

Product Data Sheet

Product Name: DiD
Cat. No.: GC80362

Chemical Properties

Cas. No. 75539-51-4

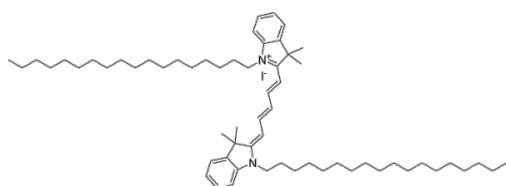
Formula $C_{61}H_{99}IN_2$ M.Wt 987.36

Solubility Storage Store at -20°C

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



Background

DiD is a long-chain carbocyanine dye. Carbocyanine dyes are widely used as Di to label cells, organelles, liposomes, viruses and lipoproteins (Ex/Em = 633/665 nm) [2].

In Vivo, Two weeks after injection of stained cells, a single, bright, DiD-positive cells located between 15 to 40 µm from the endosteum is found. Results reveal a progressive appearance of cell clusters of decreased dye intensity, consistent with the partitioning of DiD label on cell division[3].

Caution: Product has not been fully validated for medical applications. For research use only.

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In Vitro, Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).

1. Preparing Stain Solutions of DiD perchlorate

1.1 Prepare DMF, DMSO or ethanol mother liquor: The solutions should be prepared in dimethyl formamide (DMF), dimethylsulfoxide (DMSO, or ethanol DMSO at 1-5 mM.

1.2 Prepare working solutions: Dilute the stock solutions into a suitable buffer such as serum-free culture medium, HBSS or PBS to make 1-5 μ M working solutions. We do not recommend storing the aqueous solution for more than one day. Note: The final concentration of the working solution should be empirically determined for different cell types and/or experimental conditions.

2. Cell staining (Suspension cells)

2.1 Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time. The cell density is 1×10^6 /mL.

2.2 Add 1 mL of DiD perchlorate working solution, and then incubate at room temperature for 5-30 minutes.

2.3 Centrifuge at 400 g at 4°C for 3-4 minutes and then discard the supernatant.

2.4 Wash twice with PBS, 5 minutes each time.

2.5 Resuspend cells with serum-free cell culture medium or PBS. Observation by fluorescence microscopy or flow cytometry.

3. Cell staining (Adherent cells)

3.1 Culture adherent cells on sterile coverslips.

3.2 Remove the coverslip from the medium and aspirate excess medium.

3.3 Add 100 μ L of working solution, gently shake it to completely cover the cells, and then incubate at room temperature for 5-30 minutes.

3.4 Wash twice with medium, 5 minutes each time. Observation by fluorescence microscopy or flow cytometry.

References:

- [1]. Gan WB, et al. Multicolor "DiOlistic" labeling of the nervous system using lipophilic dye combinations. *Neuron*. 2000 Aug;27(2):219-25.
- [2]. Kenji Yumoto, et al. A novel method for monitoring tumor dormancy using fluorescent dye DiD. *Cytometry A*. 2014 Jun; 85(6): 548–555.
- [3]. Meng Li, et al. In Vivo Tracking of Human Adipose-derived Mesenchymal Stem Cells in a Rat Knee Osteoarthritis Model with Fluorescent Lipophilic Membrane Dye. *J Vis Exp*. 2017; (128): 56273.
- [4]. Lo Celso C, et al. Live-animal tracking of individual haematopoietic stem/progenitor cells in their niche.

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