



## Product Specifications

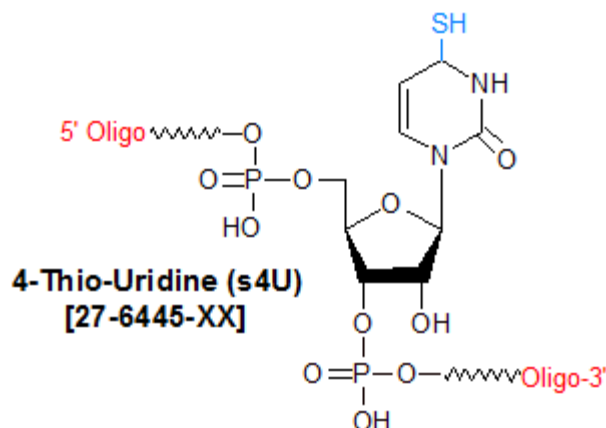
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2'-5' linked Oligos

## Oligo Modifications

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

### Thio-4-rU (s4U)

|                          |             |
|--------------------------|-------------|
| Category                 | Minor Bases |
| Modification Code        | s4U         |
| Reference Catalog Number | 27-6445     |
| 5 Prime                  | Y           |
| 3 Prime                  | Y           |
| Internal                 | Y           |
| Molecular Weight(mw)     | 322.22      |



4-Thio Uridine (s4U)) is a thiol-modified ribonucleoside, and is typically used to modify oligos slated for RNA, or RNA-protein, structural studies. A 4-thio-rU modified RNA pentamer was used to study the effect of this modification on codon-anticodon interaction when it is in the wobble position of tRNA (1). Because 4-thio-rU is photoreactive, 4-thio-rU modified RNA oligos have also been used as photoaffinity probes in the role of substrate analogs for characterizing the enzyme:substrate complex of tRNA:pseudouridine-5S synthase (2). 4-thio-rU modified oligos have also been used as modules for assembling U25 small nucleolar RNAs (U25snoRNA) by ligation. These snoRNAs were used in cross-linking studies to identify which proteins assembled on them in vivo in *Xenopus* oocytes (3). In addition, because the thiol group is chemically reactive, other moieties can be conjugated at the thiol group of 4-thio-rU. Such a strategy was used to introduce spin labels to 4-thio-rU-containing RNA oligos (4). **References**

1. Kumar, R.K., Davis, D.R. Synthesis and Studies on the Effect of 2-Thiouridine and 4-Thiouridine on Sugar Conformation and RNA Duplex Stability. *Nucleic Acids Res.* (1997), **25**: 1272-1280.
2. Becker, H.F., Grosjean, H., Fourrey, J-L. Chemical Synthesis of 4-Thiouridine-containing Substrate Analogues of tRNA:Pseudouridine-5S Synthase: Photocross-linking Studies. *Nucleosides and Nucleotides.* (1998), **17**: 2403-2416.
3. Cahill, N.M., Friend, K., Speckmann, W., Li, Z-H., Terns, R.M., Terns, M.P., Steitz, J.A. Site-specific cross-linking analyses reveal an asymmetric protein distribution for a box C/D snoRNP. *EMBO J.* (2002), **21**: 3816-3828.
4. Rublack, N., Nguyen, H., Appel, B., Springstube, D., Strohbach, D., Muller, S. Synthesis of Specifically Modified Oligonucleotides for Application in Structural and Functional Analysis of RNA. *J. Nuc. Acids* (2011), **2011**: 1-19.