

BioTracker™ 650 Red Nuclear Dye

Live Cell Dye

Cat. # SCT119

pack size: Kit

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Store at 2-8°C



Data Sheet

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Background

The nucleus is a membrane-enclosed organelle found in eukaryotic cells. Cell nuclei contain most of the cell's genetic material, organized as multiple long linear DNA molecules in complex with a large variety of proteins, such as histones, to form chromosomes. Traditionally, DNA stains such as DAPI and Hoechst have been used for microscopy but require fixation and cannot be used for live cell imaging.

The BioTracker™ 650 Red Nuclear Dye is a cell-membrane permeable red fluorescent DNA dye that specifically stains nuclei in live or fixed cells. It has excellent specificity for DNA without the need for a wash step, and it has low toxicity for live cell imaging. The dye is supplied with a vial of verapamil, an efflux pump inhibitor that may improve probe retention and live cell staining in certain cell types.

Note: BioTracker™ Nuclear Dyes also shows blue fluorescence in the DAPI channel, and may not be suitable for multicolor imaging with blue probes.

Kit Components

- 1) 1 vial of 50µL BioTracker™ 650 Red Nuclear Dye (1000X in DMSO) (CS224577)
- 2) 1 vial of 100µL Verapamil HCL (100mM in DMSO) (CS224592)

Storage

Store BioTracker™ 650 Red Nuclear Dye at 2-8°C. Protect From Light.

Note: Centrifuge vial briefly to collect contents at bottom of vial before opening.

Spectral Properties

Absorbance: 650nm
Emission: 675nm

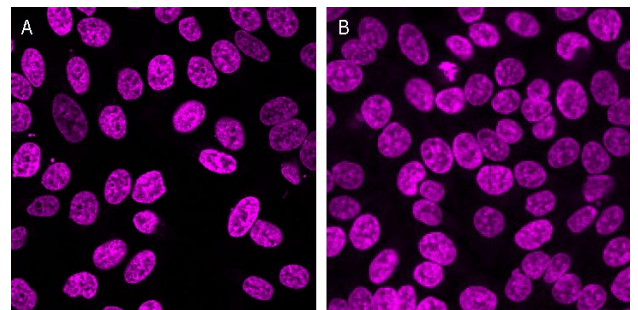


Figure 1. HeLa cells stained with BioTracker™ 650 Red Nuclear Dye in live cells (A) or methanol fixed (B).

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Assay Protocol

Live Cell Staining Protocol

1. Dilute BioTracker™ Nuclear Dye (1000X) to a final concentration of 1X in cell culture medium. For example, add 1µL of dye to 1 mL of culture medium. The optimal probe concentration may vary by cell type.

Optional: include verapamil in the staining solution to improve probe retention by live cells. The optimal concentration of verapamil may vary by cell type. We recommend testing concentrations between 10-100µM.

2. Remove medium from cells and replace with diluted BioTracker™ Nuclear Dye. Incubate at 37°C for 10 minutes or longer.

Note: BioTracker™ Nuclear Dyes do not show obvious toxicity after overnight incubation, but with longer incubation times it may stain structures other than the nucleus.

3. Image cells in the Cy5 channel.

Note: Washing is not necessary before imaging. Staining may decrease over time if medium is removed and replaced with fresh medium. If verapamil was added during staining, we recommend including it in the fresh medium at the same concentration if you choose to wash the cells. Cells can be fixed with formaldehyde and permeabilized with 0.1% Triton X-100 after staining, but signal may decrease.

Fixed Cell Staining

1. Dilute BioTracker™ Nuclear Dye (1000X) to a final concentration of 1X in PBS or other buffer. For example, add 1µL of dye to 1 mL of buffer. Optimal staining concentration may vary for different cell types.

2. Incubate sample with diluted BioTracker™ Nuclear Dye for 10 minutes or longer at room temperature.

3. Image cells in the Cy5 channel.

Note: Washing is not necessary before imaging. Signal may decrease over time after washing.

BioTracker™ is a trademark of Merck KGaA

■ antibodies ■ Multiplex products ■ biotools ■ cell culture ■ enzymes ■ kits ■ proteins/peptides ■ siRNA/cDNA products

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