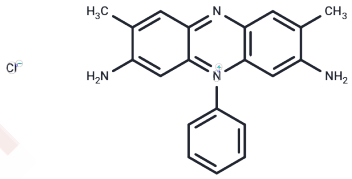
Data Sheet (Cat.No.TD0103)

TargetMol

Safranin O

Chemical Properties



CAS No. : 477-73-6

Formula: C20H19ClN4

Molecular Weight: 350.85

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	Safranin O (Basic red 2) stains the lignified, embolic and keratinized parts of the plant, as well as chromatin and chromosomes in the nucleus. Safranin O is commonly used for the detection of cartilage, mucin and mast cell granules.
Targets(IC50)	Others,Antibacterial
In vitro	Instructions 1. Solution preparation: Dissolve DEAC, SE in anhydrous dimethyl sulfoxide (DMSO) to prepare a stock solution of the required concentration. The recommended stock solution concentration is 10 mM for subsequent dilution. 2. Labeling process: 1) Dissolve the biomolecule to be labeled (such as protein or peptide) in an appropriate amine-free buffer (such as carbonate buffer, pH 8.3). 2) Add an appropriate amount of DEAC, SE stock solution to the above solution, usually reacting at a dye to biomolecule molar ratio of 5:1 to 20:1. 3) Incubate at room temperature in the dark for 30 minutes to 1 hour to ensure sufficient reaction. 3. Purification: After the reaction is completed, use an appropriate purification method (such as gel filtration, dialysis or high-performance liquid chromatography) to remove unreacted dye. 4. Detection: Use a fluorescence spectrometer or fluorescence microscope for detection. The excitation wavelength of DEAC, SE is about 355 nm and the emission wavelength is about 445 nm. Notes: 1) Wear gloves during operation to avoid contact between skin or mucous membrane and reagent. 2) Avoid light exposure during incubation and storage to prevent fluorescence quenching. 3) After staining, fluorescence detection and analysis should be performed immediately. The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands.

Solubility Information

Solubility	DMSO: 20 mg/mL (57 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 2 mg/mL (5.7 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	2.8502 mL	14.2511 mL	28.5022 mL
5 mM	0.570 mL	2.8502 mL	5.7004 mL
10 mM	0.285 mL	1.4251 mL	2.8502 mL
50 mM	0.057 mL	0.285 mL	0.570 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

Menarim BC,et aL. Fetal Cartilage Progenitor Cells in the Repair of Osteochondral Defects. JB JS Open Access. 2025 Jan 15;10(1):e24.00043.

Velot É, Guibert M, Koufany M, Bianchi A. Intra-articular injection of inorganic pyrophosphate improves IL-1β-induced cartilage damage in rat model of knee osteoarthritis in vivo. Osteoarthr Cartil Open. 2024 Dec 14;7(1): 100560.

Vinod E,et al. Comparative assessment of chondral defect repair using human bone marrow- and adipose tissue-derived mesenchymal stem cells, adult and foetal articular cartilage-derived chondrocytes, and chondroprogenitors: an ex-vivo model. Biotechnol Lett. 2025 Jan 8;47(1):17. doi: 10.1007/s10529-024-03558-0. PMID: 39775982.