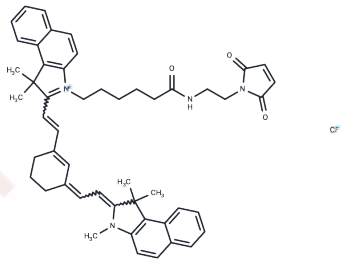
Data Sheet (Cat.No.T86128)

TargetMol

Cy7.5 maleimide

Chemical Properties



CAS No. : 2270866-73-2

Formula: C51H55ClN4O3

Molecular Weight: 807.46

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	Cy7.5 maleimide, a CY dye (short for Cyanine), consists of two nitrogen atoms connected by an odd number of methyl units. Cyanine compounds are characterized by long wavelength, adjustable absorption and emission, high extinction coefficient, good water solubility, and relatively simple synthesis [1]. CY dyes are often used for labeling proteins, antibodies, and small molecular compounds. For labeling protein antibodies, the combination can be completed through a simple mixing reaction. Below, we introduce the labeling method of protein antibody labeling, which has certain reference significance [2].
Targets(IC50)	Others
In vitro	To prepare a protein solution for optimal labeling, maintain the protein (antibody) concentration at 2 mg/mL. Ensure the solution has a pH of 8.5±0.5, and adjust with 1 M sodium bicarbonate if the pH falls below 8.0. For efficient labeling, use a final protein concentration between 2-10 mg/mL. The protein should be in a buffer free of primary amines (such as Tris or glycine) and ammonium ions to avoid affecting labeling efficiency. In preparing the dye, dilute CY dye in anhydrous DMSO to create a 10 mM stock solution, mixing thoroughly via vortex or glass tube. It is recommended to aliquot and store the CY solution at -20°C or -80°C away from light. The amount of CY dye needed for the labeling reaction depends on the protein amount, aiming for an optimal molar ratio of about 10 between CY dye and protein. For example, to label 500 µL of 2 mg/mL IgG (MW=150,000), dissolve 1 mg of CY dye in 100 µL of DMSO, which requires 3.95 µL of CY dye, calculated as follows (using CY3-NHS ester as the example): 1) mmol (IgG) = 2 mg/mL × 0.5 mL / 150,000 mg/mmol = 6.7×10^-6 mmol 2) mmol (CY3-NHS ester) = mmol (IgG) × 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). For the labeling reaction, gently add the calculated volume of freshly prepared 10 mg/mL CY dye to 0.5 mL of the protein sample solution, mix gently, and briefly centrifuge to collect the sample at the bottom of the reaction tube. Avoid vigorous mixing to prevent protein denaturation. Incubate the reaction tube in the dark at room temperature for 60 minutes, gently inverting the tube every 10-15 minutes to ensure complete mixing and improve labeling efficiency. For protein purification and desalting, use a Sephadex G-25 column following the manufacturer's instructions. Load the reaction mixture onto the column, and when it reaches just below the resin surface, add PBS (pH 7.2-7.4). Complete the column purification by further adding PBS to collect fractions containing the desired dye-protein conjugates.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.2385 mL	6.1923 mL	12.3845 mL
5 mM	0.2477 mL	1.2385 mL	2.4769 mL
10 mM	0.1238 mL	0.6192 mL	1.2385 mL
50 mM	0.0248 mL	0.1238 mL	0.2477 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.