

Data Sheet

BioTracker™ MemBright 640 Live Cell Dye

Live Cell Probe

SCT085**Pack Size: 50 µL****Store at -20 °C****FOR RESEARCH USE ONLY****Not for use in diagnostic procedures. Not for human or animal consumption.**

Background

The BioTracker™ MemBright 640 live cell dye is a “turn-on” fluorescence probe emitting in the far-red spectrum for the imaging of plasma membranes of live cells. Probes specific for the plasma membrane are fundamental tools for marking cell boundaries. MemBright probes use a unique mechanism, existing in a self-quenched nanoparticle state. On contact and propagation within the cell membrane, the probe becomes fluorogenic, demonstrating remarkably high signal-to-background ratio. These live cell membrane probes are compatible with two-photon imaging, super resolution imaging, and are suitable for use in live or fixed cells. Their exceptional photostability and lack of cytotoxicity make MemBright probes optimal for long term imaging studies. The key characteristics of these plasma membrane probes permit use in a broad spectrum of fluorescence microscopy applications, and in flow cytometry.

Spectral Properties

Excitation: 650 nm

Emission: 675 nm

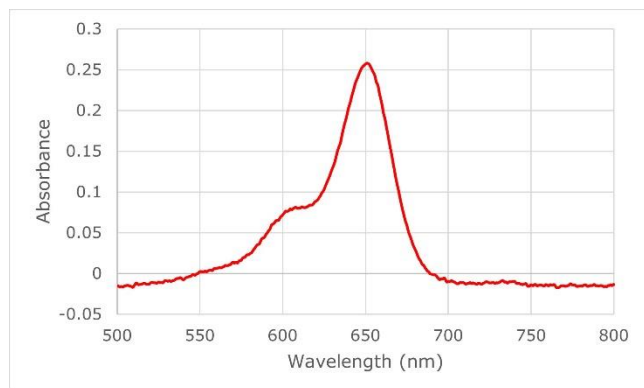


Figure 1: Probe absorbance data. 7 µL of probe at stock concentration (200 µM) was diluted in 1 mL of DMSO before undergoing an absorbance scan. Spectral scans were conducted using a PerkinElmer® FL8500 Fluorescence Spectrophotometer.

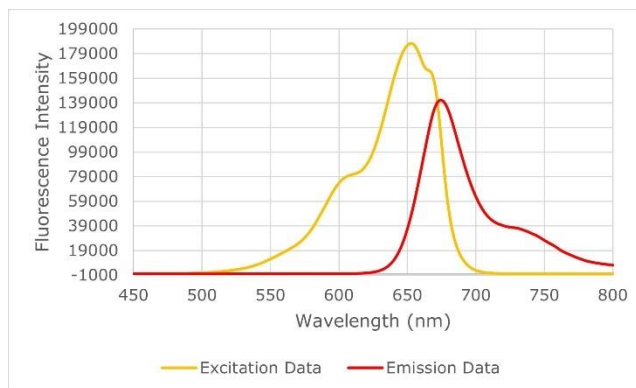


Figure 2: Probe excitation and emission data. 7 µL of probe at stock concentration (200 µM) was diluted in 1 mL of DMSO before undergoing excitation and emission scans. Spectral scans were conducted using a PerkinElmer® FL8500 Fluorescence Spectrophotometer.

Source

BioTracker™ MemBright 640 Live Cell Dye (SCT085) does not contain genetically modified organisms.

Quality Control Testing

- Purity: $\geq 98\%$ confirmed by HPLC, HNMR, LC-MS and elemental analysis.
- Molar Mass: 1396.4 g/mol.

Storage and Handling

Store BioTracker™ MemBright Live Cell Dye at $-20\text{ }^{\circ}\text{C}$, protected from light.

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

Presentation

200 μM blue solution in 50 μL DMSO

Representative Data

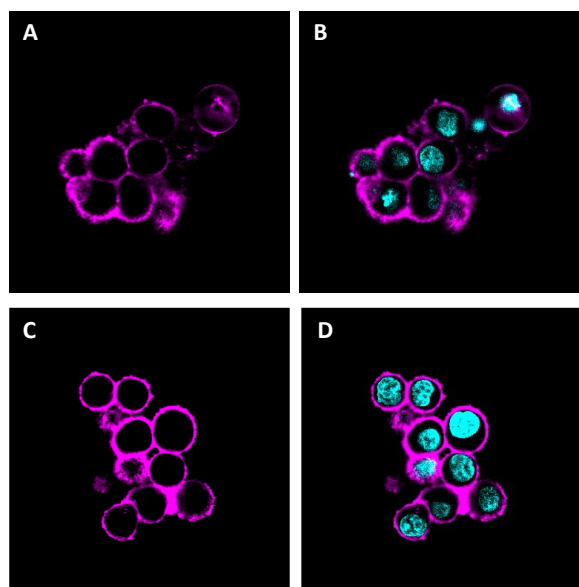


Figure 3: Confocal microscopy images of MemBright-640 staining. **(A, B)** KB human endocervical adenocarcinoma cells were cultured and stained with 200 nM MemBright-640 dye solution (magenta), and **(B, D)** co-stained with 7 μM Hoechst nuclear dye (cyan).

Protocols

Preparing BioTracker™ MemBright-640 live cell dye stock solution

1. Warm the vial to the room temperature.
2. Before opening the vial, briefly spin down the solution to bottom by a microcentrifuge or by a desktop centrifuge.
3. Aliquot and store stock solution at $-20\text{ }^{\circ}\text{C}$ or below for longer storage.

Labeling cells

1. Culture cells in an appropriate medium and vessel for fluorescence microscopy.
2. Prepare the MemBright-640 staining solution by diluting the MemBright-640 stock solution 1:2500 in culture medium.
3. Remove the cell culture medium from the cells. If desired, counterstain for 10-20 minutes with a DNA dye and wash.
4. Add sufficient MemBright staining solution to cover the cells.
5. Immediately observe the cells under fluorescence microscope for fluorescence: $\lambda_{\text{ex}} = 640 \text{ nm}$, $\lambda_{\text{em}} = 640\text{-}800 \text{ nm}$, without washing.

Note: Optimal concentration must be determined by end user.

References

1. Collot M, Ashokkumar P, Anton H, Boutant E, Faklaris O, Galli T, Mély Y, Danglot L, Klymchenko AS. 2019. MemBright: A Family of Fluorescent Membrane Probes for Advanced Cellular Imaging and Neuroscience. Cell Chemical Biology. 26(4):600-614.e7. doi: <https://doi.org/10.1016/j.chembiol.2019.01.009>.

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