

Product Data Sheet

Product Name: Cell-Tracker Red CMTPX

Cat. No.: GC26327

Chemical Properties

Cas. No.

Formula $C_{42}H_{40}ClN_3O_4$

M.Wt 686.25 g/mol

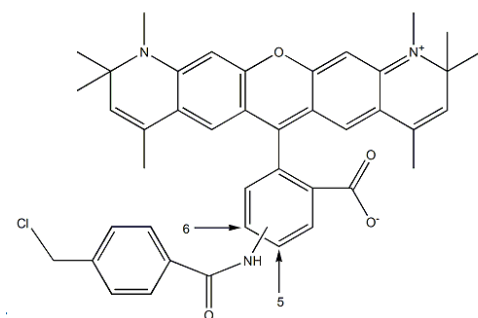
Solubility Dissolved in DMSO

Storage -20°C , away from light, and dry.

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Protocol

1. Cell preparation

Cultivate cells in appropriate culture medium. Adhering cells can climb and grow in a culture dish containing a cover glass, and sufficient growth medium can be loaded.

The following steps describe the process of adding dye to cultured cells and imaging them under a fluorescence microscope. Various factors, such as loading dyes into cells or tissues, may require modifications to certain conditions based on specific cell types.

The optimal staining concentration of the probe needs to be adjusted according to its purpose. It is recommended to measure at least one concentration within a 10 fold range when conducting experiments. Generally speaking, long-term staining (>3 days) or the use of rapidly dividing cells

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require 5-25 μ M of dye. For short-term experiments such as vitality testing, use low concentration dyes (0.5-5 μ M). To maintain normal cell morphology and reduce potential artifacts, use low concentrations of dyes as much as possible.

2.1 Preparation of Cell Tracker staining solution

- ① Before opening the bottle, remove the product from the refrigerator and place it in Xingwen to let it warm up for at least 20 minutes
- ② Dissolve the powder with high-quality anhydrous DMSO to a concentration of 10mM. For example, for 50 μ g Cell Tracker Red CMTPIX (Mw: 686.25 g/mol) freeze-dried powder, add 7.2 μ l DMSO is fully dissolved to obtain 10mM mother liquor.
- ③ Dilute the mother liquor with serum-free culture medium to a working concentration of 0.5-25 μ M. Preheat the dyeing solution to 37 $^{\circ}$ C.

2.2 Suspension cell staining steps

- ① Collect cells by centrifugation and aspirate the supernatant. Gently resuspend cells using preheated Cell Tracker staining solution.
- ② Incubate for 15-45 minutes under suitable growth conditions for specific cell types.
- ③ Centrifuge the cells and aspirate the Cell Tracker staining solution.
- ④ Add the selected culture medium and distribute the labeled cells onto a glass slide or into the selected culture vessel.
- ⑤ Select appropriate excitation and emission wavelength filters according to Appendix 1 for imaging detection.

2.3 Staining steps for adherent cells

- ① Remove the culture medium.
- ② Gently add preheated Cell Tracker staining solution.
- ③ Incubate for 15-45 minutes under suitable growth conditions for specific cell types.

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- ④ Suck off the Cell Tracker staining solution.
- ⑤ Add the selected culture medium.
- ⑥ Select appropriate excitation and emission wavelength filters according to Table 1 for imaging detection.

3. Fluorescence microscopy observation

Cell Tracker fluorescent probes can be detected using various fluorescence optical microscopes with standard optics and image enhancement. Select the appropriate filter according to the dye. See Appendix 1 for the spectral characteristics of the Cell Tracker fluorescent probe.

matters needing attention

Fluorescent dyes all have quenching problems, so be careful to avoid light during storage and operation. Avoid using buffer solutions containing hydrogen and organic groups. For your safety and health, please wear laboratory clothes and disposable gloves when operating.

Background

Cell Tracker fluorescent probes are excellent tools for monitoring cell movement, localization, proliferation, migration, chemotaxis, and invasion.

Cell Tracker Red CMTPX can freely penetrate the cell membrane and enter the cell, transforming into non permeable reaction products within the cell. The product can be well retained in live cells after several passages. Within the cell population, dyes only transfer to offspring cells and not to neighboring cells.

The Cell Tracker Red CMTPX is specially designed to display fluorescence for at least 72 hours (typically 3-6 generations). This dye exhibits ideal tracking characteristics: stability, non toxicity at working concentrations, good retention in cells, and bright fluorescence at physiological pH. In addition, the excitation and emission spectra (577/602nm) of Cell Tracker Red CMTPX are well separated from the green fluorescent protein GFP, making it suitable for multiple labeling.

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