DAPI dihydrochloride

Cat: ID2250

Storage: Powder: -20℃, 2 years; Insolvent (mother liquid): -20℃, 6 months; -80℃, 1 year（protect from light）

Introduction

DAPI dihydrochloride is a fluorescent dye that binds to DNA sequences rich in A-T base pairs. DAPI is a fluorescent dye that binds to most of the A and T bases in DNA and is commonly used in fluorescence microscopy. Because DAPI can pass through intact cell membranes, it can be used for staining of both living and fixed cells. The maximum excitation wavelength of DAPI is 340nm and the maximum emission wavelength is 488nm; when DAPI binds to double-stranded DNA, the maximum excitation wavelength is 364nm, and the maximum emission wavelength is 454nm. When DAPI binds to double-stranded DNA, the maximum absorption wavelength is When DAPI binds to double-stranded DNA, the maximum absorption wavelength is 358 nm and the maximum emission wavelength is 461 nm. The emission light of DAPI is blue, and the emission wavelengths of DAPI and the green fluorescent protein GFP or Texas Red stain (red fluorescent stain) overlap only partially, which can be utilized to carry out multiple fluorescent staining on a single sample.

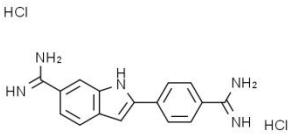
In general, the recommended working concentration of DAPI is 0.5-10 μg/mL when used for staining cell nuclei.

Parameter

CAS: 28718-90-3

Molecular Formula: $C_{16}H_{15}N \cdot 2HCl$

Molecular Weight: 350.25



Purity: ≥98%

Appearance: Light yellow to green Solid

Solubility: Soluble in Water/DMSO ≥10mg/mL

Protocols (*only for reference*)

Preparation of storage solution

Prepare a 10 mM stock solution in Water/DMSO. For example, 1 mg of DAPI powder dissolved in 0.286 mL of Water/DMSO.

Note:

a. Unused storage solution is recommended to be stored in portions at -20℃ to avoid repeated freezing and thawing.

b. Moisture-absorbing DMSO has a significant effect on the solubility of the product, use freshly opened DMSO.

Preparation of working fluid

Dilute the reservoir solution with a suitable buffer (e.g., double-distilled water or PBS) to make a working solution of 0.5-10 μM.

Note:

a. The final concentration of the working solution is recommended to be optimized according to different cell lines and experimental systems.
b. If it is found difficult to dissolve, it can be sonicated to promote dissolution.
c. Please adjust the concentration of the working solution according to the actual situation, and use it now.

Protocols (*only for reference*)

Staining of fixed cells or tissues

*For fixed cell or tissue samples, after fixation, wash appropriately to remove fixative. DAPI staining is usually performed at the end of other stains. If no other staining is required, proceed directly to DAPI staining.

1. For adherent cells or tissue sections: add appropriate amount of DAPI staining solution to cover the sample.
   For suspended cells: add at least 3 times the volume of staining solution of the sample to be stained and mix well. Leave at room temperature for 3-5 minutes.
2. Aspirate the DAPI staining solution and wash with TBST, PBS or saline 2-3 times for 3-5 minutes each time.
3. Observe directly under a fluorescence microscope or under a fluorescence microscope after sealing.

Staining of live cells or tissues

1. Add an appropriate amount of DAPI staining solution to the cell culture, about 1/10 of the volume of cell culture medium, which must fully cover the sample to be stained. Usually, 1mL of dyeing solution should be added to a hole for a six-well plate, and 100μL dyeing solution should be added to a hole for a 96-well plate.
2. Incubate the cells at 37℃ for 10-20 min.
3. Wash the cells twice with PBS or a suitable buffer.
4. Observe directly under the fluorescence microscope or under the fluorescence microscope after sealing.

Note

1. DAPI is irritating to the human body, so please pay attention to proper protection.
2. In general, DAPI is commonly used for staining nuclei in fixed cells or tissue sections; Hoechst 33342 or Hoechst 33258 is recommended for observation of nuclei in living cells.
3. All fluorescent dyes have quenching problems, please try to avoid light to slow down the fluorescence quenching.
4. For your safety and health, please wear lab coat and disposable gloves.
5. This product is for scientific research use only. Do not use in medicine, clinical diagnosis or treatment, food and cosmetics. Do not store in ordinary residential areas.

Related Literature

[1]. Hu S, Xia K, Huang X, Zhao Y, Zhang Q, Huang D, Xu W, Chen Z, Wang C, Zhang Z. Multifunctional CaCO3@Cur@QTX125@HA nanoparticles for effectively inhibiting growth of colorectal cancer cells. J Nanobiotechnology. 2023 Sep 29;21(1):353. doi: 10.1186/s12951-023-02104-w. PMID: 37773145; PMCID: PMC10543835.(IF:10.2)

Note: For more literature, please visit the Solarbio official website.

Related Products

IH0060	*Hoechst 33258 NO33258 fluorescent dyestuff*
IH0070	*Hoechst 33342 NO33342 fluorescent dyestuff*
IP5030	*Propidium Iodide*
IH1760	*Hoechst 34580 tetrahydrochloride*
IE2070	*Ethidium homodimer*
IH1750	*Hoechst 34580*