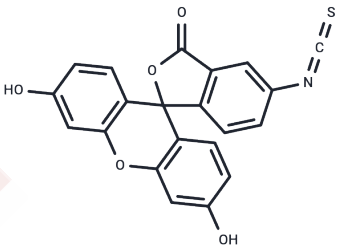
Data Sheet (Cat.No.T15284)

TargetMol

FITC

Chemical Properties



CAS No. : 3326-32-7

Formula: C21H11NO5S

Molecular Weight: 389.38

Storage: Keep away from direct sunlight
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	FITC is a green fluorescein derivative. FITC is often used to label biological macromolecules such as antibodies and proteins. FITC can also be used to label nucleic acids. FITC can be used as a fluorescent probe to detect cell viability, cell apoptosis, etc. FITC showed a maximum excitation wavelength of 494 nm and yellow-green fluorescence at a maximum emission wavelength of 520 nm.
Targets(IC50)	Others
Cell Research	I. Amine labeling 1. Binding: Dilute FITC in an appropriate solvent (usually dimethylsulfonamide DMSO) and mix it with the target biomolecule solution. The reaction is usually carried out under slightly alkaline conditions (pH 8.0-9.0) to ensure effective binding of FITC. 2. Incubation: Incubate the mixture at room temperature or 4°C for 1-2 hours. Since FITC is light-sensitive, it needs to be protected from light. 3. Purification: After the reaction is completed, excess FITC is removed by purification techniques such as dialysis and gel filtration to obtain labeled biomolecules. II. Cell imaging 1. Cell staining: Apply FITC-labeled antibodies or proteins to cells or tissues and incubate for a certain period of time (usually 30 minutes to 1 hour) at room temperature or 4°C. 2. Fluorescence microscopy: After washing away unbound antibodies, use a fluorescence microscope to observe cells or tissues. FITC can be excited at a wavelength of about 495 nm and emit at a wavelength of 519 nm. III. pH and Cu2+ sensitivity 1. pH sensitivity: When FITC-labeled molecules are placed in solutions of different pH values, the fluorescence intensity will change with the change of pH and can be quantitatively measured. 2. Cu2+ detection: The fluorescence of FITC is also affected by Cu2+, so it can be used to determine the concentration of Cu2+ in the sample by observing the change of fluorescence intensity. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 250 mg/mL (642.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5682 mL	12.8409 mL	25.6819 mL
5 mM	0.5136 mL	2.5682 mL	5.1364 mL
10 mM	0.2568 mL	1.2841 mL	2.5682 mL
50 mM	0.0514 mL	0.2568 mL	0.5136 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

Cao J, et al. Three-dimensional cellulose acetate nanofiber aerogels: A novel platform for ratiometric fluorescence sensing of volatile amines in aquatic products. Carbohydr Polym. 2025 Apr 1;353:123275.
Chen W, Cao P, Liu Y, et al. Structural basis for directional chitin biosynthesis. Nature. 2022: 1-7.
You H,et al. Ratiometric fluorescent detection of protease activity in foods based on microwave-assisted synthesized casein-directed gold nanoclusters. Food Chem. 2025 Jan 27;474:143078.
Ibrahim D,et al. Protective Role of Nano-encapsulated Bifidobacterium breve, Bacilllus coagulans, and Lactobacillus plantarum in Colitis Model: Insights Toward Propagation of Short-Chain Fatty Acids and Reduction of Exaggerated Inflammatory and Oxidative Response. Probiotics Antimicrob Proteins. 2025 Feb 3.

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