

Cyanine 3.5 maleimide chloride

Chemical Properties

CAS No. : 3077081-59-2

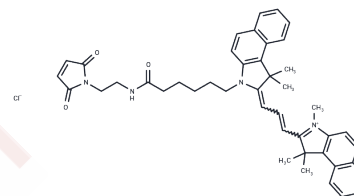
Formula: C₄₄H₄₇ClN₄O₃

Molecular Weight: 715.32

Keep away from direct sunlight

Storage: 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	Cyanine3.5 maleimide chloride is a type of CY dye, where CY stands for cyanine, a compound with two nitrogen atoms linked by an odd number of methine units. Cyanine compounds are known for their long wavelengths, adjustable absorption and emission, high extinction coefficients, good water solubility, and relatively straightforward synthesis. CY series dyes are frequently used for labeling proteins, antibodies, and small molecules. Protein and antibody labeling can be achieved through a simple mixing reaction. Below, we outline a method for labeling proteins and antibodies, which may serve as a useful reference.
Targets(IC50)	Others
In vitro	<p>Preparation of Stock Solution: 1. Protein Preparation: To achieve optimal labeling, prepare protein (antibody) at a concentration of 2 mg/mL. 1) Ensure the protein solution's pH is 8.5±0.5; if below 8.0, adjust with 1 M sodium bicarbonate. 2) If protein concentration is below 2 mg/mL, labeling efficiency drops significantly; optimal protein concentration is recommended to be between 2-10 mg/mL. 2. Dye Preparation: Dilute CY dye with anhydrous DMSO to create a 10 mM stock solution, mixing thoroughly via glass pipette or vortex. Note: Store CY stock solution in aliquots at -20 °C or -80 °C, away from light. 3. Calculation of Dye Working Solution: The amount of CY dye required for labeling depends on protein amount; the optimal molar ratio of CY dye to protein is approximately 10. Example: For 500 µL of 2 mg/mL IgG (MW=150,000), dissolve 1 mg CY dye in 100 µL DMSO, requiring 3.95 µL CY dye. Calculations (using CY3-NHS ester as an example): 1) mmol (IgG) = 2 mg/mL × 0.5 mL / 150,000 mg/mmol = 6.7×10⁻⁶ mmol 2) mmol (CY3-NHS ester) = 6.7×10⁻⁶ mmol × 10 = 6.7×10⁻⁵ mmol 3) µL (CY3-NHS ester) = 6.7 ×10⁻⁵ mmol × 590.15 mg/mmol / 0.01 mg/µL = 3.95 µL (CY3-NHS ester). Usage Method: 1. Labeling Reaction: 1) Slowly add freshly prepared CY dye (10 mg/mL) to 0.5 mL protein solution, mix gently, then briefly centrifuge to collect the sample at the tube's bottom; avoid vigorous mixing to prevent protein denaturation. 2) Incubate the reaction tube in the dark at room temperature, gently shaking for 60 minutes, inverting the tube every 10-15 minutes to mix reagents and enhance labeling efficiency. 2. Protein Purification and Desalting: Use a SepHадex G-25 column to purify dye-protein conjugates. 1) Prepare SepHадex G-25 column as per the manufacturer's instructions. 2) Load the reaction mixture onto the column. 3) When the sample reaches the top of the resin, immediately add PBS (pH 7.2-7.4). 4) Add more PBS (pH 7.2-7.4) to complete column purification, collecting fractions containing desired dye-protein conjugates.</p>

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In vitro	<p>Optional: If the protein lacks free cysteines, use reducing agents like DTT or TCEP to reduce disulfide bonds to free thiol groups. When using DTT, remove free DTT through dialysis before conjugating maleimide dyes with the protein.</p> <p>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.</p>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.398 mL	6.9899 mL	13.9798 mL
5 mM	0.2796 mL	1.398 mL	2.796 mL
10 mM	0.1398 mL	0.699 mL	1.398 mL
50 mM	0.028 mL	0.1398 mL	0.2796 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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