BioTracker™ 633 Red Mitochondria Dye

Live Cell Dye

Cat. # SCT137

pack size: 20X50µg

Store at -20ºC

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

Data Sheet

Background

Mitochondria are organelles found in large numbers in most cells, in which the biochemical processes of respiration and energy production occurs. In metabolically active cells, mitochondria produce a membrane potential by maintaining a proton gradient across the inner and outer membranes. Loss of mitochondrial membrane potential is a hallmark for apoptosis and poor cell health.

BioTracker Mitochondria dyes are fluorogenic stains for staining mitochondria in live cells. The dyes are membrane permeable and become brightly fluorescent upon accumulation in the mitochondrial membrane. Staining is lost when mitochondria become depolarized during cell death, allowing monitoring of cell viability.

The BioTracker™ 633 Red Mitochondria Dye can be detected using the red Cy5 channel. The fluorescence is dependent on mitochondrial membrane potential, and the dye can be used to monitor changes in mitochondrial membrane potential in cells during apoptosis.

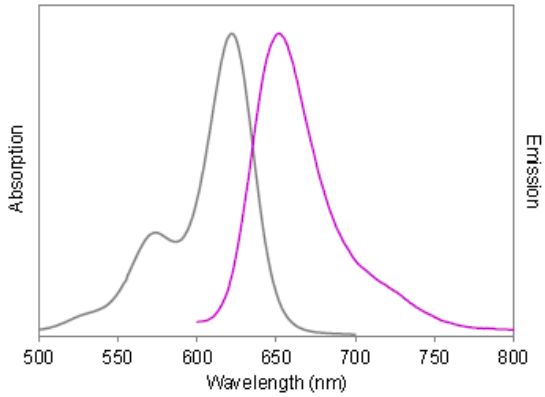

Figure 1. Excitation and emission spectra of BioTracker 633 Red Mitochondria Dye.

Kit Components

1) 20 vials of 50µg lyophilized dye

Storage

Store BioTracker 633 Red Mitochondria Dye at -20ºC. Protect From Light.

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

Spectral Properties

Absorbance: 622nm
Emission: 648nm

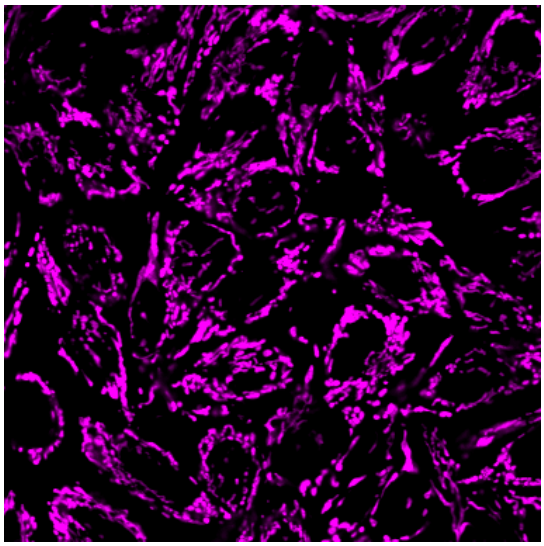

Figure 2. Hela cells stained with BioTracker 633 Red Mitochondria Dye.

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Assay Protocol

Reconstitution

1. Prepare 200uM stock solution, dissolve one 50ug vial of lyophilized dye in 460µL anhydrous DMSO or DMF. Store at -20°C.

Live Cell Staining

1. When cells are at appropriate confluence, remove the medium and add pre-warmed medium containing 100nM BioTracker Mitochondria dye. For suspension cells, pellet the cells and resuspend in medium containing diluted BioTracker Mitochondria dye.

Note: The optimal staining concentration may vary by cell type and application. We recommend performing an initial test with the dyes at concentrations between 20-200 nm. At higher concentrations, other structures may be stained.

Note: Alternatively, the dye can be added directly to the culture medium. We recommend making a dilute stock solution in culture medium to avoid exposing the cells to a transient high concentration of dye. For example, dilute dye to 10 times the final desired concentration in culture medium, and then add 1/10 volume of the dilute stock to the medium on the cells and mix well by gently pipetting up and down.

2. Incubate cells for 15 minutes or longer at 37°C. Washing is not required before imaging.

Note: Longer staining times may result in brighter staining. BioTracker Mitochondria dyes show no obvious toxicity at 100 nM in MCF-7 cells with incubation times up to 72 hours, but toxicity may vary by cell type.

3. Analyze fluorescence by fluorescence microscopy or flow cytometry using the appropriate excitation/emission settings or detection channel (see Spectral Properties).

Note: BioTracker Mitochondria dyes are not well-retained after fixation. For fixed cell staining with BioTracker Mitochondria Green, we recommend fixation before staining (see below). Other BioTracker Mitochondria dyes cannot be use in fixed cells.