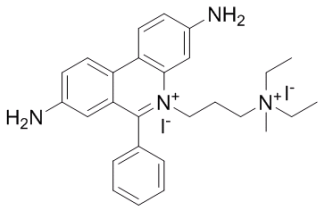
Propidium Iodide

Cat. No.:	HY-D0815
CAS No.:	25535-16-4
Molecular Formula:	$C_{27}H_{34}I_2N_4$
Molecular Weight:	668.39
Target:	Others
Pathway:	Others
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 5 mg/mL (**7.48 mM;** ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.4961 mL	7.4807 mL	14.9613 mL
	5 mM	0.2992 mL	1.4961 mL	2.9923 mL
	10 mM	---	---	---

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

Propidium Iodide is a red-fluorescent dye that can be used to stain cells.

In Vitro

Propidium Iodide is a cell-membrane impermeable dye with characteristic excitation maximum at 535 nm and emission maximum at 617 nm which intercalates with nucleic acids with a stoichiometry of one dye per 4-5 base pairs with little sequence preference. Propidium Iodide has evidenced of having no toxic effects on neurons, being today's most common marker for membrane integrity and cell viability when applied prior to fixation (pre-fixation Propidium Iodide staining method). The pre-fixation staining has been widely used for quantitative assessments of neuronal cell decline in models of acute neurodegeneration, visualized as intensely labeled PI^+-pycnotic nuclei of degenerating neurons [1]. Propidium Iodide cannot cross the membrane of live cells, making it useful to measure the percentage of apoptotic cells by flow-cytometric analysis. The flow cytometric data shows an excellent correlation with the results obtained with both electrophoretic and colorimetric methods. This new rapid, simple and reproducible method proves useful for assessing apoptosis of specific cell populations in heterogeneous tissues such as bone marrow, thymus and lymph nodes[2].

PROTOCOL

Cell Assay [2]

Flow cytometric analysis: Propidium iodide is prepared in in 0.1% sodium citrate plus 0.1% Triton X-100 (50 μg/mL). The 200 ×g centrifuged cell pellet is gently resuspended in 1.5 mL hypotonlc fluorochrome solution (Propidium iodide 50 μg/mL), in 12×75 polypropylene tubes. The tubes are placed at 4°C in the dark overnight before the flow cytometric analysis. The propidium Iodide fluorescence of individual nuclei is measured using a FACScan flow cytometer. The nuclei traverses the light beam of a 488 nm Argon laser. A 560 nm dichrolc nurror (DM 570) and a 600 nm band pass filter (bandwidth 35 nm) are used for collecting the red fluorescence due to propidium Iodide staining of DNA and the data are registered on a logarithmic scale[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- **Mol Med Rep**. 2019 Jan;19(1):41-50.
- **Aging (Albany NY)**. 2018 Nov 28;10(11):3353-3370.
- **Chinese Pharmacological Bulletin**. 2018 May; 34(5): 620-626.

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REFERENCES

[1]. Hezel M, et al. Propidium iodide staining: a new application in fluorescence microscopy for analysis of cytoarchitecture in adult and developing rodent brain. Micron. 2012 Oct;43(10):1031-8.

[2]. A rapid and simple method for measuring thymocyte apoptosis by propidium iodidestaining and flow cytometry. J Immunol Methods. 1991 Jun 3;139(2):271-9.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA