

Product Data Sheet

Product Name: Lucifer Yellow CH

Cat. No.: GC44089

Chemical Properties

Cas. No. 67769-47-5

Chemical Name 6-amino-2-[(hydrazinylcarbonyl)amino]-2,3-dihydro-1,3-dioxo-1H-benz[de]isoquinoline-5,8-disulfonic acid, dilithium salt

SMILES O=C(C1=CC(S([O-]))(=O)=O)=C(N)C2=C1C3=CC(S([O-]))(=O)=O=C2)N(NC(NN)=O)C3=O.[Li+].[Li+]

Formula C₁₃H₉N₅O₉S₂•2Li

M.Wt 457.2

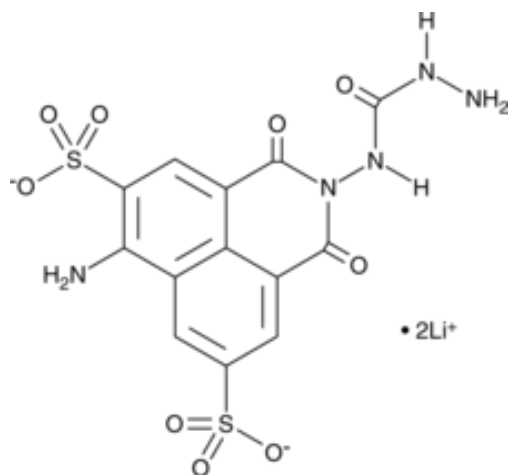
Solubility 1mg/mL in water

Storage Store at -20°C, protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

This protocol provides a guide only and should be modified to suit your specific needs.

1. Preparation of staining solution

(1) Preparation of storage solution: Dissolve 1mg of Lucifer Yellow CH in 1mL of ddH₂O to prepare a

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1mg/mL storage solution.

Note: Store unused storage solution at -20°C or -80°C away from light and avoid repeated freezing and thawing.

(2) Prepare the working solution: dilute the stock solution with a suitable buffer (such as preheated serum-free cell culture medium) to prepare a 0.05-0.1% Lucifer Yellow CH working solution.

Note: Please adjust the working solution concentration according to the actual situation and prepare it before use.

2. Cell Staining

Suspension cells: Collect cells by centrifugation, discard the supernatant, and wash twice with PBS, 5 minutes each time.

Adherent cells: Wash twice with PBS, add trypsin to digest the cells, and centrifuge at 1000g for 3-5 minutes after digestion.

(1) Add 1 mL of Lucifer Yellow CH working solution to the collected cells and incubate at room temperature for 5-30 minutes.

(2) Centrifuge at 400g, 4°C for 3-4 minutes and discard the supernatant.

(3) Wash twice with PBS, 5 minutes each time.

(4) Resuspend the cells in 1mL of serum-free medium or PBS and examine under a fluorescence microscope or flow cytometer.

Notes :

1. Fluorescent dyes all have quenching problems. Please try to avoid light to slow down fluorescence quenching

2. For your safety and health, please wear a lab coat and disposable gloves when operating.

Background

Lucifer Yellow CH is a water-soluble, high-intensity fluorescent dye with maximum excitation/emission

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at 430nm/540nm, respectively. Lucifer Yellow CH contains a carbodihydrazide (CH) group that can covalently bind to surrounding biomolecules during aldehyde fixation. Lucifer Yellow CH is impermeable to cell membranes at physiological pH and can be loaded into living cells by microinjection, pinocytosis, scraping, or ATP-induced permeabilization. Lucifer Yellow CH can be used as a biological tracer to label neural cells, monitor neuronal branching, regeneration, gap junction detection and characterization, and selective ablation of cells [1-5].

References:

- [1] Stewart WW. Functional connections between cells as revealed by dye-coupling with a highly fluorescent naphthalimide tracer. *Cell*. 1978 Jul;14(3):741-59.
- [2] Klein M, et al. Transport of lucifer yellow CH into plant vacuoles--evidence for direct energization of a sulphonated substance and implications for the design of new molecular probes. *FEBS Lett*. 1997 Dec 22;420(1):86-92.
- [3] Takeuchi K, et al. Effect of superoxide derived from lucifer yellow CH on voltage-gated currents of mouse taste bud cells. *Chem Senses*. 2008 Jun;33(5):425-32.
- [4] Sun Y, Leong N T, Jiang T, et al. Switch-like Arp2/3 activation upon WASP and WIP recruitment to an apparent threshold level by multivalent linker proteins in vivo[J]. *Elife*, 2017, 6: e29140.
- [5] Zhang Y, Hou M C, Li J J, et al. Cardiac β -adrenergic receptor activation mediates distinct and cell type-dependent changes in the expression and distribution of connexin 43[J]. *Journal of Cellular and Molecular Medicine*, 2020, 24(15): 8505-8517.

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