Mito-Tracker Green

Introduction

Mito-Tracker Green is a green-fluorescent mitochondria probe that selectively labels mitochondria. Some conventional fluorescent probes for mitochondria such as tetramethylrosamine and rhodamine 123, are sequestered by functional mitochondria. These probes are easily washed out of cells upon loss in the mitochondria membrane potential. This characteristic limits the use in experiments that require regents that affect the function of the mitochondria. To overcome the limitation, it is better to use Mito-Tracker Green which labels mitochondria regardless of mitochondrial membrane potential. In addition, Mito-Tracker Green stains live cells well but is not well-retained after fixation, so it is not suitable for fixed cell staining.

Components and Storage

Components	B8811-50 μg
Mito-Tracker Green	50 μg

This product should be stored at -20°C away from light and moisture. Stable for 6 months.

Properties

Physical Appearance	Solid
M.Wt	671.87
Cas No.	201860-17-5
Formula	$C_{34}H_{28}Cl_5N_3O$
Ex/Em	490/516
Solubility	Soluble in DMSO

Protocol

1. **Preparation of the stock solution:** Dissolve 50 μg Mito-Tracker Green in 74.4 μL anhydrous DMSO to make a 1 mM stock solution. The stock solution should be stored at -20°C away from light. It is recommended to aliquot the stock solution into small volumes and avoid repeated freeze/thaw cycles.

***Note:** Allow Mito-Tracker Green to warm to room temperature before using.

2. **Preparation of the working solution:** Dilute the stock solution in a suitable buffer (for example, HBSS with Calcium and Magnesium) or growth medium to make a working solution. The recommended concentration of

the working solution can be in the range of 20-200 nM. To reduce potential mitochondria toxicity and non-specific staining, keep the concentration of working solution as low as possible. It is suggested to dilute Mito-Tracker Green when using it.

***Note:** The optimal concentration of the working solution varies depending on the type of cells.

3. **Labeling of Mitochondria:** For adherent cells, grow cells to reach the desired density. Remove the growth medium and add a pre-warmed (37°C) working solution to cover the cells. Incubate at 37°C away from light for 15-45 min. Replace the working solution with a fresh, pre-warmed, suitable buffer or growth 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.

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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