abcam
discover more

ab187965 –

Live Cell Staining Kit - Red Fluorescence (Ex/Em = 646/ 660 nm)

Instructions for Use

For labelling live cells in Red fluorescence for the studies that require the fluorescent tag molecules retained inside cells for a relatively longer time.

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

Version: 4 Last Updated: 13 February 2026

Table of Contents

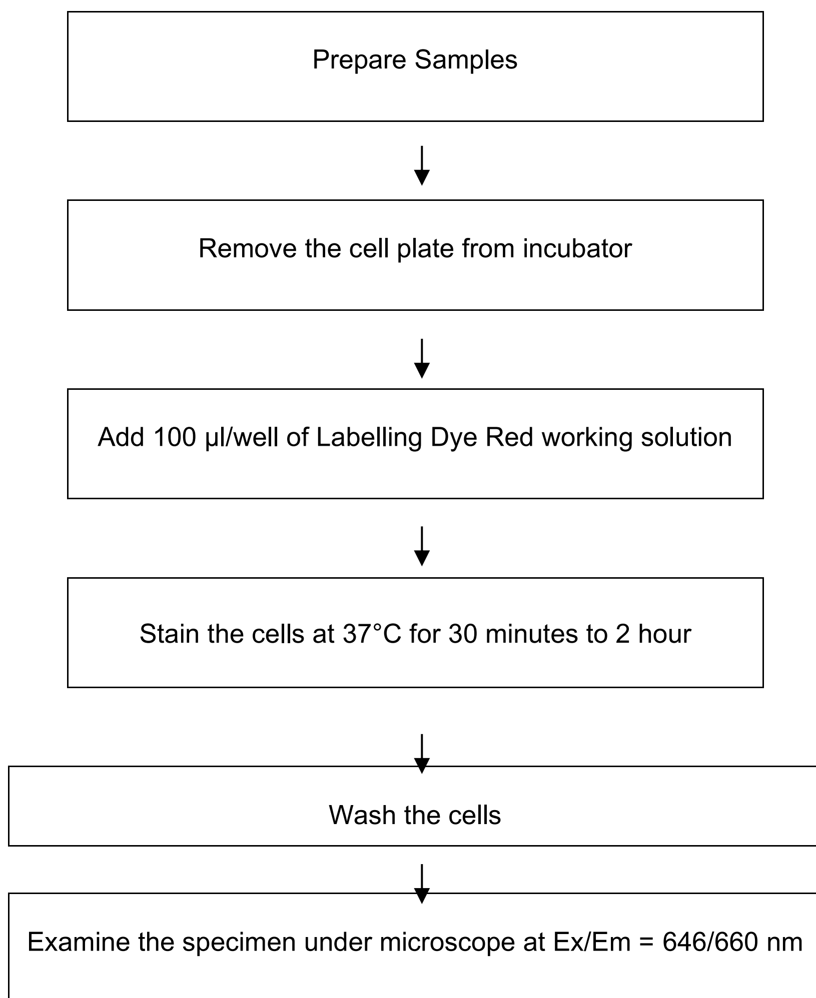
1. Introduction 3
2. Protocol Summary 4
3. Kit Contents 5
4. Storage and Handling 5
5. Assay Protocol 6
6. Data Analysis 8

1. Introduction

Abcam's Live Cell Staining Kits are a set of tools used to label cells for fluorescence microscopic investigations and flow cytometric investigations of cellular functions. The effective labelling of cells provides a powerful method for studying cellular events in a spatial and temporal context.

