Ethidium Homodimer-1 (EthD-1)

Cat #: BMD0060 Size: 1 mg/10 mg

	Ethidium Homodimer-1 (EthD-1)		
REF	**Cat #:** BMD0060	LOT	**Lot #:** Refer to product label
	Application range: Nucleic acid staining		**Recommended working concentrations:** 0.1-10 μM
	Excitation/Emission wavelengths: Ex/Em (bound DNA) =528/617 nm		
	Storage: Stored at 4℃ for 12 months, protected from light		

Assay Principle

EthD-1, with the molecular formula $C_{46}H_{50}Cl_4N_8$, molecular weight 856.8, CAS number 61926-22-5, is a high-affinity fluorescent nucleic acid dye that can enhance fluorescence more than 30-fold when combined with DNA or RNA, and is used for staining of mammals, bacteria, yeast, and fungi. EthD-1 has a strong positive charge, so the dye cannot cross the cell membrane for live cell staining, but it can cross the disordered regions of the dead cell membrane to reach the nucleus and embed in the DNA duplex to produce red fluorescence. Therefore, EthD-1 can accurately detect nucleic acids in solution or disintegrating cells, and is a sensitive nucleic acid stain. In the case of adherent cells (cover slides), using 100 μL of 4 μM staining solution per sample, 1 mg of the working solution could be used for 2,917 samples.

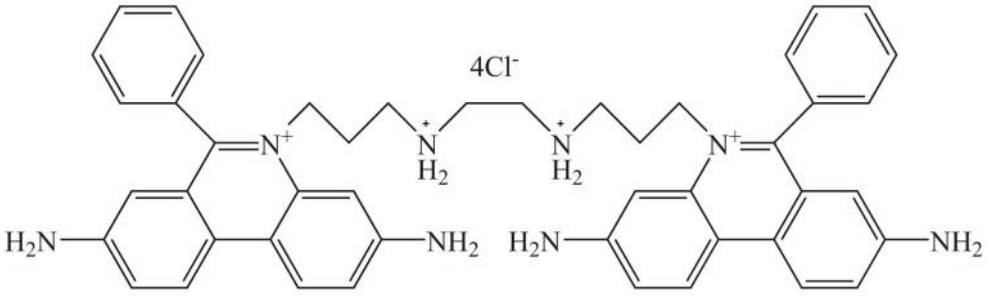

Figure 1. Molecular diagram

Materials Supplied and Storage Conditions

Kit components	Size		Storage conditions
Ethidium Homodimer-1 (EthD-1)	1 mg	10 mg	4℃, protected from light

Materials Required but Not Supplied

• Fluorescent microscope, precision pipettes, disposable pipette tips, DMSO, D-PBS

Assay Procedure

Note: The instructions are applicable to most cells, but different cell types, cell density, medium used, and some other factors may affect the staining results. This instruction is for reference only.

1. Preparation of storage solution: an appropriate amount of DMSO was added to EthD-1 to make a 2 mM storage solution, which could be stably stored at -20℃ for 12 months.
2. Add 20 μL of 2 mM storage solution to 10 mL of sterile tissue culture-grade D-PBS and vortex thoroughly to achieve a final concentration of 4 μM (0.1-10 μM is recommended, and gradient settings are recommended for different cell lines to determine the best staining concentration).
3. Absorb 100-150 μL of the above prepared working solution and add it to the cell cover glass to completely cover it. Incubation is best done in a dish containing a lid to prevent volatilization of the staining solution.
4. Incubate at room temperature in the dark for 30-45 min. If the concentration of staining solution is too high or the temperature is too low, the incubation time can be appropriately reduced.
5. Add 10 μL D-PBS to a new microscope slide.
6. Use pointed forceps to carefully and quickly put the cover slip containing cells upside down on the slide containing D-PBS. In order to prevent the staining solution from evaporation, seal the sides of the slide with clean and transparent nail polish.
7. The cell staining was observed under a fluorescence microscope.

Precautions

1. Please centrifuge the product to the bottom of the tube instantaneously before use, and then conduct subsequent experiments.
2. Fluorescent dyes all have quenching problems. Please try to avoid light to slow down fluorescence quenching.
3. For your safety and health, please wear lab coats and disposable gloves.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.