ER-Tracker Green

Introduction

ER-Tracker Green is a green-fluorescent endoplasmic reticulum (ER) probe that selectively labels ER of live cells. ER-Tracker Green is the BODIPY FL labeled glibenclamide. Glibenclamide, a drug for diabetic patients, specially binds to the sulphonylurea receptors of ATP-sensitive K^+ channels on ER. So fluorescent-labeled glibenclamide (ER-Tracker Green) can label ER. Unlike conventional ER probe $DiOC_6(3)$, ER-Tracker Green does not appear to be toxic to cells at low concentrations, while it is highly selective for ER and rarely stains mitochondria. ER-Tracker Green stains live cells well but is not well-retained after fixation with formaldehyde. Glibenclamide may affect ER function, and variable expression of sulphonylurea receptors in some special cell types may lead to non-ER labeling.

This product is supplied as a lyophilized powder. Dissolve a vial in 20 μL of DMSO to make 1 mM ER-Tracker Green Stock Solution.

Components and Storage

Components	B8812-16 μg
ER-Tracker Green	16 μg
This product should be stored at -20°C away from light and moisture, stable for at least 6 months.	

Properties

Physical Appearance	Lyophilized powder
M.Wt	783.09
Cas No.	730931-46-1
Formula	$C_{37}H_{42}BClF_2N_6O_6S$
Ex/Em	504/511

Protocol

1. **Preparation of the stock solution:** Allow ER-Tracker Green to warm to room temperature before use, then briefly centrifuge to deposit the lyophilized powder at the bottom of the vial. Dissolve a vial in 20 μL of DMSO to make 1 mM ER-Tracker Green Stock Solution. Unused ER-Tracker Green Solution (1 mM) should be stored at -20°C away from light and moisture.

2. **Preparation of the working solution:** Dilute appropriate ER-Tracker Green (1 mM) in a suitable buffer (for example, HBSS with Calcium and Magnesium) to make a working solution. The recommended concentration of the working solution is 1 μM. To reduce potential labeling artifacts, keep the concentration of working solution as low as possible. It is suggested to dilute ER-Tracker Green when using it.

***Note:** The optimal concentration of working solution varies depending on the type of cells, the recommended ratio of dilution is 1:1000-1:3000.

3. **Labeling of ER:** For adherent cells, grow cells to reach the desired density. Remove the growth medium and wash with a suitable buffer (for example, HBSS with Calcium and Magnesium). Add a pre-warmed (37°C) working solution to cover the cells. Incubate at 37°C away from light for 15-30 min. Replace the working solution with a fresh medium. Then detect the fluorescence signal of cells by a microscope with a FITC filter set.

***Note:** The optimal time for incubation varies depending on the type of cells. For suspension cells, harvest cells and perform similarly to the adherent cells.

4. **Fixation of cells (optional step):** If fixation is needed, fix cells with 4% formaldehyde for 2 min at 37°C。after fixation, wash cells 2 times in a suitable buffer prior to further staining, mounting and viewing.

***Note:** Permeabilization is not recommended. Permeabilization with Triton X-100 results in no fluorescence signal.

Note

1. Fluorescent probes are easy to quench, please protect them from light when using.
2. For your safety and health, please wear lab coats and gloves during the experiment.
3. For research use only. Not to be used in clinical diagnostic or clinical trials.

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