Far-Red Nuclear Stain

Fluorogenic stain for visualization of DNA in live or fixed cells

Catalog #100-1541 0.5 mL 5 mM

STEMCELL™ TECHNOLOGIES
Scientists Helping Scientists™ | WWW.STEMCELL.COM
TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713
INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Far-Red Nuclear Stain is a cell-permeable, far-red fluorogenic dye that is recommended for staining and visualization of cell nuclei in live or fixed cell cultures. As a fluorogenic dye, Far-Red Nuclear Stain exhibits low background, as it only becomes fluorescent upon binding to DNA. Far-red dyes are also advantageous over traditional blue dyes, as they display less autofluorescence and phototoxicity by avoiding DNA damage induced by exposure to UV light. Upon binding to DNA, Far-Red Nuclear Stain emits a far-red signal that can be viewed using fluorescence microscopy, or flow cytometry equipped with a standard cyanine-5 (Cy5) filter set. Far-Red Nuclear Stain is also compatible in multi-color staining of live or fixed cells.

Molecular Weight:	719.74 g/mol
Excitation Wavelength:	651 nm
Emission Wavelength:	681 nm
Stability and Storage:	Store at -20°C. Product stable until expiry date (EXP) on label. Protect product from prolonged exposure to light.
Product Format:	A blue solution in dimethyl sulfoxide (DMSO)
Verified Applications:	Fluorescence imaging
Reported Applications:	Flow cytometry

Directions for Use

The following protocol is for labeling cells in one well of a 24-well plate (e.g. Catalog #100-0097). If using other cultureware, adjust volumes accordingly.

A. PREPARATION OF FAR-RED NUCLEAR WORKING SOLUTION

The suggested working concentration of Far-Red Nuclear Stain is 2 - 10 µM. The optimal concentration of the working solution should be determined for different cell types. High working concentration may cause non-specific staining of other cellular structures.

NOTE: Protect solutions containing Far-Red Nuclear Stain from light.

Live cells

Far-Red Nuclear Stain stock solution (5 mM) should be diluted in warm (37°C) culture medium immediately before use. For example, to prepare a 5 mL working solution of 10 µM Far-Red Nuclear Stain, resuspend 10 µL of Far-Red Nuclear Stain (5 mM) in 5 mL of culture medium.

Fixed cells

Far-Red Nuclear Stain stock solution (5 mM) should be diluted in 1X, room temperature (15 - 25°C) phosphate-buffered saline (PBS). For example, to prepare a 5 mL working solution of 10 µM Far-Red Nuclear Stain, resuspend 10 µL of Far-Red Nuclear Stain (5 mM) in 5 mL of 1X, room temperature PBS.

B. STAINING CELLS

The following protocol is for staining cells with 10 µM Far-Red Nuclear Stain working solution. The optimal concentration of the working solution and incubation time should be determined for different cell types.

Live cells

NOTE: For cells in suspension, pellet cells by centrifugation following your protocol of choice and then follow steps 1 and 2.

1. Aspirate culture medium completely.
2. Immediately add 1 mL of 10 µM Far-Red Nuclear Stain working solution (prepared in section A) and incubate samples at 37°C and 5% CO_2 for 15 - 60 minutes; protect from light.

OPTIONAL: Cells may be fixed after staining with Far-Red Nuclear Stain.

Fixed cells

1. Fix and permeabilize cells as desired.
2. Wash sample three times with PBS.
3. Add 1 mL of 10 µM Far-Red Nuclear Stain working solution (prepared in section A) and incubate samples at room temperature (15 - 25°C) for 5 - 15 minutes; protect from light.
4. Wash sample three times with PBS; leave the final PBS rinse within the well.

C. IMAGING STAINED CELLS

Observe stained cells using a fluorescence microscope or flow cytometer equipped with appropriate filter sets that can detect Cy5, APC, or Alexa Fluor® 647.

References

Zhang G et al. (2015) Genome shuffling of the nonconventional yeast *Pichia anomala* for improved sugar alcohol production. Microb Cell Fact 7(14): 112.

Related Products

For a complete list of related products available from STEMCELL Technologies, visit www.stemcell.com/dyesandstains, or contact us at techsupport@stemcell.com.

Warning

This product is hazardous. Please refer to the Safety Data Sheet (SDS).