

Product Data Sheet

Product Name: 2-Di-1-ASP

Cat. No.: GC38730

Chemical Properties

Cas. No. 2156-29-8

SMILES C[N+]1=CC=CC=C1/C=C/C2=CC=C(N(C)C)C=C2.[I-]

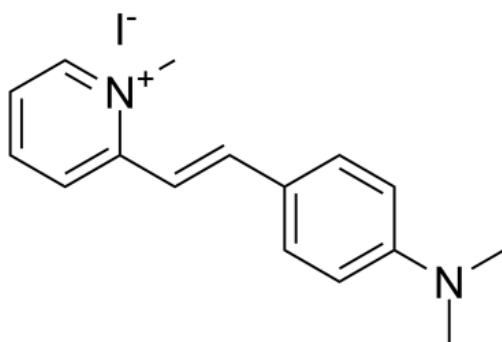
Formula $C_{16}H_{19}IN_2$ M.Wt 366.24

Solubility DMSO: 25 mg/mL (68.26 mM) 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



Protocol

This plan only provides a guide, please modify it to meet your specific needs.

1. Prepare dyeing solution

(1) Dye stock solution: Use DMSO to dissolve 2-Di-1-ASP into a 1-5mM stock solution. The prepared stock solution is aliquoted and stored in the dark at -20 or -80°C.

(2) Dye working solution: Dilute the stock solution with a suitable buffer (such as serum-free medium,

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HBSS or PBS) to prepare an 2-Di-1-ASP working solution with a concentration of 1-5 μ M.

Note: Please adjust and optimize the working fluid concentration according to the actual situation, and prepare it now.

2. Cell suspension staining (taking 6-well plate as an example)

(1) Centrifuge suspended cells at 1000 *g* for 3-5 minutes. Discard the supernatant and wash twice with PBS for 5 minutes each time.

(2) Wash the adherent cells twice with PBS, add trypsin to digest the cells, and centrifuge at 1000 *g* for 3-5 minutes after digestion is completed.

(3) Add 1 mL of dye working solution to resuspend the cells, and incubate at room temperature in the dark for 15-30 minutes. The optimal culture time for different cells is different.

(4) After the incubation, centrifuge at 1000 *g* for 5 minutes, remove the supernatant, and add PBS to wash 2-3 times, 5 minutes each time.

(5) Use serum-free cell culture medium or PBS to resuspend the cells and observe them through fluorescence microscopy or flow cytometry.

3. Cell adhesion staining

(1) Culture adherent cells on sterile coverslips.

(2) Remove the coverslip from the culture medium, aspirate the excess culture medium, and place the coverslip in a humid environment.

(3) Add 100 μ L of dye working solution from one corner of the coverslip, shake gently to evenly cover all cells with the dye, and incubate at room temperature in the dark for 15-30 minutes.

(4) Aspirate away the dye working solution and use culture solution to wash the coverslip 2 to 3 times for 5 minutes each time.

4. Microscope detection: The maximum excitation light/emission light of 2-Di-1-ASP is 485/607 nm.

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Precautions:

- 1) Fluorescent dyes all have quenching problems. Please avoid light as much as possible to slow down fluorescence quenching.
- 2) For your safety and health, please wear a lab coat and disposable gloves.

References:

[1]. Yu-Meng Wang, et al. MeCP2 duplication causes hyperandrogenism by upregulating LHCGR and downregulating ROR α . 2021 Oct 25;12(11):999. doi: 10.1038/s41419-021-04277-4.

Background

2-Di-1-ASP (Compound 18a) is a mono-stryryl dye, and widely used as mitochondrial stain and groove-binding fluorescent probes for double-stranded DNA. 2-Di-1-ASP is selective for G-quadruplex (G4) and double-stranded DNA[1].

2-Di-1-ASP (Compound 18a) displays significant fluorescence enhancements in the presence of G-quadruplex (G4) structures (up to 300-fold), and good selectivity with respect to double-stranded DNA. 2-Di-1-ASP shows fluorimetric selectivity for parallel G4-DNA forms (c-kit2, c-kit87up, c-myc) [1].

[1]. Xie X, et al. Identification of optimal fluorescent probes for G-quadruplex nucleic acids through systematic exploration of mono- and distyryl dye libraries. Beilstein J Org Chem. 2019 Aug 6;15:1872-1889.

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