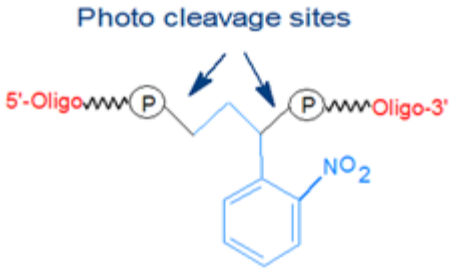
PC Linker (photocleavable)

Category	Photo Cleavable
Modification Code	PCL
Reference Catalog Number	26-6888
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	259.15



PC Linker (photocleavable)
[26-6888-XX]

PC Linker (ortho-nitrobenzyl-based photocleavable) is a non-nucleosidic moiety that can be used to link two nucleotide sequences through a short, UV photo-cleavable C3 spacer arm, this can be added at any position of the sequence. Photo-cleavage of PC Linker by UV light yields one 5'-phosphorylated oligo and one 3'-phosphorylated oligo.

The utility of PC Linker for photo-triggered hybridization applications was first demonstrated by Ordoukhanian and Taylor in 1995 (1). They incorporated PC Linker into the sugar-phosphate backbone of a DNA hairpin. Upon irradiation by UV light, photo-cleavage released a 5-phosphorylated 18-mer oligonucleotide having 9X greater hybridization affinity for a complementary DNA strand.

The use of PC Linker has also been explored in designing multi-functional single-stranded nucleotide conjugates for use in in vitro selection of novel DNA or RNA-based catalysts for bio-molecular or organic reactions (for example Diels-Alder) (2,3). PC Linker-modified oligonucleotides are the centerpiece of Bruker Daltonik's genoSNIP, a MALDI-TOF MS based assay system for SNP detection (4).

Cleavage Protocol
Cleavage occurs by irradiation with near-UV light (300-350 nm, complete cleavage occurs within 5 minutes. Try using a Black Ray XX-15 UV lamp (Ultraviolet Products Inc., San Gabriel, CA) at a distance of 15 cm (emission peak 365 nm, 300 nm cut-off, 1.1 mW intensity at~31 cm).

References
1. Olejnik, J., Krzymanska-Olejnik, E., Rothschild, K.J. Photocleavable aminotag phosphoramidites for 5'-termini DNA/RNA labeling. *Nucleic Acids Res.* (1998), **26**: 3572-3576.
2. Olejnik, J., Ludemann, H-C., Olejnik, E.K, Berkenkamp, S., Hillenkamp, F., Rothschild, K.J. Photocleavable peptide-DNA conjugates: synthesis and applications to DNA analysis using MALDI-MS. *Nucleic Acids Res.* (1999), **27**: 4626-4631.
3. Tang, X., Su, M., Yu, LiLi, Lv, C., Wang, J., Li, Z. Photomodulating RNA cleavage using photolabile circular antisense oligodeoxynucleotides.*Nucleic Acids Res.* (2002), **38**: 3848-3855.