium hydroxide at 55 °C for 16-18 h.

Literature:

1. Cook, A. F.; Vuocolo, E.; Brakel, C. L. *Nucleic Acids Res*. **1988**, *16*, 4077-4095.

2. Lermer, L.; Yoann, R.; Ting, R.; Perrin, D. M. *J. Am. Chem. Soc*. **2002**, *124*, 9960-9961. See especially the Supporting Information.

3. Brazier, J. A.; Shibata, T.; Townsley, J.; Taylor, B. F.; Frary, E.; Williams, N. H.; Williams, D. M. *Nucl. Acids Res*. **2005**, *33*, 1362-1371.