Data Sheet (Cat.No.TD0087)

TargetMol

Sulfo-Cy5.5

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Keep away from direct sunlight,Keep away from moisture,Store at low temperature
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	Sulfo-Cy5.5 is a near-infrared fluorescent dye (Ex=673 nm, Em=707 nm) that can be used to label biomolecules such as peptides, proteins, and oligonucleotides [2].
Targets(IC50)	Others
In vitro	1. Solution preparation 1. Preparation of mother solution: Use anhydrous DMSO to prepare a 10 mM stock solution of SμLfo-Cy5.5 dye. Mix well with a glass rod or vortex. Note: It is recommended that the SμLfo-Cy5.5 dye stock solution be stored at -20 ℃ or -80 ℃ in the dark after aliquoting. Before subsequent labeling experiments, it needs to be activated with 500 μg/mL condensation solution (EDC hydrochloride T19947). 2. Preparation of working solution: Calculation of dye working solution dosage: The amount of SμLfo-Cy5.5 dye used is determined by the amount of labeled protein. The optimal molar ratio of SμLfo-Cy5.5 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) SμLfo-Cy5.5 (mmol) = IgG (mmol) × 10 = 6.7 × 10^6 mmol × 10 = 6.7 × 10^5 mmol 3) SμLfo-Cy5.5 (μL) = SμLfo-Cy5.5 (mmol) × SμLfo-Cy5.5 (MW) / mg / SμLfo-Cy5.5 (μL) = 6.7 × 10^5 mmol × 917.05 g/mol / 0.01 mg/μL II. Sample preparation 1. Protein preparation 1) To achieve the best labeling effect, the protein (antibody) concentration needs to be adjusted 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, it can be adjusted with 1 M sodium bicarbonate. 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 that the protein concentration be maintained 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.

In vitro	III. Operation steps 1. Take the calculated amount of freshly prepared 10 mM SμLfo-Cy5.5 dye master solution (about 10 μL) and add 50 μL 500 μg/mL condensation solution for activation. Slowly add this mixture to 0.5 mL of protein sample solution, gently mix and centrifuge briefly 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: 50 mg/mL,Sonication is recommended. DMSO: 50 mg/mL,Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

Goryunova MS, et al. Rolling circle amplification with fluorescently labeled dUTP-balancing the yield and degree of labeling. Anal Bioanal Chem. 2021 Jun;413(14):3737-3748.

Zhu S, et al. Visualizing cancer and response to therapy in vivo using Cy5.5-labeled factor VIIa and anti-tissue factor antibody. J Drug Target. 2015 Apr;23(3):257-65.

Lim B, et al. A Unique Recombinant Fluoroprobe Targeting Activated Platelets Allows In Vivo Detection of Arterial Thrombosis and Pulmonary Embolism Using a Novel Three-Dimensional Fluorescence Emission Computed Tomography (FLECT) Technology. Theranostics. 2017 Feb 26;7(5):1047-1061.