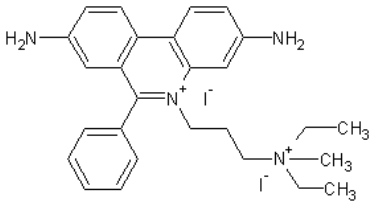
Propidium Iodide *UltraPure Grade*

Ordering Information:	*Storage Conditions:*
Product Number: 17515 (25 mg), 17516 (5 g), 17517 (10 mM)	Keep at -20 °C and desiccated

Chemical and Physical Properties

Molecular Weight: 668.39 Solvents: water and DMSO Excitation = 535 nm Fluorescence = 617 nm	

Biological Applications

Propidium iodide (PI) belongs to the same chemical class of ethidium bromide. As in the case of ethidium bromide its fluorescence is enhanced for 20-30-fold upon binding to nucleic acids. The fluorescence excitation maximum is red-shifted for 30–40 nm and the fluorescence emission maximum is blue-shifted for 15 nm or so. PI also binds to RNA as DAPI and acridine orange do. PI is commonly used for identifying dead cells in a population of cells and as a counterstain in multicolor fluorescence techniques. It can also be used to differentiate necrotic, apoptotic and normal cells. It is suitable for fluorescence microscopy, flow cytometry and fluorometry.

Sample Protocol for Staining Cells

PI staining is normally performed after all other stainings. It stains dead cells only. The following procedure can be adapted for most cell types. Growth medium, cell density, the presence of other cell types and other factors may influence staining. Residual detergent on glassware may also affect real or apparent staining of many organisms, causing brightly stained material to appear in solutions with or without cells present.

1). Make 1-10 mM DMSO stock solution. The DMSO stock solution is good for 6 months if stored at -20 °C.
2). Use the fixation protocol appropriate for your sample.
3). Pellet cells by centrifugation and resuspend the cells in buffered salt solutions or media, with optimal dye staining at pH 7.4. Adherent cells in culture may be stained *in situ* on cover slips or in the cell culture wells.
4). Add PI stain using the concentrations between 0.5 and 5 µM and incubate it for 15 to 60 minutes as a guide. *Note: In initial experiments, it may be best to try several dye concentrations over the entire suggested range to determine the concentration that yields optimal staining.*

References

1. Baskic D, Popovic S, Ristic P, Arsenijevic NN. (2006) Analysis of cycloheximide-induced apoptosis in human leukocytes: Fluorescence microscopy using annexin V/propidium iodide versus acridin orange/ethidium bromide. Cell Biol Int, 30, 924.
2. Scudla V, Ordeltova M, Minarik J, Dusek L, Zemanova M, Bacovsky J. (2006) Prognostic significance of plasma cell propidium iodide and annexin-V indices and their mutual ratio in multiple myeloma. Neoplasma, 53, 213.