

# BioTracker™ LYSO-TP Live Cell Dye



Live Cell Dye

Cat. # SCT044

pack size: 1mg

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

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™ LYSO-TP dye is a live cell two-photon green fluorescent “turn-on” imaging probe for HOCl. The probe targets HOCl specifically in the lysosomes of cells. The probe exhibits fast response times, good selectivity, and high sensitivity towards hypochlorous acid in living cells.



**Figure 1. LYSO-TP mechanism.** Acedan was chosen as the fluorescence reporting group due to its excellent photophysical properties resulting from the typical “push-pull” (amineketone) structure. Reaction of the probe with HOCl, which deprotects the oxathiolane/mercaptal group to reveal the ketone, would lead to fluorescence enhancement. To monitor subcellular HOCl levels, morpholine was introduced at a long distance from the reaction site to ensure the probe's intracellular localization.

## Storage

Store BioTracker™ LYSO-TP 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

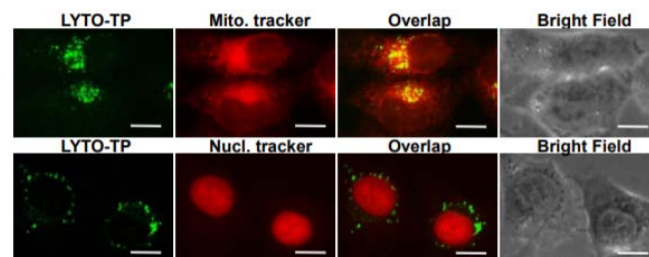
Purity: ≥ 98% confirmed by HNMR, LC-MS and HPLC and elemental analysis  
Molar Mass: 357.49 g/mol

## 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  $\mu$ M and add to cells in culture. Incubate at 37°C for 20-30 minutes.
4. Wash cells with PBS buffer before imaging.

*Note: Optimal concentration must be determined by end user.*



**Figure 2.** Intracellular localization of LYSO-TP in HeLa cells.

## 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.

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