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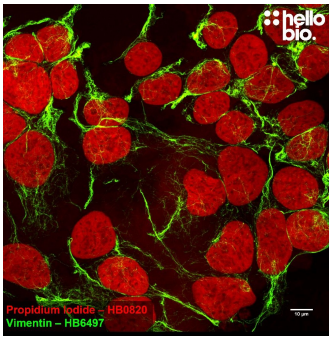
DATASHEET

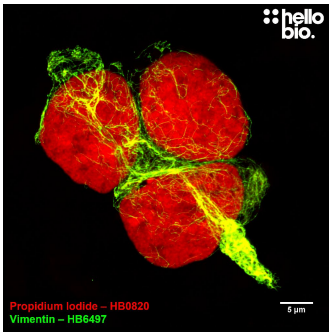
Propidium Iodide

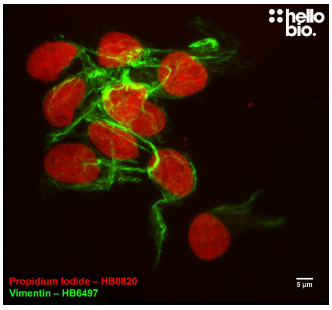
Product overview

Name	Propidium Iodide
Cat No	HB0820
Alternative names	PI
Biological description	Propidium iodide (PI) is a widely used red-fluorescent intercalating agent that binds and labels nucleic acids. Propidium iodide is membrane impermeant and is therefore frequently used to selectively identify dead cells and is commonly used in flow cytometry to evaluate cell viability. Propidium iodide (PI) is often used in flow cytometry, fluorescent microscopy and confocal laser scanning microscopy applications. Frequently used with Oxazole Yellow (YP1) when staining for apoptotic and necrotic cells as apoptotic cells remain impermeant to propidium iodide but permeable to Oxazole Yellow (YP1). Once bound to the nucleic acids, its fluorescence is enhanced 20- to 30-fold. Wavelength Maxima: Excitation ~535nm, Emission ~617nm
Biological action	Dyes & stains
Purity	>97%
Description	Red-fluorescent cell viability stain

Images







Biological Data

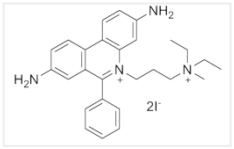
Application notes	**#Protocol 1: Propidium Iodide counterstaining of HEK293T cells**

- HEK293T cells were cultured on coverslips in 10% FBS in DMEM and fixed with 4% PFA. Immunocytochemistry was performed following our ICC protocol using an anti-vimentin monoclonal antibody at 1µg/ml.
- Prodidium iodide working solution was prepared consisting of 1µg/ml Propidium Iodide and 10µg/ml RNase A and incubated with cells for 30 minutes at room temperature.
- Following washing with PBS, coverslips were mounted and imaged using a confocal microscope using either a 532nm or 514nm laser for excitation

Solubility & Handling

Storage instructions	+4°C
Solubility overview	Soluble in water (5 mM)
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

Chemical Data

Chemical name	2,7-Diamino-9-phenyl-10 (diethylaminopropyl)-phenanthridium iodide methiodide
Molecular Weight	668.39
Chemical structure	
Molecular Formula	$C_{27}H_{34}I_2N_4$
CAS Number	25535-16-4
PubChem identifier	104981
SMILES	CC[N+](C)(CC)CCC[N+]1=C2C=C(C=CC2=C3C=CC(=CC3=C1C4=CC=CC=C4)N)N.[I-].[I-]
InChiKey	XJMOSONTPMZWPB-UHFFFAOYSA-M
MDL number	MFCD00011921
Appearance	Purple solid
Excitation	535nM
Emission	617nM

References

Analysis of apoptosis by propidium iodide staining and flow cytometry.

Riccardi C *et al* (2006) Nat Protoc 1(3)
PubMedID 17406435

The DNA intercalators ethidium bromide and propidium iodide also bind to core histones.

Banerjee A *et al* (2014) FEBS Open Bio 4
PubMedID 24649406

DNA staining for fluorescence and laser confocal microscopy.

Suzuki T *et al* (1997) J Histochem Cytochem 45(1)
PubMedID 9010468