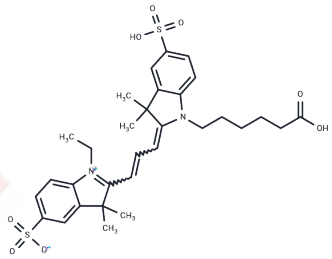
Data Sheet (Cat.No.T18945)

TargetMol

Sulfo-Cy3

Chemical Properties



CAS No. : 146368-13-0

Formula: C31H38N2O8S2

Molecular Weight: 630.78

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Cy3 (Sulfo-Cyanine3) is an orange-fluorescent label for nucleic acids and proteins (λex=554, λem=568).
Targets(IC50)	Others
Cell Research	1. Protein labeling Experimental steps: 1. Prepare CY3 dye solution: Dissolve CY3 in an appropriate solvent (such as DMSO or PBS), at a concentration of usually between 1-10 μM. 2. Reaction with antibodies or proteins: Incubate CY3 dye (10 mg/ml) with the target protein or antibody. Incubate normally at room temperature for 30-60 minutes to ensure the dye binds to the target molecule. 3. Purification: Use dialysis or filtration to remove unbound dyes to ensure that only labeled proteins are present in the sample. 4. Fluorescence measurement: Use a fluorescence microscope or spectrophotometer to detect labeled proteins by selecting the appropriate excitation wavelength (λex = 554 nm) and emission wavelength (λem = 568 nm). 2. Nucleic acid labeling Experimental steps: 1. Prepare CY3-labeled probes or primers: Synthesize probes or primers with CY3-labeled, usually using conventional labeling chemistry. 2. Hybridization: Under appropriate reaction conditions, mix the CY3-labeled probe with the target nucleic acid (such as DNA or RNA) and perform a hybridization reaction. 3. Fluorescence imaging: Use a fluorescence microscope or real-time PCR system to select the appropriate wavelength to detect CY3-labeled nucleic acid signals. 3. Double marking experiment: Experimental steps: 1. Label multiple targets: Use CY3 and other fluorescent markers (such as FITC, Cy5, etc.) to label different target molecules separately. 2. Confocal imaging: Observe multiple labeled samples through confocal microscope or multi-channel microscope to perform spatial positioning of target molecules. Notes: 1. Photostability: CY3 dye may experience photobleaching under high-intensity light, so it is necessary to optimize the exposure time and light source intensity of fluorescence

Cell Research	imaging experiments. 2. Solubility: CY3 has good solubility, but it is still necessary to avoid excessive concentration of dye solutions when used to prevent non-specific binding. 3. Cell permeability: CY3 has good cell permeability, but in some cases, it may be necessary to optimize experimental conditions, such as using penetrating reagents or performing cell membrane modification. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	H2O: 25 mg/mL (39.63 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5853 mL	7.9267 mL	15.8534 mL
5 mM	0.3171 mL	1.5853 mL	3.1707 mL
10 mM	0.1585 mL	0.7927 mL	1.5853 mL
50 mM	0.0317 mL	0.1585 mL	0.3171 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Koch LA,et al. Super-Resolved Fluorescence Lifetime Imaging of Single Cy3 Molecules and Quantum Dots Using Time-Correlated Single Photon Counting with a Four-Pixel Fiber Optic Array Camera. J Phys Chem A. 2025 Jan 9;129 (1):3-13.

Lee SH,et al. Atom-Efficient Synthesis of Trimethine Cyanines Using Formaldehyde as a Single-Carbon Source. Angew Chem Int Ed Engl. 2025 Jan 2;64(1):e202413121.

Sorour MI, et al. Molecular Dynamical and Quantum Mechanical Exploration of the Site-Specific Dynamics of Cy3 Dimers Internally Linked to dsDNA. J Phys Chem B. 2024 Aug 15;128(32):7750-7760.