Nuclear Black™ LCS1 *Cell-Permeable*

Catalog number: 17690
Unit size: 200 Tests

Component	Storage	Amount (Cat No. 17690)
Nuclear Black™ LCS1	Freeze (< -15 °C), Minimize light exposure	200 Tests

OVERVIEW

Nuclear Black™ LCS1 is a novel cell permeable, fluorescence suppression reagent designed to reduce green nuclear background from live cells in fluorescence imaging experiments. Some commonly used cellular stains may cause excessive or non-specific nuclear fluorescence in live-cell assays. Nuclear Black™ LCS1 permeates intact cells and suppresses undesired green nuclear signals, improving overall image contrast and clarity.

Nuclear Black™ LCS1 is ideal for live-cell fluorescence microscopy, high-content screening, and imaging workflows where high background from nuclear staining in live cells interferes with signal interpretation. Its cell-permeable formulation integrates seamlessly into existing protocols to enhance green fluorescence visualization without affecting the target readout.

AT A GLANCE

1. Prepare cells in growth medium.
2. Stain cells with dye for live cells.
3. Incubate cells with Nuclear Black™ LCS1 working solution at 37°C for 30 minutes.
4. Analyze under fluorescence microscope with FITC filter set.

CELL PREPARATION

For adherent cells:

Plate cells overnight in growth medium at 10,000 to 40,000 cells/well/100 µL for a 96-well plate or 2,500 to 10,000 cells/well/50 µL for a 384-well plate.

For non-adherent cells:

Centrifuge the cells from the culture medium and suspend the cell pellets in fresh culture medium at 50,000-100,000 cells/well/100 µL for a 96-well poly-D lysine plate or 10,000-25,000 cells/well/50 µL for a 384-well poly-D lysine plate. Centrifuge the plate at 800 rpm for 2 minutes with the brake off before your experiment.

Note: Each cell line should be evaluated individually to determine the optimal cell density.

PREPARATION OF WORKING SOLUTION

Nuclear Black™ LCS1 working solution

Prepare 0.2X to 1X Nuclear Black™ LCS1 working solution in HHBS buffer (AAT Cat# 20011), and mix well. The working solution is stable for 2 hours at room temperature.

Note: The provided stock solution is 100X.

Note: Unused Nuclear Black™ LCS1 stock solution can be aliquoted and stored at ≤ -20 °C for several months if the tubes are sealed tightly. Protect from light and avoid repeated freeze-thaw cycles.

SAMPLE EXPERIMENTAL PROTOCOL

The following protocol can serve as a guideline. It involves using a dye that stains all organelles but also nonspecifically stains nuclei, which users may wish to quench.

1. Prepare the cell samples and treat cells as desired.
2. Optional: Remove the cell culture medium and wash cells with DPBS or buffer of your choice.
3. Treat cells with live cells stain of your desire.
4. Add 100 µL/well (96-well plate) or 50 µL/well (384-well plate) of Nuclear Black™ LCS1 working solution and incubate for 30 minutes at 37°C in a 5% CO2 incubator, protected from light.

   Note: The optimal concentration of the Nuclear Black™ LCS1 varies depending on the specific applications. Concentration higher than the working solution can be toxic to cells. The staining conditions may be modified according to the particular cell type and the permeability of the cells or tissues to the probe.

5. Observe the fluorescence signal in cells using a fluorescence microscope with a FITC filter set.

EXAMPLE DATA ANALYSIS AND FIGURES

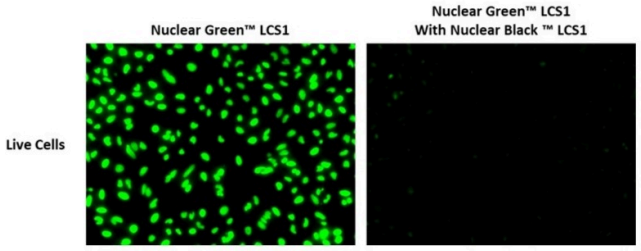

Figure 1. Fluorescence image of live HeLa cells stained with Nuclear Green™ LCS1 (Cat. #17540) only and stained with Nuclear Green™ LCS1 (Cat. #17540) and 1X Nuclear Black™ LCS1 (Cat. #17690). Nuclear Black™ LCS1 quenches the staining of Nuclear Green™ LCS1 in live cells.

DISCLAIMER

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