Live Cell Staining Kit - Red Fluorescence (Ex/Em = 646/ 660 nm) (ab187965) is designed to uniformly label live cells cells in red fluorescence with a proprietary non-fluorescent dye that becomes strongly fluorescence upon entering into live cells. The dye is a hydrophobic compound that easily permeates intact live cells. The hydrolysis of the non-fluorescent substrate by intracellular esterases generates a strongly red fluorescent hydrophilic product that is well-retained in the cell cytoplasm. Cells grown on slides or black wall/clear bottom plates can be stained and quantified in less than two hours. The assay is more robust than the tetrazolium salt or Alarmar Blue™-based ones. It can be readily adapted for many different types of fluorescence platforms such as microplate assays, flow cytometry and fluorescence microscope with Ex/Em = 640/660 nm. And it is useful in a variety of studies, including cell adhesion, chemotaxis, multidrug resistance, cell viability, apoptosis and cytotoxicity. Live Cell Staining Kit - Red Fluorescence (Ex/Em = 646/ 660 nm) (ab187965) provides all the essential components and can be used for both proliferating and non-proliferating cells.

2. Protocol Summary



3. Kit Contents

Components	Amount
Component A: Labelling Dye Red	2 vials
Component B: HHBS	1 bottle (100 ml)
(Hanks’ buffer with 20 mM Hepes)	

4. Storage and Handling

Keep at -20°C. Protect from moisture and light.

5. Assay Protocol

A. Prepare Cells

1. For adherent cells: Plate cells overnight in growth medium at 10,000 to 40,000 cells/well/100 µl for 96-well plates or 2,500 to 10,000 cells/well/25 µl for 384-well plates.

2. For non-adherent cells: Centrifuge the cells from the culture medium and then suspend the cell pellets in culture medium at 50,000-100,000 cells/well/100 µl for 96-well poly-D lysine plates or 10,000-25,000 cells/well/25 µl for 384-well poly-D lysine plates. Centrifuge the plates at 800 rpm for 2 minutes with brake off prior to the experiment.

   Note: Each cell line should be evaluated on an individual basis to determine the optimal cell density.

B. Prepare Labelling Dye Red

1. Prepare Labelling Dye Red stock solution: Add 20 µl of DMSO into one of the Labelling Dye Red vials (Component A) to make stock solution.

   Note: The unused portion of the Labelling Dye Red stock solution should be stored at -20°C. Avoid repeated freeze/thaw cycles and protect from light.

2. <u>Prepare Labelling Dye Red working solution for one cell plate:</u> Add 20 µL of DMSO reconstituted Labelling Dye Red stock solution (from Step B.1) into 10 mL of HHBS (Component B), and mix them well.

C. Stain the cells

1. Remove the growth medium from the cell plates.

   Note: It is important to remove the growth medium in order to minimize the background fluorescence and increase the signal to background ratio.

2. Add 100 µl/well (96-well plate) or 25 µl/well (384-well plate) Labelling Dye Red working solution (from Step B.2) into the cell plate.

3. Incubate the cells in a 37°C, 5% CO_2 incubator for 30 min to 2 hour.

4. Wash cells with HHBS (Component B) for 2 to 3 times.

5. Fill the cell wells with HHBS.

6. Analyze the cells using a fluorescence microscope or flow cytometer with FITC filter sets (Ex/Em = 646/660 nm).

6. Data Analysis

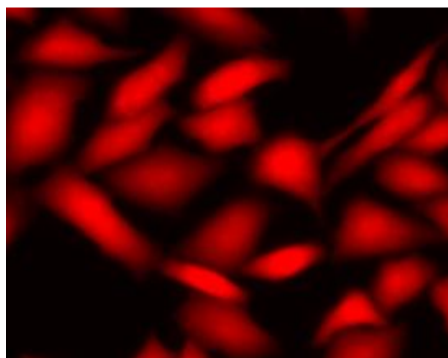


Figure 1. Image of CPA cells stained with Live Cell Staining Kit - Red Fluorescence (Ex/Em = 646/ 660 nm) (ab187965) in a black wall/clear bottom 96-well plate.

abcam®
discover more

Copyright © 2026 Abcam. All Rights
Reserved. The Abcam logo is a registered trademark. All information / detail is correct at time of going to print.

For all technical or commercial enquiries please go to:
https://www.abcam.com/en-us/contact-us
https://www.abcam.cn/contact-us (China)
https://www.abcam.co.jp/contact-us (Japan)