BioTracker™ TP-HOCL1 Live Cell Dye

Live Cell Dye

Cat. # SCT043

pack size: 1mg

Store at -20ºC

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

Data Sheet

Background

Hypochlorous acid (HOCl) is a highly potent reactive oxygen species (ROS) and helps eliminate pathogens in the innate immune system. Mounting evidence indicates that intracellular HOCl plays additional important roles in regulating inflammation and cellular apoptosis. Subcellular detection of HOCL is currently limited due to low concentration, strong oxidization, and short lifespan of the analyte.

The BioTracker™ TP-HOCL1 dye is a live cell two-photon green fluorescent "turn-on" imaging probe for HOCL. The probe exhibit fast response times, good selectivity, and high sensitivity towards hypochlorous acid in living cells.

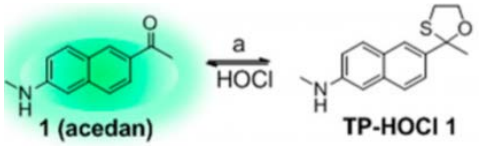

Figure 1. TP-HOCL1 mechanism. Acedan was chosen as the fluorescence reporting group due to its excellent photophysical properties resulting from the typical "push−pull" (amineketone) structure. 2- mercaptoethanol and 1, 2-ethanedithiol were employed to protect the ketone of acedan in the design of HOCl probes. Reaction of the probe with HOCl, which deprotects the oxathiolane/mercaptal group to reveal the ketone, would lead to fluorescence enhancement

Storage

Store BioTracker™ TP-HOCL1 Live Cell 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: 375nm
Emission: 500nm

Quality Control

Purity: ≥ 98% confirmed by HNMR, LC-MS and HPLC and elemental analysis
Molar Mass: 258.36 g/mol

Protocol

Reagent Preparation

1. Before opening the vial, spin down the solid to the bottom by a microcentrifuge or by a desktop centrifuge.
2. Warm the vial to the room temperature and add DMSO to make a 1000X stock solution of 10-20 mM (freeze aliquots at -20°C).
3. Dilute in cell culture media at a final concentration of 10-20 µM and add to cells in culture. Incubate at 37°C for 20-30 minutes.
4. Wash cells with PBS buffer before imaging

Note: Optimal concertation must be determined by end user.

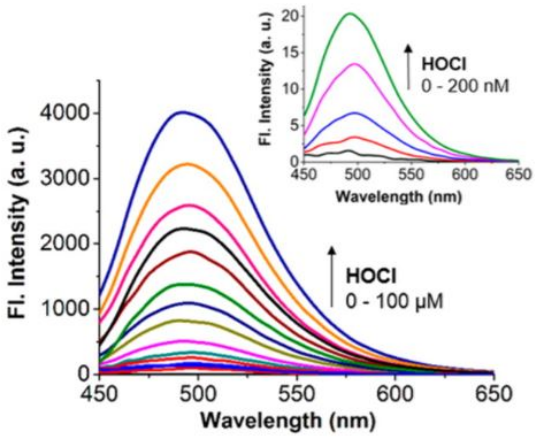

Figure 2. Fluorescence intensity of TP-HOCl1 (5 µM) as a function of HOCl concentration (0-100 µM). Inset shows Fluorescence spectra of TP-HOCl1 (0.5 µM) before and after adding HOCl at low concentrations (0–200 nM).

References

Chang YT et al. *Development of Targetable Two-Photon Fluorescent Probes to Image Hypochlorous Acid in Mitochondria and Lysosome in Live Cell and Inflamed Mouse.* Model. J Am Chem Soc. 2015 May 13;137(18):5930-8.

Rev.1.0/2018-05-03/SCT043/NJA