ab112138

CytoPainter Lysosomal Staining Kit - Green Fluorescence (Ex405nm)

Instructions for Use

For Staining Lysosomes in live cells by using our proprietary green fluorescence probe

This product is for research use only and is not intended for diagnostic use.

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1. Introduction

Lysosomes are cellular organelles which contain acid hydrolase enzymes to break up waste materials and cellular debris. Lysosomes digest excess or worn-out organelles, food particles, and engulfed viruses or bacteria. The membrane around a lysosome allows the digestive enzymes to work at pH 4.5. The interior of the lysosomes is acidic (pH 4.5-4.8) compared to the slightly alkaline cytosol (pH 7.2). The lysosome maintains this pH differential by pumping protons (H^+ ions) from the cytosol across the membrane via proton pumps and chloride ion channels.

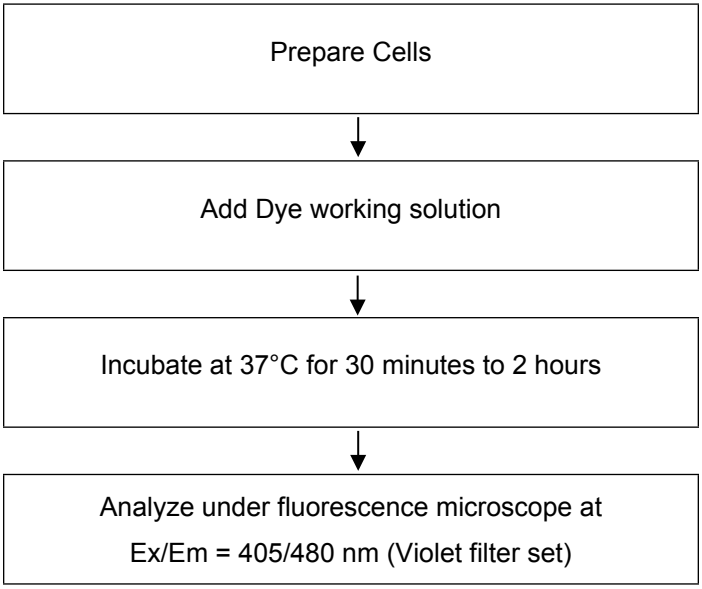
Abcam fluorescence imaging kits are a set of fluorescence imaging tools for labeling sub-cellular organelles such as membranes, lysosomes, mitochondria, nuclei, etc. The selective labeling of live cell compartments provides a powerful method for studying cellular events in a spatial and temporal context.

ab112138 is designed to label lysosomes of live cells in green fluorescence of large Stokes Shift at Ex/Em = 405/520 nm. ab112138 uses a proprietary lysotropic dye that selectively accumulates in lysosomes probably via the lysosome pH gradient. The lysotropic indicator, a hydrophobic compound, easily permeates intact live cells and gets trapped inside the lysosomes. Its fluorescence is significantly enhanced upon entering lysosomes. This key feature significantly reduces its staining background and

makes it useful for a variety of studies, including cell adhesion, chemotaxis, multidrug resistance, cell viability, apoptosis and cytotoxicity. The kit provides all the essential components. It is suitable for both suspension and adherent cells.

2. Protocol Summary

Summary for One 96-well Plate



Note: Thaw all the kit components to room temperature before starting the experiment.

3. Kit Contents

Components	Amount
Component A: LysoGreen-StrK Indicator	1 x 100 µL
Component B: Live Cell Staining Buffer	1 x 50 mL

4. Storage and Handling

Keep at -20°C. Avoid exposure to light.

5. Assay Protocol

Note: This protocol is for one 96 - well plate.

A. Preparation of Lysosomal Staining Solutions

1. Warm LysoGreen-StrK Indicator (Component A) to room temperature.

2. Prepare dye working solution by diluting 20 µL of LysoGreen-StrK Indicator (Component A) to 10 mL of Live Cell Staining Buffer (Component B).

Note 1: 20 µL of LysoGreen-StrK Indicator (Component A) is enough for one 96-well plate. Aliquot and store unused LysoGreen-StrK Indicator (Component A) at < -20°C. Protect from light and avoid repeated freeze-thaw cycles.

Note 2: The optimal concentration of the fluorescent lysosome indicator varies depending on the specific application. The staining conditions may be modified according to the particular cell type and the permeability of the cells or tissues to the probe.

B. Preparation and Staining of Cells

1. For adherent cells: Grow cells either in a 96-well black wall/clear bottom plate (100 µL/well/96-well plate) or on cover slips inside a Petri dish filled with the appropriate culture medium. When cells reach the desired confluence, add equal volume (such as 100 µL/well/96-well plate) of the dye-working solution (from Step A.2). Incubate the cells in a 37 °C, 5% CO_2 incubator for 30 minutes to 2 hours. Observe the cells using a fluorescence microscope fitted with a Violet filter set (Ex/Em = 405/480 nm).

   Note: It is recommended to increase either the labeling concentration or the incubation time to allow the dye to

accumulate if the cells do not appear to be sufficiently stained.

2. For suspension cells: Centrifuge the cells at 1,000 rpm for 5 minutes to obtain a cell pellet and aspirate the supernatant. Resuspend the cell pellet gently in pre-warmed growth medium, and then add equal volume of the dye-working solution (from Step A.2). Incubate the cells in a 37 °C, 5% CO_2 incubator for 30 minutes to 2 hours. Observe the cells using a fluorescence microscope fitted with a Violet filter set (Ex/Em = 405/480 nm).

   Note 1: It is recommended to increase either the labeling concentration or the incubation time to allow the dye to accumulate if the cells do not appear to be sufficiently stained.

   Note 2: Suspension cells may be attached to cover slips and stained as adherent cells (see Step B.1).

6. Data Analysis

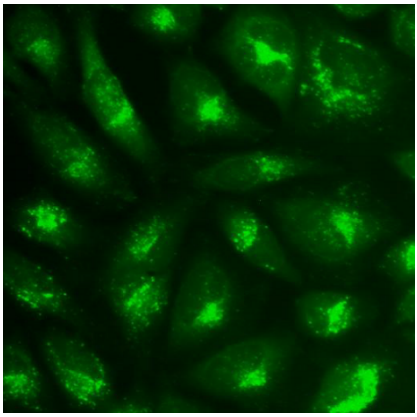


Figure 1. Image of U2OS cells stained with the ab112138 in a black 96-well plate.

For technical questions please do not hesitate to contact us by email (technical@abcam.com) or phone (select "*contact us*" on www.abcam.com for the phone number for your region).

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