

PI Solution (1 mg/mL)

Introduction

Propidium Iodide (PI) is a commonly used nuclear probe that binds to nucleic acids and emits red fluorescence, with an intensity 20-30 times stronger than that of PI itself. Since PI cannot penetrate intact cell membranes, it is only suitable for staining cells with compromised membranes, such as apoptotic cells. Leveraging this characteristic, PI is often used in combination with live-cell probes like Calcein-AM, Hoechst 33258, or Hoechst 33342 for live/dead cell staining and analysis. Additionally, PI is a commonly used counterstain in immunofluorescence.

This product is supplied as a 1 mg/mL solution in H₂O. Dilute to the desired working concentration before use. Stained samples can be analyzed by fluorescence microscopy or flow cytometry.

Storage

Store at -20°C protected from light, stable for two years.

Properties

Physical Appearance	Liquid
M.Wt	668.4
Cas No.	25535-16-4
Formula	C ₂₇ H ₃₄ I ₂ N ₄
Ex/Em	535/615 nm (after binding DNA)

Protocol

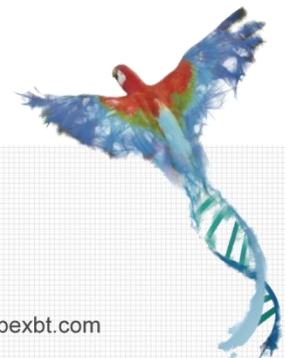
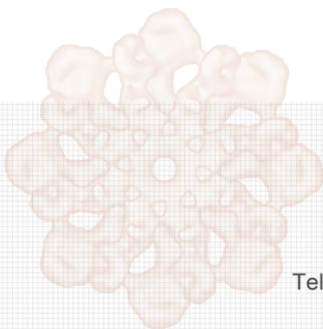
1. Dilute the stock solution to the desired working concentration (typically 50 µg/mL) using PBS or an appropriate assay buffer.
2. Fix cells or tissue samples following your experimental protocol, and then wash thoroughly to remove the fixative. If performing immunofluorescence, complete antibody staining before proceeding to PI staining.
3. For adherent cells or tissue sections, cover the sample with sufficient PI working solution. For suspension cells, resuspend the cell pellet in at least 3 volumes of PI working solution. Incubate at room temperature, protected from light, for 3-5 min.
4. Remove the PI solution and wash the sample 2-3 times with PBS or an appropriate buffer. Observe by

fluorescence microscopy or flow cytometry (Ex/Em: 535/615 nm).

***Note:** For live cell detection, due to the cytotoxicity of PI, it is recommended to perform detection as soon as possible after staining to avoid increased cell death, which could lead to false positive results.

■ Note

1. This product is a PI stock solution. For a ready-to-use PI staining solution, please refer to product PI Solution (Ready-to-Use) (Cat. No. K2404).
2. This product is light-sensitive. Protect from light during use and storage.
3. For your safety and health, please wear lab coats and gloves during the experiment.
4. For research use only. Not to be used in clinical diagnostic or clinical trials.



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