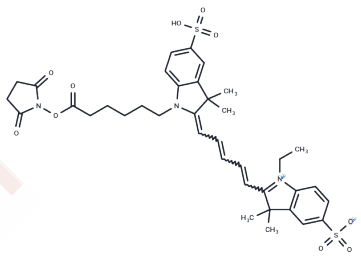
Data Sheet (Cat.No.T18949)

TargetMol

CY5-SE

Chemical Properties



CAS No. : 146368-14-1

Formula: C37H43N3O10S2

Molecular Weight: 753.88

Storage: Keep away from direct sunlight,Store at low temperature,Store under nitrogen
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	CY5-SE (Cy5 NHS Ester) is a reactive dye used to label amino groups in peptides, proteins and nucleotides. It needs to be stored away from light. Excitation wavelength (nm): 640, emission wavelength (nm): 664.
Targets(IC50)	Others
In vitro	1 mL of each 100 μg/mL SELP solution in 100 mM sodium bicarbonate buffer (pH 8.3) was mixed with 10 μL of 1.2 mg/mL Cy5 mono NHS-ester（CY5-SE） in 10% dimethyl sulfoxide and incubated for 2 h on ice. To quench the reaction, 50 μL of 1 M Tris-HCl (pH 8.0) was added to the reaction solution. To calculate molar concentrations of Cy5 and SELP in the Cy5-conjugated SELPs, reactions containing designated concentrations of pure SELP and BCA solution were conducted for 30 min at 37 °C. The absorbances of SELP and Cy5 at 562 and 633 nm were then obtained using the Microplate reader. [1]
Cell Research	I. Preparation of stock solution 1. Protein preparation 1) To achieve the best labeling effect, adjust the protein (antibody) concentration to 2 mg/mL. 2) Ensure that the pH of the protein solution is within the range of 8.5±0.5. If the pH value is lower than 8.0, 1 M sodium bicarbonate can be used to adjust. 3) When the protein concentration is lower than 2 mg/mL, the labeling efficiency will be significantly reduced. To optimize the labeling effect, it is recommended to maintain the protein concentration between 2-10 mg/mL. 4) The protein needs to be dissolved in a buffer that does not contain primary amines (such as Tris or glycine) and ammonium ions, otherwise it will interfere with the labeling reaction. 2. Dye preparation Use anhydrous DMSO to prepare a 10 mM stock solution of CY5-SE dye. Mix well with a glass rod or vortex. Note: It is recommended that the CY5-SE dye stock solution be stored at -20 ℃ or -80 ℃ in the dark after aliquoting. Before the subsequent labeling experiment, it is necessary to activate it with 500 μg/mL condensation solution (EDC hydrochloride T19947). 3. Calculation of the amount of dye working solution The amount of CY5-SE dye used depends on the amount of labeled protein. The optimal

Cell Research	molar ratio of CY5-SE dye to protein is about 10. Example: 500 μL, 2 mg/mL IgG (MW = 150,000) needs to be labeled. Assuming that 100 μL DMSO is used to dissolve 1 mg of CY dye, the calculation is as follows: 1) IgG (mmol) = IgG (mg/mL) ×IgG (mL) / IgG (MW) =2 mg/mL×0.5 mL / 150000 mg/mmol= 6.7×10^6 mmol 2) CY5-SE (mmol) = IgG (mmol) ×10 =6.7×10^6 mmol×10 = 6.7×10^5 mmol 3) CY5-SE (μL) = CY5-SE(mmol)×CY5-SE(MW)/mg/CY5-SE (μL) = 6.7×10^5 mmol× 753.88.06 g/mol / 0.01 mg/μL II. Labeling reaction 1) Take the calculated amount of freshly prepared 10 mM CY5-SE dye stock solution (approximately 10 μL) and add 50 μL of 500 μg/mL condensation solution for activation. Slowly add this mixture to 0.5 mL of protein sample solution, gently mix and briefly centrifuge to allow the sample to sink to the bottom of the reaction tube. Avoid vigorous shaking to prevent protein denaturation or inactivation. 2) Place the reaction tube in a dark environment and incubate at room temperature with gentle shaking for 60 minutes. Gently flip the reaction tube several times every 10-15 minutes to ensure adequate mixing and improve labeling efficiency. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	H2O: 2 mg/mL (2.65 mM),Sonication is recommended. DMSO: 20 mg/mL (26.53 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: 2 mg/mL (2.65 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	1.3265 mL	6.6324 mL	13.2647 mL
5 mM	0.2653 mL	1.3265 mL	2.6529 mL
10 mM	0.1326 mL	0.6632 mL	1.3265 mL
50 mM	0.0265 mL	0.1326 mL	0.2653 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

Jeon HY, et al. Array-Based High-Throughput Analysis of Silk-Elastinlike Protein Polymer Degradation and C-Peptide Release by Proteases. Anal Chem. 2016 May 17;88(10):5398-405.

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