Data Sheet (Cat.No.T18954)

TargetMol

CY7-SE

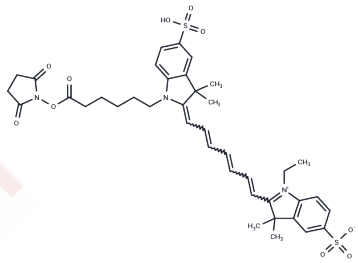
Chemical Properties

CAS No. : 477908-53-5

Formula: C39H45N3O10S2

Molecular Weight: 779.92

Storage: Keep away from direct sunlight
Store at -20°C
Actual storage temperature shall be subject to the COA.



Biological Description

Description	CY7-SE is a CY7-derived dye with excitation/emission wavelengths of 750/775 nm. CY7 (Sulfo-Cyanine7) is an amine-reactive near-infrared (NIR) fluorophore with excitation/emission wavelengths of 745/800 nm, suitable for in vivo imaging, flow cytometry, antibody labelling, and nucleic acid detection, among other applications.
Targets(IC50)	Others
In vitro	Reference for the usage of CY7-SE: 1. Protein Preparation It is recommended to prepare the protein (antibody) solution at a concentration of 2 mg/mL, with a pH of 8.5 ± 0.5. If the pH is below 8.0, adjust it using 1 M sodium bicarbonate. Note: If the protein concentration is below 2 mg/mL, the labeling efficiency will significantly decrease. For optimal labeling efficiency, the recommended final protein concentration range is 2–10 mg/mL. The protein buffer must not contain primary amines (e.g., Tris or glycine) or ammonium ions, as these will affect labeling efficiency. 2. Dye Preparation Dissolve CY7-SE dye in anhydrous DMSO to prepare a 10 mg/mL stock solution—Aliquot and store at -20°C or -80°C, protected from light. 3. Dye Quantity Calculation The required amount of CY7-SE dye for the labeling reaction depends on the quantity of protein to be labeled. The optimal molar ratio of CY7-SE dye to protein is approximately 10. Example: If the protein to be labeled is 500 μL of 2 mg/mL IgG (MW = 150,000), dissolve 1 mg of CY7-SE dye in 100 μL DMSO. The required volume of CY7-SE is 5.23 μL, calculated as follows: 1) mmol (IgG) = mg/mL (IgG) × mL (IgG) / MW (IgG) = 2 mg/mL × 0.5 mL / 150,000 mg/mmol = 6.7×10^{-6} mmol 2) mmol (Cy7-SE) = mmol (IgG) × 10 = 6.7×10^{-6} mmol × 10 = 6.7×10^{-5} mmol 3) μL (Cy7-SE) = mmol (Cy7-SE) × MW (Cy7-SE) / mg/μL (Cy7-SE) = 6.7×10^{-5} mmol × 779.92 mg/mmol / 0.01 mg/μL = 5.23 μL (Cy7-SE) 4. Labeling Reaction Slowly add the corresponding volume of 10 mg/mL Cy7-SE dye to 0.5 mL of the protein sample solution. Mix gently, then briefly centrifuge to collect the sample at the bottom of the reaction tube. Incubate the reaction tube in the dark at room temperature with

In vitro	gentle shaking for 60 minutes, inverting the tube several times every 10-15 minutes. 5. Protein Purification Purify the dye-protein conjugate using an appropriate method. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 100 mg/mL (128.22 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (4.23 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.2822 mL	6.4109 mL	12.8218 mL
5 mM	0.2564 mL	1.2822 mL	2.5644 mL
10 mM	0.1282 mL	0.6411 mL	1.2822 mL
50 mM	0.0256 mL	0.1282 mL	0.2564 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

Ptaszek M. Rational design of fluorophores for in vivo applications. Prog Mol Biol Transl Sci. 2013;113:59-108.
Shindy, H. A. (2017). Fundamentals in the chemistry of cyanine dyes: A review. Dyes and Pigments, 145, 505-513.

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