
EthD-III

Cat. No.: E1427905 | Pack size: 100µg; 500µg; 1mg | Storage: Protected from light, Store at -20°C, Argon charged

Overview

Ethidium Homodimer-III (EthD-III) is an alternative to Ethidium Homodimer-I (EthD-I). It exhibits a fluorescence spectrum similar to that of EthD-I; however, upon binding to DNA, EthD-III produces significantly brighter fluorescence than EthD-I. It is used for staining mammalian cells, bacteria, yeast, and fungi. EthD-III carries a strong positive charge, which prevents it from crossing cell membranes to stain live cells. Nevertheless, it enables accurate detection of nucleic acids in solution or in lysed cells, making it an exceptionally sensitive nucleic acid stain.

Product Specifications

1. Appearance: Red solid soluble in DMSO and MeOH.
2. $\lambda_{Ex}/\lambda_{Em}$ = 530/620 nm (when bound to DNA).
3. $\lambda_{Ex}/\lambda_{Em}$ = 493 nm (when unbound to DNA).
4. Molecular weight: ~1000.

Protocol

Note: This protocol is applicable to most cell types. Staining results may be affected by cell type, cell density, culture medium, and other factors; this protocol is for reference only.

1. Stock solution preparation: Add an appropriate volume of DMSO to Ethidium Homodimer-I to prepare a 2 mM stock solution. This stock solution can be stably stored at -20°C for one year.
2. Add 20 µL of the 2 mM stock solution to 10 mL of sterile, tissue-culture grade D-PBS, and mix thoroughly by vortexing to obtain a final concentration of 4 µM (recommended concentration range: 0.1–10 µM. For different cell lines, gradient optimization is recommended to determine the optimal staining concentration).
3. Pipette 100–150 µL of the prepared working solution onto the cell coverslip to fully cover the cells. Incubation is preferably performed in a lidded dish to prevent evaporation of the staining solution.
4. Incubate at room temperature for 30–45 minutes. Incubation time may be appropriately shortened if the staining solution concentration is too high or the temperature is too low.
5. Add 10 µL of D-PBS to a new microscope slide.

6. Using fine forceps, carefully and quickly invert the cell-bearing coverslip onto the slide containing D-PBS. To prevent evaporation of the staining solution, seal the edges of the coverslip with clear, transparent nail polish.
7. Observe cell staining under a fluorescence microscope.

Specifications

Attribute	Value
Specifications & Purity	BioReagent, Biological Stain, for fluorescence analysis, for microscopy, ≥90%
Stability And Storage	Store at 2-8°C long term (60 months). Store in the dark.
Storage Conditions	Protected from light, Store at -20°C, Argon charged
Shipped In	Ice chest + Ice pads. This product requires cold chain shipping. Ground and other economy services are not available.
Purity	≥90%

Contact & Global Offices

Whether you have a technical question, need help with a quotation, or want to inquire about an order, our regional teams are ready to assist. Please contact the office that best matches your location or support needs.

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Limitations & Disclaimer

- For Research Use Only (RUO). Not for use in human or animal diagnostics, therapeutics, or in vivo applications. Not for food, cosmetic, or household use.

- This product is not a CE-marked in vitro diagnostic device under IVDR (EU) 2017/746 and is not an FDA-cleared device under 21 CFR. Use is restricted to qualified laboratory personnel.
- Where any kit component is classified as hazardous under CLP (EC) 1272/2008 or OSHA HCS (29 CFR 1910.1200), the product Safety Data Sheet (SDS) takes precedence over this document for hazard classification, PPE, handling, storage, and disposal.
- Performance depends on sample type, sample condition, handling, and operator technique. Users are responsible for validating the product for their specific sample matrix, instrument platform, and downstream application.
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