

Product Data Sheet

Product Name: TO-PRO 1

Cat. No.: GC64792

Chemical Properties

Cas. No. 157199-59-2

Formula C₂₄H₂₉I₂N₃S

M.Wt 645.38

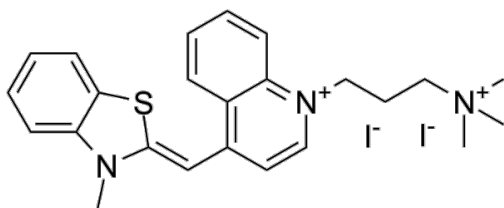
Solubility

Storage Store at -20°C

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

This plan only provides a guide, please modify it to meet your specific needs.

1. Prepare working solution: Use a suitable buffer (such as HHBS or PBS) to dilute the TO-PRO 1 stock solution with a concentration of 5 mM and prepare a working solution of 1-5 μM.

Notice:

- ① When using the stock solution for the first time, it is recommended to pack it into small sizes according to the single dosage and freeze it in the dark at -20°C or -80°C to avoid repeated freezing and thawing;
- ② It is recommended to set the dye solution concentration gradient during the first experiment to

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

determine the optimal working concentration;

③High dye concentration may cause non-specific staining of other cellular structures;

④Please adjust the concentration of the working fluid according to the actual situation and prepare it now.

2. Cell staining (taking 6-well plate as an example)

2.1 Cell suspension staining

(1) Centrifuge suspended cells at 1000g for 3-5 minutes. Discard the supernatant and wash twice with PBS for 5 minutes each time.

(2) Wash the adherent cells twice with PBS, add trypsin to digest the cells, and centrifuge at 1000g for 3-5 minutes after digestion is completed.

(3) Add 1 mL of TO-PRO 1 dye working solution preheated at 37 °C to resuspend the cells, and incubate at 37 °C in the dark for 15-60 minutes. The optimal culture time for different cells is different.

(4) After the incubation, centrifuge at 1000g for 5 minutes, remove the supernatant, and add PBS for washing 2-3 times.

(5) Resuspend the cells in buffer and observe through fluorescence microscopy or flow cytometry.

2.2 Cell adhesion staining

(1) Culture adherent cells on sterile coverslips.

(2) Remove the coverslip from the culture medium, aspirate the excess culture medium, and place the coverslip in a humid environment.

(3) Add 100 µL of dye working solution from one corner of the coverslip, shake gently to evenly cover all cells with the dye, and incubate at 37 °C in the dark for 15-60 minutes.

(4) Aspirate and discard the dye working solution, wash the coverslip 2 to 3 times with culture solution, and observe with a fluorescence microscope.

3. Microscope detection: The maximum excitation/emission light of TO-PRO 1 after binding to nucleic acid is 515/531 nm.

Precautions:

1) Fluorescent dyes all have quenching problems. Please avoid light as much as possible to slow down fluorescence quenching.

2) For your safety and health, please wear a lab coat and disposable gloves.

References:

[1]. Elena Gorokhova, Lisa Mattsson, Annica M Sundström. A comparison of TO-PRO-1 iodide and 5-CFDA-AM staining methods for assessing viability of planktonic algae with epifluorescence microscopy. 2012 Jun;89(3):216-21. doi: 10.1016/j.mimet.2012.03.005. Epub 2012 Mar 14.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Background

TO-PRO 1 is a monomeric cyanine dye with a single cationic side chain and low base selectivity that is able to enter cells with damaged membranes and bind to nucleic acids, producing bright green fluorescence. In addition, TO-PRO 1 shows excellent staining results for diatoms that are challenging to stain. TO-PRO 1 is almost non-fluorescent when not bound to nucleic acids, but shows strong fluorescence when bound to nucleic acids, with a maximum excitation/emission light of 515/531 nm[1].

References:

[1]. Elena Gorokhova, Lisa Mattsson, Annica M Sundström. A comparison of TO-PRO-1 iodide and 5-CFDA-AM staining methods for assessing viability of planktonic algae with epifluorescence microscopy. 2012 Jun;89(3):216 -21. doi: 10.1016/j.mimet.2012.03.005. Epub 2012 Mar 14.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA