

# <sup>CNVK</sup>—An ultrafast photo-crosslinker for DNA and RNA targets

## 3-Cyanovinylcarbazole Phosphoramidite (<sup>CNVK</sup>)

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%.<sup>1</sup> Furthermore, the wavelength used for photo-reversal of the crosslink is typically 254 nm, which can lead to photoadducts such as a thymidine dimer.<sup>2</sup>

Professor Fujimoto from the Japan Advanced Institute of Science and Technology (JAIST) developed a novel photo-crosslinker —3-cyanovinylcarbazole nucleoside (<sup>CNVK</sup>)—that shows a remarkable ability to photo-crosslink pyrimidines of target strands. Irradiation at 366 nm of a duplex containing <sup>CNVK</sup> opposite thymidine results in 100% cross-linking in 1 second and quantitative crosslinking opposite cytosine in 25 seconds.<sup>3</sup> 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 <sup>CNVK</sup> can also be cross-linked to an adjacent RNA strand.<sup>4</sup>

## Ordering Information

Product	Pack Size	Catalog Number
3-Cyanovinylcarbazole Phosphoramidite ( <sup>CNVK</sup> )	50 μmole	10-4960-95
3-Cyanovinylcarbazole Phosphoramidite ( <sup>CNVK</sup> )	100 μmole	10-4960-90
3-Cyanovinylcarbazole Phosphoramidite ( <sup>CNVK</sup> )	0.25 gram	10-4960-02

Phone: 703-437-6191

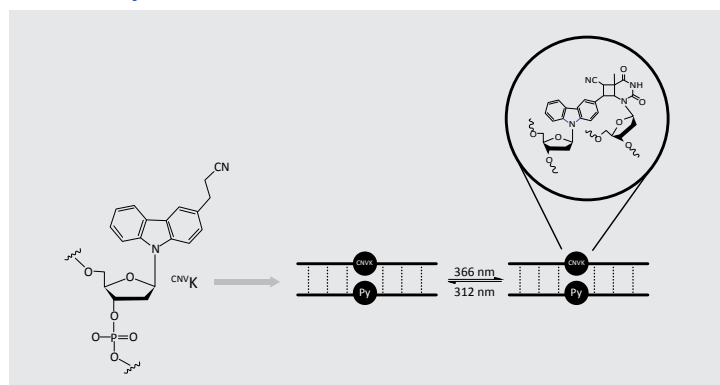
Order Inquiries: [orders@glenresearch.com](mailto:orders@glenresearch.com)

©2018 Glen Research. All rights reserved.  
For research use only. Not intended for animal or human therapeutic or diagnostic use.

[glenresearch.com](http://glenresearch.com)

## Glen Research is now pleased to offer

### <sup>CNVK</sup> Phosphoramidite



## References

1. Pieleis, 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](http://glenresearch.com/Technical/Crosslink.pdf);  
*Glen Report*, 2011, 23(1); [glenresearch.com/GlenReports/GR23-14.html](http://glenresearch.com/GlenReports/GR23-14.html).

