# BioTracker™ NIR694 Nuclear Dye (DMSO)

Live Cell Dye

**Cat. # SCT118**

**pack size: 250µL**

Store at 2-8ºC

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

**Data Sheet**



## 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™ NIR694 Nuclear Dye (DMSO) is a cell membrane-impermeable, far-red dye with high selectivity for membrane compromised or dead cells. Dye staining is nuclear specific in fixed and permeabilized cells and tissue sections and does not require RNase treatment. The dye can be excited by wavelengths from 488 to 647nm and emits far red fluorescence with emission maximum at 694nm. For live cell nuclear staining we recommend the BioTracker™ NIR694 Nuclear Dye (Water).

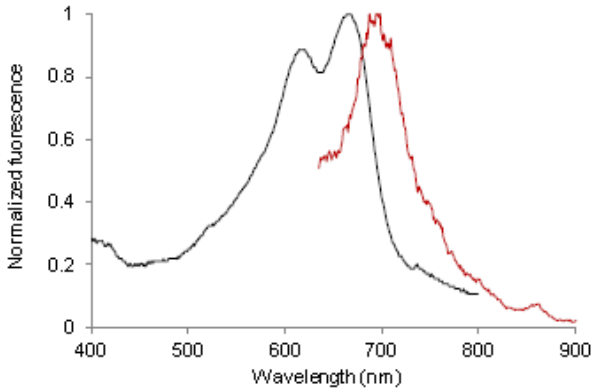


**Figure 1**. Absorption and emission spectra of BioTracker™ NIR694 Nuclear Dye (DMSO).

## Storage

Store BioTracker™ NIR694 Nuclear Dye (DMSO) at 2-8C. Protect From Light.

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

**CAUTION**: BioTracker™ NIR694 Nuclear Dye (DMSO) may be toxic and mutagenic. Handle with care. Dispose as toxic waste according to your institution's regulations.

## Spectral Properties

Absorbance: 662nm
Emission: 694nm

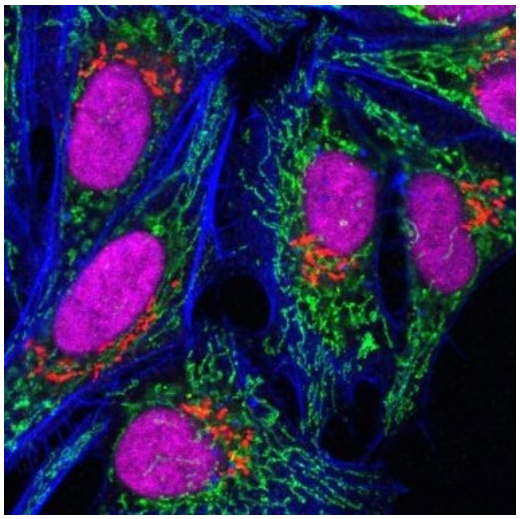

**Figure 2**. Fixed cell staining of Hela cells using BioTracker™ NIR694 Nuclear Dye (DMSO).

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## Assay Protocol

### For selective staining of dead cells

1. Dilute BioTracker™ NIR694 Nuclear Dye (DMSO) to a final concentration of 1X in cell culture medium.
2. Add cell culture medium containing dye to cells and incubate 10 minutes at room temperature.
3. Detect far red nuclear staining by fluorescence microscopy, flow cytometry, or fluorescence plate reader.

### For nuclear staining of fixed and permeabilized cells or tissue sections

1. Fix cells according to your standard protocol (e.g. 4% paraformaldehyde in phosphate buffered saline (PBS) for 15 minutes at room temperature, or chilled methanol for 5 minutes at -20C).
2. Rinse cells twice with PBS.
3. Permeabilize cells in 0.5% Triton X-100 in PBS for 10 minutes at room temperature.
4. Rinse cells twice with PBS.
5. Optional: perform immunofluorescence staining according to your standard protocol.
6. Dilute BioTracker™ NIR694 Nuclear Dye (DMSO) in PBS to a final concentration of 1X. Stain cells for 10-30 minutes at room temperature.

*Note: BioTracker™ NIR694 Nuclear Dye (DMSO) also can be diluted in immunofluorescence blocking buffer or incubated together with antibodies during immunofluorescence staining.*

7. Optional: rinse cells with PBS and mount in fluorescence antifade mounting medium.
8. Detect far red nuclear staining by fluorescence microscopy, flow cytometry, or fluorescence plate reader.