

ER-Lite™ Blue-White DPX *Cell-Permeable*

 Catalog number: 22626
 Unit size: 200 Tests

Component	Storage	Amount (Cat No. 22626)
ER-Lite™ Blue-White DPX	Freeze (< -15 °C), Minimize light exposure	200 Tests

OVERVIEW

ER-Lite™ Blue-White DPX is a highly photostable, environment-sensitive fluorescent probe designed for selective imaging of the endoplasmic reticulum (ER) in live cells. As a member of the Dapoxyl™ (DPX) dye family, it exhibits a large Stokes shift, high extinction coefficient, and exceptional quantum yield, making it an optimal tool for fluorescence microscopy. With an excitation maximum at approximately 374 nm, ER-Lite™ Blue-White DPX emits across a broad spectral range (430–640 nm), facilitating visualization using standard DAPI or UV long-pass optical filters.

This probe demonstrates superior selectivity for the ER, with minimal off-target labeling of mitochondria, unlike conventional ER stains such as DiOC₆(3). Its cell-permeant nature enables efficient intracellular uptake, and it remains non-cytotoxic at low working concentrations. The fluorescence properties of ER-Lite™ Blue-White DPX are highly environment-sensitive, shifting to longer emission wavelengths as solvent polarity increases while exhibiting a concomitant decrease in quantum yield. These characteristics allow for the study of ER organization and dynamics under various physiological conditions.

ER-Lite™ Blue-White DPX is also compatible with two-photon microscopy, expanding its applicability for high-resolution, deep-tissue imaging. While aldehyde fixation partially retains staining patterns, significant fluorescence signal loss should be anticipated. When used according to the optimized staining protocol, ER-Lite™ Blue-White DPX enables high-contrast, high-fidelity visualization of the ER, making it a valuable tool for investigating ER structure, function, and its involvement in cellular homeostasis and stress responses.

AT A GLANCE
Protocol Summary

1. Prepare cells in growth medium
2. Incubate cells with ER Lite™ Blue-White DPX working solution at 37 °C for 15 - 30 minutes
3. Analyze under fluorescence microscope at Ex/Em = 375/550 nm (DAPI- Long pass filter set)

Important Note

Thaw ER-Lite™ Blue-White DPX at room temperature before starting the experiment.

KEY PARAMETERS
Fluorescence microscope

Emission	550 nm
Excitation	375 nm
Recommended plate	Black wall/clear bottom
Instrument specification(s)	DAPI- Long pass filter

CELL PREPARATION

For guidelines on cell sample preparation, please visit: <https://www.aatbio.com/resources/guides/cell-sample-preparation.html>

PREPARATION OF STOCK SOLUTIONS

Unless otherwise noted, all unused stock solutions should be divided into single-use aliquots and stored at -20 °C after preparation. Avoid repeated freeze-thaw cycles

ER-Lite™ Blue-White DPX stock solution (100X)

Add 200 µL of DMSO (Not provided) into the vial of ER-Lite™ Blue-White DPX and mix well to make 100X ER Tracer™ Red stock solution.

Note: 100 µL of 500X ER-Lite™ Blue-White DPX stock solution is enough for one 96-well plate. Unused 100X ER-Lite™ Blue-White DPX stock solution can be stored at ≤ -20 °C. Protect from light.

PREPARATION OF WORKING SOLUTION
ER-Lite™ Blue-White DPX working solution

Add 200 µL of 100X ER-Lite™ Blue-White DPX stock solution into 20 mL of HH buffer, and mix well to make ER-Lite™ Blue-White DPX working solution.

Note: This ER-Lite™ Blue-White DPX working solution is stable for at least 2 hours at room temperature. Protect from light.

SAMPLE EXPERIMENTAL PROTOCOL

1. Plate and treat cells as desired.
2. Remove cell culture medium. Cells can be washed twice with buffer of your choice.
3. Add 100 µL/well (96-well plate) or 50 µL/well (384-well plate) of ER-Lite™ Blue-White DPX working solution in the cell plate. Incubate cells with working solution at 37 °C for 15 - 30 minutes, protected from light.

Note: The optimal concentration of the ER probe varies depending on the specific application. The staining conditions may be modified according to the particular cell type and the permeability of the cells or tissues to the probe.

4. Remove ER-Lite™ Blue-White DPX working solution in each well. Wash cells with physically relevant buffer three times.
5. Observe the fluorescence signal in cells using fluorescence microscope with DAPI Long pass filter set (Ex/Em = 375/550 nm).

EXAMPLE DATA ANALYSIS AND FIGURES

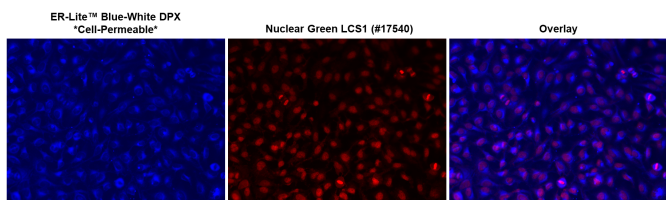


Figure 1. HeLa cells were seeded overnight and incubated with 1 μM ER-Lite™ Blue-White DPX Cell-Permeable Dye for 30 minutes at 37°C in a 5% CO_2 atmosphere. Following incubation, cells were washed with HH Buffer and imaged using a DAPI long-pass (DAPI-LP) filter set. Subsequently, the cells were counterstained with Nuclear Green LCS1 (#17540) according to the standard protocol and imaged using a GFP filter set (pseudo-colored red). Image overlays were generated using Keyence Analysis Software.

DISCLAIMER

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