



Product Specifications

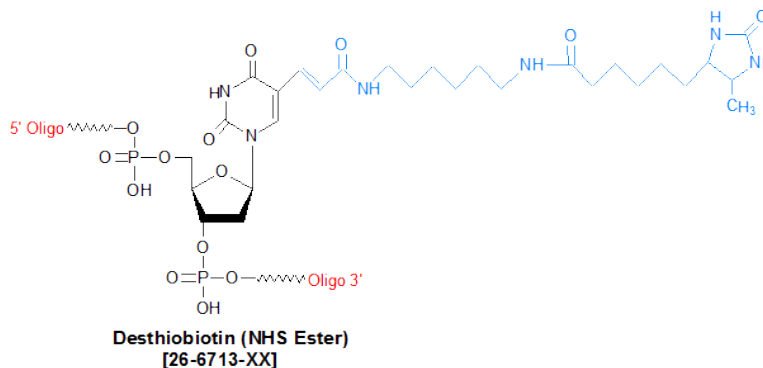
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2'-5' linked Oligos

Oligo Modifications

For research use only. Not for use in diagnostic procedures for clinical purposes.

Desthiobiotin NHS

Category	Affinity Ligands
Modification Code	DesBio
Reference Catalog Number	26-6713
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	214.26



Desthiobiotin modification is a post synthesis conjugation to a primary amino group thus an additional modification with an amino group is required. A C6 or C12 amino group can be placed at the 5' or for the 3' end a C3 or C7 amino and for internal positions an amino modified base is used, e.g Amino dT C6.

Desthiobiotin is a biotin derivative. Like biotin, desthiobiotin binds to streptavidin, but its binding affinity is considerably less (2×10^{-9} M) than that of biotin (4.0×10^{-14} M) (1). Consequently, oligonucleotides labeled with desthiobiotin can be easily displaced from streptavidin by biotin, thereby making recovery of the labeled oligo (for example, in affinity purification protocols) from a streptavidin-coated support a relatively simple process (2). Desthiobiotin-labeled oligos can also be conveniently eluted from streptavidin-coated supports by incubation in distilled water at 95C for 10 minutes (3). Gene Link recommends substitution of desthiobiotin for biotin for those cases where reversible capture of oligonucleotides is desirable. Note that since desthiobiotin is in the form of an NHS ester, an active primary amino group (such as Amino Linker C6) must first be incorporated into the oligonucleotide, to allow for subsequent conjugation to desthiobiotin NHS ester.

References

1. Green, N.M. Spectrophotometric determination of avidin and biotin. *Methods Enzymol.* (1970), **18A**: 418-424.
2. Hirsch, J.D., Eslamizar, L., Filanoski, B.J., Malekzadeh, N., Haugland, R.P., Beechem, J.M., Haugland, R.P. Easily reversible desthiobiotin binding to streptavidin, avidin, and other biotin-binding proteins: uses for protein labeling, detection, and isolation. *Anal. Biochem.* (2002), **308**: 343-357.
3. van Doorn, R., Slawiak, M., Szemes, M., Dulleman, A.M., Bonants, P., Kowalchuk, G.A., Schoen, C.D. Robust Definition and Identification of Multiple Oomycetes and Fungi in Environmental Samples by Using a Novel Cleavable Padlock Probe-Based Ligation Detection Assay. *Appl. Environ. Microbiol.* (2009), **75**: 4185-4193.