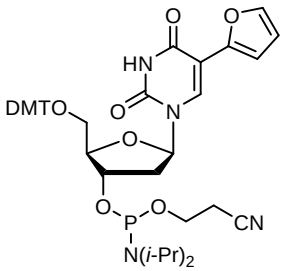
5-(2-Furyl)-dU CEP
Product No. BA 0346

Product Information



$C_{43}H_{49}N_4O_9P$
Mol. Wt.: 796.86

Small, fluorescent natural base mimic that can signal the presence of abasic sites in hybridized DNA oligonucleotides.

Tor and co-workers have reported on the preparation and photophysical characteristics of a number of small, fluorescent isosteric nucleosides that are capable of normal Watson-Crick base paring in unaltered duplexes.[1-6] These probes are useful tools for studying nucleic acid sequence, structure, dynamics and recognition. BA 0346 is the phosphoramidite of one such nucleoside.[1,2] This probe is an isosteric mimic of thymidine and has been shown to pair with adenine to form a stable duplex.

The fluorescence of the furano-pyrimidine is subject to emission wavelength and/or intensity variations, depending upon its micro-environment. For example, DNA probes constructed to contain BA 0346 at a selected sequence position show a significant emission enhancement when hybridization results in an opposing abasic residue as compared to an opposing adenine residue.[1] This property makes BA 0346 useful for the preparation of probes that are designed to detect sequence-specific depurination and depyrimidination.

Use: For oligonucleotide synthesis, employ acetonitrile diluent at the concentration recommended by the synthesizer manufacturer. Use standard coupling protocols; in our hands, extended coupling times were not required and coupling efficiencies of 99% could be obtained. Cleavage from the solid support may be carried out by standard procedures. Standard nucleobase deprotection conditions may be employed.

(1) Greco, N.J.; Tor, Y. *J. Am. Chem. Soc.* **2005**, *127* , 10784-10785.
(2) Greco, N.J.; Tor, Y. *Nature Protocols*, **2007**, *2*, 305-316.
(3) Greco, N.J.; Tor, Y. *Tetrahedron*, **2007**, *63*, 3515-3527.
(4) Sinkeldam, R.W.; Greco, N.J.; Tor, Y. *ChemBioChem.* **2008**, *9*, 706-709.
(5) Srivastan, S.G.; Tor, Y. *Tetrahedron*, **2007**, *63*, 3601-3607.
(6) Greco, N.J.; Sinkeldam, R.W.; Tor, Y. *Org. Lett.* **2009**, *11*, 1115-1118.