DAPI, dihydrochloride

Cat. No. DAPI-019 **Lot. No.** (See product label)

SPECIFICATION

Description	DAPI (4′,6-Diamidino-2-Phenylindole, dihydrochloride) is a popular blue DNA dye that is used as a nuclear counterstain in fluorescence microscopy, chromosome staining, and flow cytometry. The dye binds to the minor groove of dsDNA with a pproximately 20-fold fluorescence enhancement, with higher affinity for A-T rich regions. DAPI can be used to stain mammalian cells as well as gram-positive and gram-negative bacteria. In yeast, the staining is weak and not nuclear. DAPI is le ss membrane permeant than Hoechst, and is typically used to stain fixed cells. O n the other hand, Hoechst dyes are membrane-permeant and more often used f or live or fixed cell staining and cell cycle analysis. While Hoechst and DAPI show less cytotoxicity than intercalating DNA dyes, they bind DNA in living cells and ar e potentially hazardous. DAPI and Hoechst undergo photoconversion by UV excit ation to form green fluorescent dyes, which can lead to artifacts in multi-color im aging.
Form	Yellow solid
Molecular Mass	350
Molecular Information	C16H17Cl2N5
CAS number	28718-90-3
Solubility	Soluble in water

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Absorption/Emission	358/461 nm (with DNA)
General Staining Protocol	Staining of fixed cells or tissue sections 1. Dilute DAPI to 1 μg/mL in PBS. DAPI can be included together with antibodies or other probes, and can be diluted in buffers with detergent or blocking agents if convenient. 2. Add the staining solution to cells or tissue sections and incubate at room temperature for at least 5 minutes. 3. Image the samples with UV (355 nm) excitation in the DAPI channel. Notes: a. Samples can be stored at 4 centigrade after staining and before imaging. b. DAPI can be included directly in antifade mounting medium for one-step mounting and staining. When using DAPI in mounting medium, longer incubation times may be required for DAPI to completely penetrate the cell nuclei.
Probe cellular localization	Nucleus
For live or fixed cells	For fixed cells
Detection method/readout	Fluorescence microscopy, Flow cytometry
Assay type/options	DNA content/cell cycle profiling by flow cytometry, Tissue staining
Cell permeability	Membrane permeant
Apoptosis/viability marker	All cell stain
Colors	Blue

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Staining bacteria or yeast	In bacteria, DAPI staining is dim compared to what is observed in mammalian cells. Live or killed bacteria can be stained with 10 µg/mL DAPI in PBS or 150 mM NaCl for 30 minutes at room temperature. DAPI tends to stain dead cells more brightly than live cells. In S. cerevisiae, DAPI preferentially stains dead yeast with nuclear and cytoplasmic staining when used at 10 µg/mL in PBS; in live yeast DAPI shows dim mitochondrial staining.
Stability	Product is stable for at least one year from date of receipt when stored as recommended.
Storage	Store DAPI (solid form) desiccated at 4 centigrade, protected from light. Store DAPI in H2O at 4 centigrade, protected from light.
Reference	1. Biochemistry 31, 3103 (1992); 2. Biochem Biophys Res Commun 170, 270 (1990); 3. J. Histochem Cytochem 38, 1323 (1990)

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