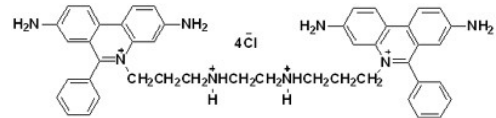


Ethidium Homodimer-1

- High-affinity nucleic acid stain that is weakly fluorescent until bound to DNA
- Staining dye for dsDNA, ssDNA, RNA, oligonucleotides, and triplex DNA

Product Description

Name :	Ethidium Homodimer-1 (EthD-1)
Catalog Number :	FP-25810A, 1mg FP-AT758A, 0,5 ml (2mM in DMSO)
Molecular Weight :	MW= 856,77
Structure :	C ₄₆ H ₅₀ Cl ₄ N ₈
Solubility:	DMSO, DMF, Methanol and water
Absorption / Emission :	λ_{exc} / λ_{em} (with DNA) = 528/617 nm λ_{abs} (H ₂ O, no DNA) = 493 nm
EC (M⁻¹ cm⁻¹) :	$\geq 9\ 500 \pm 800$
Storage:	-20°C Protect from light and moisture



Introduction

The high-affinity nucleic acid stain, cell-impermeant viability indicator ethidium homodimer-1 (EthD-1) is weakly fluorescent until bound to DNA and emits red fluorescence (excitation/emission maxima ~528/617). An Ethidium homodimer assay can be used to detect dead or dying cells. Ethidium homodimer is a membrane-impermeable fluorescent dye which binds to DNA. After a cell sample has been stained with ethidium homodimer, the dead cells may be viewed and counted under a UV-light microscope. When cells die, the plasma membranes of those cells becomes disrupted. Because of this, ethidium homodimer may enter those cells and bind to DNA within those cells. Because live cells don't have a compromised membrane, the ethidium homodimer can't enter. One reason for doing an ethidium homodimer assay instead of using a TUNEL assay to measure cell death is that ethidium homodimer stains all of the dead or dying cells, while TUNEL only stains cells that have undergone programmed cell death.

Directions for use

Cell attachment and viability (Khanna-Jain R., 2012)

- Incubate cells in Dulbecco's PBS-based dye solution, containing 0.5 μ M of calcein AM (4 mmol/L) and 0.5 μ M of ethidium homodimer-1 (EthD-1) (2 mmol/L) for 45 min at room temperature (RT).
- Replace the dye solution by fresh Dulbecco's PBS solution.
- Examine the viable cells (green fluorescence) and necrotic cells (red fluorescence) using a fluorescence microscope.

Other protocol may be found in the literature.

References

- Corti O. *et al.*, The p38 subunit of the aminoacyl-tRNA synthetase complex is a Parkin substrate: linking protein biosynthesis and neurodegeneration, *Hum. Mol. Genet.* 12 (12): 1427-1437 (2003) [Article](#)
- Fontaine F. *et al.*, Survival of Purified Rat Photoreceptors In Vitro Is Stimulated Directly by Fibroblast Growth Factor-2, *The Journal of Neuroscience*, 18(23): 9662-9672 (1998) [Article](#)

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- **Khanna-Jain R. et al.**, Osteogenic differentiation of human dental pulp stem cells on β -tricalcium phosphate/poly (l-lactic acid/caprolactone) three-dimensional scaffolds, *J Tissue Eng* - vol. 3 no. 1 (2012) [Article](#)
- **Martinat C. et al.**, Theiler's Virus Infection of Primary Cultures of Bone Marrow-Derived Monocytes/Macrophages, *J. Virol.* vol. 76 no. 24 12823-12833 (2002) [Article](#)
- **Oas R. et al.**, p120-catenin and β -catenin differentially regulate cadherin adhesive function, *Mol. Biol. Cell* 24:6 704-714 (2013) [Abstract](#)

Technical and scientific information

Related products

- Calcein AM, FP-895515
- Dulbecco's PBS 20X (Sterile), RJ226A
- Acridine homodimer, FP-WU5140
- Ethidium monoazide bromide, FP-48256A
- DAPI, Dihydrochloride, FP-371867
- Hexidium Iodide, FP-389151

Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.
Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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