

^{CNVK}—An ultrafast photo-crosslinker for DNA and RNA targets

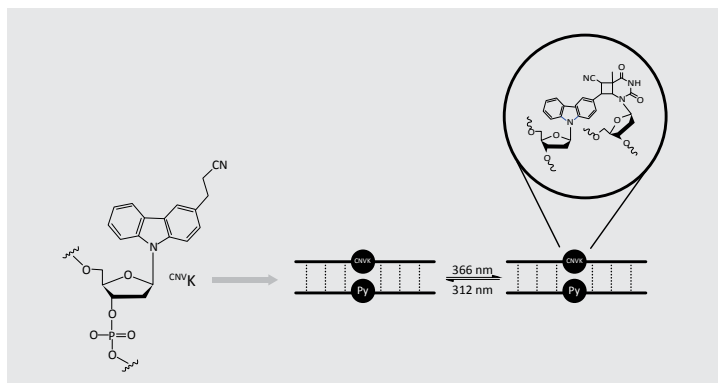
3-Cyanovinylcarbazole Phosphoramidite (^{CNVK})

The ability to selectively photo-crosslink a complementary target DNA or RNA strand has a myriad of uses, however, traditional procedures to do so—e.g. psoralen—require long, 20 minute irradiation times with a crosslinking efficiency that is approximately 70%.¹ Furthermore, the wavelength used for photo-reversal of the crosslink is typically 254 nm, which can lead to photoadducts such as a thymidine dimer.²

Professor Fujimoto from the Japan Advanced Institute of Science and Technology (JAIST) developed a novel photo-crosslinker —3-cyanovinylcarbazole nucleoside (^{CNVK})—that shows a remarkable ability to photo-crosslink pyrimidines of target strands. Irradiation at 366 nm of a duplex containing ^{CNVK} opposite thymidine results in 100% cross-linking in 1 second and quantitative crosslinking opposite cytosine in 25 seconds.³ The photo-reversal of the crosslink was accomplished with irradiation at 312 nm in 3 minutes. This facile reversal reaction is therefore accomplished with no damage to normal DNA. Further research has shown that ^{CNVK} can also be cross-linked to an adjacent RNA strand.⁴

Glen Research is now pleased to offer

^{CNVK} Phosphoramidite



References

1. Pielers, U., et al., *Nucleic Acids Res*, 1989, 17(22): p. 8967-78.
2. Douki, Thierry, et al. *Journal of Biological Chemistry*. 2000 Apr 21;275(16): p. 11678-85; K. Fujimoto, K. Konishi-Hiratsuka, T. Sakamoto, and Y. Yoshimura, *ChemBioChem*, 2010, 11, 1661-4.
3. Y. Yoshimura, and K. Fujimoto, *Org Lett*, 2008, 10, 3227-30.
4. Y. Yoshimura, T. Ohtake, H. Okada, and K. Fujimoto, *ChemBioChem*, 2009, 10, 1473-6.

For additional information: glenresearch.com/Technical/Crosslink.pdf;
Glen Report, 2011, 23(1); glenresearch.com/GlenReports/GR23-14.html.

Ordering Information

Product	Pack Size	Catalog Number
3-Cyanovinylcarbazole Phosphoramidite (^{CNVK})	50 μmole	10-4960-95
3-Cyanovinylcarbazole Phosphoramidite (^{CNVK})	100 μmole	10-4960-90
3-Cyanovinylcarbazole Phosphoramidite (^{CNVK})	0.25 gram	10-4960-02

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