# 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.

Thio-2-dT (S2dT)

Category	Duplex Stability
Modification Code	S2dT
Reference Catalog Number	26-6537
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	320.26
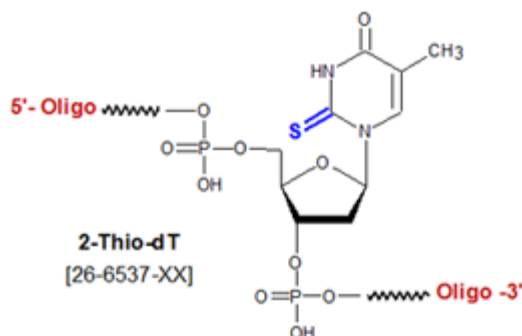
2-Thio-dT
[26-6537-XX]

2-Thio-deoxythymidine (2-Thio-dT) is a thiol-modified deoxyribonucleoside, and is typically used to modify oligos slated for DNA, or DNA-protein, structural studies. 2-thio-dT is often used (in conjunction with 2-amino-dA) to generate "selectively binding complementary (SBC) oligonucleotides". SBC oligos have a unique property: they can bind simultaneously to both the sense and anti-sense strands of a DNA or RNA duplex with high affinity, but show little or no affinity for other SBC oligos of any kind. SBC oligos can be used as probes to investigate secondary structures involving various branching moieties, and can be used as antisense oligos against mRNA targets having a lot of secondary structure. In such oligos, 2-thio-dT replaces T (and 2-amino-dA replaces A). 2-thio-dT base pairs well with dA, but has little affinity for 2-amino-dA. This property is reflected in Tm experiments. SBC 20 mers hybridized against a 20 mer DNA target (SBC-DNA duplex) had Tm values 10 degC higher than that of the corresponding DNA-DNA duplex. The corresponding SBC-SBC duplex had a Tm value 30 degC lower than the DNA-DNA duplex (1). **References**

1. Kutyavin, I.V., Rhinehart, R.L., Lukhtanov, E.A., Gorn, V.V., Meyer, R.B., Gamper, H.B. Oligonucleotides Containing 2-Aminoadenine and 2-Thiothymine Act as Selectively Binding Complementary Agents. *Biochemistry* (1996), **35**: 11170-11176.

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