# Cy5 disulfo NHS

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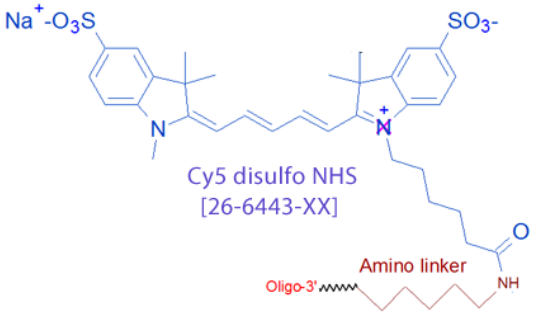
|---|---|
| Category | Fluorescent Dyes |
| Modification Code | Cy5-S2-N |
| Reference Catalog Number | 26-6443 |
| 5 Prime | Y |
| 3 Prime | Y |
| Internal | Y |
| Molecular Weight(mw) | 533.63 |




**Click here for a list of fluorophores.**

This modification is a post synthesis conjugation to a primary amino group thus an additional modification with an amino group is required. A C3, 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.

Yield of Post Synthesis NHS, Maleimide & Click Ligand Conjugation* Oligo Scale of Synthesis Yield, nmols 50 nmol 2 nmol 200 nmol 5 nmol 1 umol 16 nmol 2 umol 30 nmol 5 umol 75 nmol 10 umol 150 nmol 15 umol 225 nmol * The yield will be lower for oligos longer than 50mer. Click here for yield table of long oligos. * Click here for RNA Oligos scale of synthesis and yield. **NHS Ligand conjugation** requires a primary amino group. Gene Link offers a wide selection of amino modifications for 5', 3' and internal sites. Click here for a list of conjugation chemistry modifications. **Maleimide Ligand conjugation** requires a thiol group. Gene Link offers a wide selection of thiol modifications for 5', 3' and internal sites.

Click here for a list of conjugation chemistry modifications. **Click Chemistry Ligand conjugation** requires a corresponding Click modification; examples Alkyne:Azide, Azide:DBCO, BCN:Azide, BCN: TCO:Tetrazine. Gene Link offers a wide selection of click modifications for 5', 3' and internal sites. Click here for a list of click chemistry modifications.
The diSulfo Cy5 NHS Ester is a hydrophilic version of Cy5 due to the two sulfo groups. This version is particularly helpful when the standard hydrophobic Cy5 version is not appropriate for the desired application. All NHS ester derivative modifications are post synthesis for oligos and requires a primary amino group on the oligo for conjugation. The amino group can be placed at either the 5' or 3' ends an internally as well.
Cy5 can be used as a replacement for Alexa Fluor 647 Succinimidyl Ester, DyLight 650 NHS Ester, Colorada 645 XT A - NHS ester, Fluorescentred 647 reactive, CF647 Succinimidyl ester and PromoFluor-647, NHS ester for the required applications.

Near Infrared Fluorophore Spectral Data & Quencher Selection Guide

Fluorophore Name

Absorbance Max, nm +/-10

Emission Max, nm +/-10

Extinction Coefficient*

Color**

Quencher

**Cy5 650 665 250,000**

**IRDye 650 NHS 650 665 230,000**

**AZ647 NHS 655 680 191,800**

**AZ680 NHS 678 701 185,000**

**Cy5.5 684 710 198,000**

**IRDye 700 NHS 684 710 288,000**

**AZdye700 NHS 696 719 192,000**

**Atto 700 NHS 700 716 120,000**

**Atto 725 NHS 728 751 120,000**

**Atto 740 NHS 743 763 120,000**

**Cy7 NHS 740 773 199,000**

**IRDye 750 NHS 756 776 260,000**

**cy7.5 NHS 788 808 223,000**

**IRDye 800 NHS 795 819 240,000**

*** Extinction coefficient at λ (max) in cm-1M-1. ** Typical emission color seen through the eyepiece of a conventional fluorescence microscope with appropriate filters. Near-IR region. Human vision is insensitive to light beyond ~650 nm; it is not possible to view near-IR fluorescent dyes.**

**Click here for a list of fluorophores.**

**Click here for list of quenchers.**

**References**

**1. Livak, K.J., Flood, S.J.A., Marmaro, J., Giusti, W., Deetz, K. Oligonucleotides with fluorescent dyes at opposite ends provide a quenched probe system useful for detecting PCR product and nucleic acid hybridization.*PCR Methods Appl.* (1995), 4: 1-6.**

**2. Thelwell, N., Millington, S., Solinas, A., Booth, J., Brown, T. Mode of action and application of Scorpion primers to mutation detection. *Nucleic Acids Res.* (2000), 28: 3752-3761.**

**3. Tyagi, S., Kramer, F.R. Molecular beacons: probes that fluoresce upon hybridization. *Nat. Biotechnol.* (1996), 14: 303-308.**

**4. Stoecker, K., Dorninger, C., Daims, H., Wagner, M. Double Labeling of Oligonucleotide Probes for Fluorescence In Situ Hybridization (DOPE-FISH) Improves Signal Intensity and Increases rRNA Accessibility. *Appl. Environ. Microb..* (2010), 76: 922-926.**

**Reaction scheme for primary amine labelled oligos with NHS ester is shown in the figure below.**

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