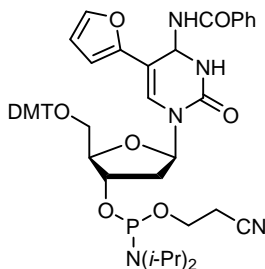


***N*⁴-Benzoyl-5-(furan-2-yl)-dC CEP
Product No. BA 0347**

Product Information



$C_{50}H_{54}N_5O_9P$
Mol. Wt.: 899.97

Small, fluorescent natural base mimic that can be used as an in vitro signal the presence of G, 8-oxoG, or T on a complementary strand 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 pairing in unaltered duplexes.¹⁻⁶ These probes are useful tools for studying nucleic acid sequence, structure, dynamics and recognition. BA 0347 is the phosphoramidite of one such nucleoside.^{1,2} This probe is a minimally disruptive fluorescent dC analog that can be used *in vitro* for analysis of oxidative damage caused by reactive oxygen species.⁶ When incorporated into an oligonucleotide and hybridized, BA 0347 can photophysically distinguish between G, 8-oxoG, or T on the complementary strand. When paired with 8-oxoG, which is the major mutagenic product of oxidative damage, significant emission quenching is observed. When paired with T, the transversion mutation resulting from failure to repair the oxidation, enhanced emission is observed from BA 0347.

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.

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- (3) Greco, N.J.; Tor, Y. *Tetrahedron*, **2007**, *63*, 3515-3527.
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- (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.