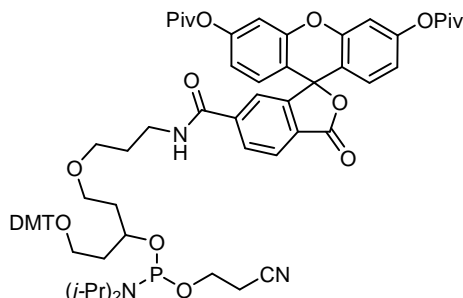


**Fluorescein III CEP (6-FAM III)**  
**Product No. BA 0334**  
*Product Information*



$C_{69}H_{80}N_3O_{14}P$   
Mol. Wt.: 1206.33

*Installs a 6-carboxyfluorescein internally or at the 5'-terminus of an oligonucleotide using a DMT-bearing phosphoramidite with a 1,3-diol framework.*

For the installation of fluorescein at the 5'-terminus of an oligonucleotide, the phosphoramidite "6-FAM" (5'-Fluorescein CEP, BA 0054), which does not bear a DMT group, is a popular choice. However, the lack of a trityl group precludes multiple additions or assaying the coupling step. Fluorescein II CEP ("6-FAM II", BA 0253), features the same tether length as 6-FAM, but includes a DMT group.<sup>1</sup> We now offer Fluorescein III CEP (BA 0334) which also includes the DMT group, but with a 1,3-diol framework. This extended framework serves two functions. First, the one carbon extension disfavors cyclic phosphate formation when the DMT group is removed, thereby minimizing label loss. Second, the 1,3-diol framework maintains the natural 3-carbon atom internucleotide phosphate distance, which diminishes duplex destabilization.<sup>2</sup>

**Coupling:** Couple using normal instrument protocols except the coupling time should be extended to 15 min. Typical coupling yields are ca. 95%. Trityl-on mode is recommended.

**Cleavage and nucleobase deprotection:** Use standard techniques. For the highest yields, prepare the oligo DMT-on and remove the trityl group after cleavage and deprotection. The DMT may also be used to facilitate cartridge purification with on-column detritylation, e.g. with Fluoro-Pak columns.

**Purification:** Standard methods are applicable. The DMT may also be used to facilitate cartridge purification with on-column detritylation, e.g. with Fluoro-Pak™ columns.

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## References

1. 5'-Fluorescein II CEP incorporates 6-carboxyfluorescein. The 5-carboxyfluorescein isomer of this product is also known and has been used with cartridge purification using OPC columns. See: Theisen, P.; McCollum, C.; Upadhy, K.; Jacobson, K.; Vu, H.; Andrus, A. *Tetrahedron Lett.* **1992**, *33*, 5033-5036.
2. Nelson, P.S.; Kent, M.; Muthini, S. *Nucleic Acids Res.* **1992**, *20*, 6253-6259.