

# BioTracker™ 575 Red Fe2+ Dye



Live Cell Dye

Cat. # SCT030

pack size: 10x50µg

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

Store at -20°C

Data Sheet

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## Background

Iron (Fe<sup>2+</sup>) is an essential element for blood production. About 70 percent of your body's iron is found in the red blood cells of your blood called hemoglobin and in muscle cells called myoglobin. Iron is an essential metal for living organisms, but dysregulation of its homeostasis at the cellular level can trigger detrimental oxidative and/or nitrosative stress and damage events.

The BioTracker™ 575 Red Fe<sup>2+</sup> Dye is a fluorescent imaging probe for the detection of iron (II) in living cells. This probe is localized in Golgi, and reacts selectively with Fe<sup>2+</sup>.

## Storage

Store BioTracker 575 Red Fe<sup>2+</sup> Dye at -20°C, desiccate and protect from light

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

## Spectral Properties

Absorbance: 540nm  
Emission: 575nm

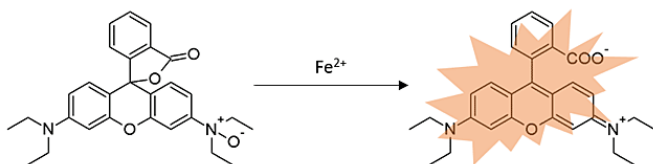


Figure 1. BioTracker 575 Red Fe<sup>2+</sup> Dye mechanism

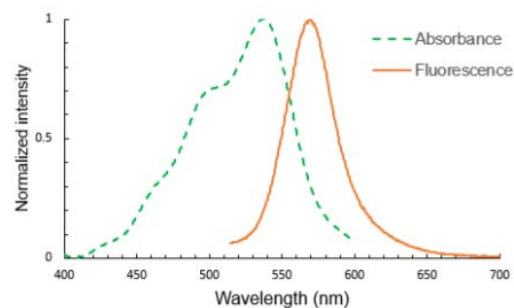


Figure 2. Absorbance/Fluorescence spectrum of BioTracker 575 Red Fe<sup>2+</sup> Dye response to iron(II) iron. Reacting Dye with Fe<sup>2+</sup> for 1 h at 37°C, peak of the fluorescence appears around 575 nm.

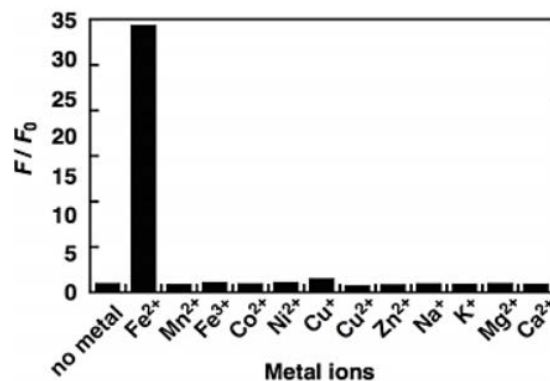


Figure 3. BioTracker 575 Red Fe<sup>2+</sup> Dye is selective to FE<sup>2+</sup> ions.

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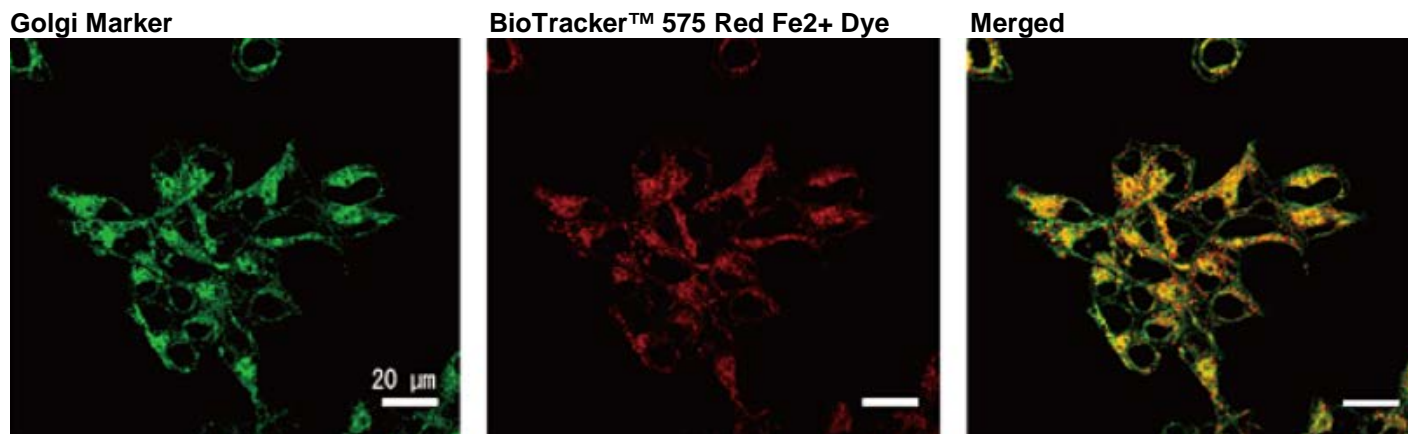


Figure 4. BioTracker 575 Red Fe<sup>2+</sup> Dye selectively reacts with Fe<sup>2+</sup> in Golgi apparatus in HepG2 cells.

## Protocol

### Reagent Preparation

1. Before opening the vial, spin down the solid to the bottom by a microcentrifuge or by a desktop centrifuge.
2. Add 109  $\mu$ l of high-purity DMSO to one vial of Dye to make a 1 mM stock solution.
3. Dilute the stock solution with HBSS to achieve a 5  $\mu$ M cell stain solution.
4. Remove cell culture media and rinse twice with HBSS. Add stain solution to the dish and incubate for 1 hour.
5. Replace the buffer to the iPSC culture medium or HBSS and observe the cells using a fluorescence microscope.

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