Ethidium homodimer

Cat. No.: HY-D0093

CAS No.: 61926-22-5

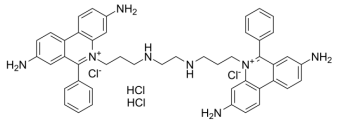
Molecular Formula: $C_{46}H_{50}Cl_4N_8$

Molecular Weight: 856.75

Target: DNA Stain

Pathway: Cell Cycle/DNA Damage

Storage: -20°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



BIOLOGICAL ACTIVITY

Description

Ethidium homodimer (EthD-1) is a high-affinity fluorescent nucleic acid dye commonly used to stain mammals, bacteria, yeast, and fungi. Ethidium homodimer binds to DNA or RNA, enhancing fluorescence more than 30 times. The Ethidium homodimer has a strong positive charge, so it cannot cross cell membranes and stain living cells; But the Ethidium homodimer can cross the disordered region of the dead cell membrane to reach the nucleus and embed the DNA double strand to produce red fluorescence. Therefore, Ethidium homodimer is a relatively sensitive nucleic acid stain that can accurately detect nucleic acids in solution or in decomposing cells. Ethidium homodimer binds DNA, Ex/Em=528/617 nm[1].

In Vitro

General Protocol
Preparation of EthD-1 working solution
1.1 Preparation of the stock solution
Dissolve EthD-1 in DMSO to obtain 2 mM of EthD-1.
Note: It is recommended to store the stock solution at -20°C or -80°C away from light and avoid repetitive freeze-thaw cycles.
1.2 Preparation of EthD-1 working solution
Dilute the stock solution in serum-free cell culture medium or PBS to obtain 0.1-10 μM of EthD-1 working solution.
Note: Please adjust the concentration of EthD-1 working solution according to the actual situation.

Cell staining
2.1 Cell preparation
For suspension cells: Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant.
Wash twice with PBS, 5 minutes each time.
For adherent cells: Discard the cell culture medium, and add trypsin to dissociate cells to make a single-cell suspension.
Centrifuge at 1000 g at 4°C for 3-5 minutes and then discard the supernatant. Wash twice with PBS, 5 minutes each time.
Note: Please adjust the concentration of EthD-1 working solution according to the actual situation, and prepare it as it is used.
2.2 Add 1 mL of EthD-1 working solution, and then incubate at room temperature for 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, and then detect by fluorescence microscope or flow cytometer.

Precautions
1. It is recommended to store the stock solution at -20℃ or -80℃ away from light and avoid repetitive freeze-thaw cycles.
2. Please adjust the concentration of EthD-1 working solution according to the actual situation.

3. This product is for R&D use only, not for drug, household, or other uses.
4. For your safety and health, please wear a lab coat and disposable gloves to operate.
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Joshua R Edwards, et al. A novel method for the evaluation of proximal tubule epithelial cellular necrosis in the intact rat kidney using ethidium homodimer. BMC Physiol. 2007 Feb 23;7:1.

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