

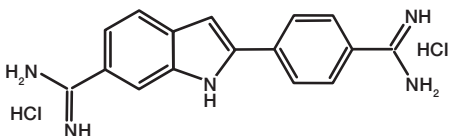
# PureBlu™ DAPI Nuclear Staining Dye

Catalog #	Description
135-1303	<b>PureBlu DAPI Nuclear Staining Dye</b> , 5 x 50 µg vials

**For research purposes only.**

## Introduction

PureBlu DAPI Nuclear Staining Dye is a highly pure formulation of 4',6-Diamidino-2-phenylindole dihydrochloride (DAPI) fluorescent dye (Figure 1) packaged in a user-friendly format.



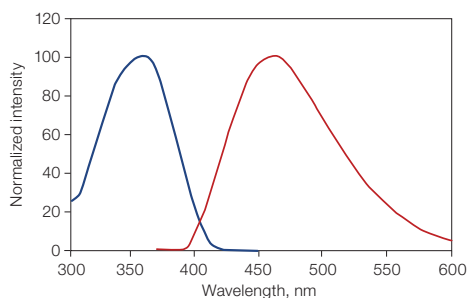
**Fig. 1. Molecular structure of PureBlu DAPI Nuclear Staining Dye.**

DAPI is a cell-permeable fluorescent compound that is able to stain the DNA of eukaryotic and prokaryotic cells by binding with high affinity to the minor groove of AT-rich DNA sequences.

When DAPI is bound to DNA and excited by an ultraviolet light source, blue fluorescence emission can be detected with maximum emission at 461 nm. PureBlu DAPI Dye has a characteristic Stokes shift of approximately 100 nm, which makes this dye an optimal choice when good spectral separation is desired (Figure 2).

PureBlu DAPI Nuclear Staining Dye is compatible with fixed and unfixed cells. While it is able to permeate the membrane of live cells, a greater amount of dye is usually required and the proper concentration should be determined experimentally. PureBlu Hoechst 33342 Nuclear Staining Dye (catalog #135-1304) should be considered as a viable alternative for live cell applications.

PureBlu DAPI Nuclear Staining Dye is provided in an easy-to-reconstitute format. Each vial contains 50 µg of PureBlu DAPI powder to generate 50 ml of 1 µg/ml working solution.



**Fig. 2. Excitation and emission spectra of PureBlu DAPI Dye.**

## Specifications

Property	Description
Formula	$C_{16}H_{17}Cl_2N_5$
Molecular weight	350.3
Maximum excitation/emission	359 nm/461 nm
CAS	28718-90-3
Purity	>95% (high-performance liquid chromatography)
Solubility	Soluble in deionized water (DI H <sub>2</sub> O) and dimethyl sulfoxide (DMSO)
Long-term storage	-20°C
Storage and stability	Stable for 2 years at -20°C. Upon resuspension, PureBlu DAPI Dye is stable for 1 year at -20°C or 6 months at 2-8°C
Handling	Protect from light

## Cell Staining Protocol

**Note:** The optimal concentration for different cell types should be determined empirically.

### Preparation of the Staining Solution

1. Add 500  $\mu$ l of DI H<sub>2</sub>O to one tube of lyophilized PureBlu DAPI Dye, then vortex briefly to make the 100x stock solution.
2. Dilute the stock solution 1:100 with 1x phosphate buffered saline (PBS) to make the 1  $\mu$ g/ml staining solution.

### Staining Procedure

1. Grow cells of interest under conditions specific for the cell type.
2. Rinse cells with 1x PBS.
3. Optional: Fix cells with 3.7% formaldehyde at room temperature (RT) for 10 min.
4. Optional: Rinse cells with 1x PBS and permeabilize them with 1x PBST (0.1% Triton X-100 in 1x PBS) at RT for 5 min.
5. Rinse cells with 1x PBS.
6. Stain with 1x staining solution (diluted with PBS) at RT for 15 min.
7. Rinse cells with 1x PBS.
8. Optional: Remove PBS and mount cells in antifade-mounting media.
9. Image cells.

Visit [bio-rad.com/PureBluDAPI](http://bio-rad.com/PureBluDAPI) for more information.

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