

Cell Explorer™ Live Cell Labeling Kit *Green Fluorescence*

Catalog number: 22607
Unit size: 200 Tests

Component	Storage	Amount
Component A: Calcein Green™	Freeze (<-15 °C), Minimize light exposure	2 vials
Component B: HHBS (Hanks' buffer with 20 mM Hepes)	Refrigerate (2-8 °C), Minimize light exposure	1 bottle (100 mL)

OVERVIEW

Our Cell Explorer™ fluorescence imaging kits are a set of tools for labeling cells for fluorescence microscopic investigations of cellular functions. The effective labeling of cells provides a powerful method for studying cellular events in a spatial and temporal context. This particular kit is designed to uniformly label live cells in green fluorescence. The kit uses non-fluorescent Calcein Green™ that becomes strongly fluorescent upon entering into live cells. Calcein Green™ is a hydrophobic compound that easily permeates intact live cells. The hydrolysis of the non-fluorescent Calcein Green™ by intracellular esterases generates the strongly fluorescent hydrophilic Calcein Green™ fluorophore that is well-retained in the cell cytoplasm. Cells grown in black-walled plates can be stained and quantified in less than two hours. It can be readily adapted for high-throughput assays in a wide variety of fluorescence platforms such as microplate assays, immunocytochemistry and flow cytometry. It is useful for a variety of studies, including cell adhesion, chemotaxis, multidrug resistance, cell viability, apoptosis and cytotoxicity. The kit provides all the essential components with an optimized cell-labeling protocol.

AT A GLANCE

Protocol summary

1. Prepare cells in growth medium
2. Remove the medium
3. Add Calcein Green™ working solution (100 µL/well for 96-well plates or 25 µL/well for 384-well plates)
4. Incubate the cells at 37 °C for 30 - 60 minutes
5. Wash the cells
6. Examine the specimen under fluorescence microscope with FITC filter (Ex/Em = 490/525 nm)

Important Thaw all the components at room temperature before starting the experiment.

KEY PARAMETERS

Instrument:	Fluorescence microscope
Excitation:	FITC filter
Emission:	FITC filter
Recommended plate:	Black wall/clear bottom

PREPARATION OF STOCK SOLUTIONS

Unless otherwise noted, all unused stock solutions should be divided into single-use aliquots and stored at -20 °C after preparation. Avoid repeated freeze-thaw cycles.

1. Calcein Green™ stock solution:

Add 20 µL of DMSO into the vial of Calcein Green™ (Component A) and mix well to make Calcein Green™ stock solution.

Note 20 µL of Calcein Green™ stock solution is enough for 1 plate. For storage, seal tubes tightly.

Note Unused Calcein Green™ stock solution can be aliquoted and stored at <-20 °C for more than one month if the tubes are sealed tightly. Avoid repeated freeze-thaw cycles and protect from light.

PREPARATION OF WORKING SOLUTION

Add 20 µL of Calcein Green™ stock solution into 10 mL of HHBS (Component B) and mix well to make Calcein Green™ working solution.

Note Protect from light.

PREPARATION OF CELL SAMPLES

For guidelines on cell sample preparation, please visit <https://www.aatbio.com/resources/guides/cell-sample-preparation.html>

SAMPLE EXPERIMENTAL PROTOCOL

1. Remove the growth medium from the cell plates.
2. Add 100 µL/well (96-well plate) or 25 µL/well (384-well plate) of Calcein Green™ working solution into the cell plate.
3. Incubate the cells in a 37°C, 5% CO₂ incubator for 30 to 60 minutes.
4. Wash the cells with HHBS (Component B), and add growth medium or HHBS back to the cells.
5. Image the cells using a fluorescence microscope with FITC filter (Ex/Em = 490/525 nm).

EXAMPLE DATA ANALYSIS AND FIGURES

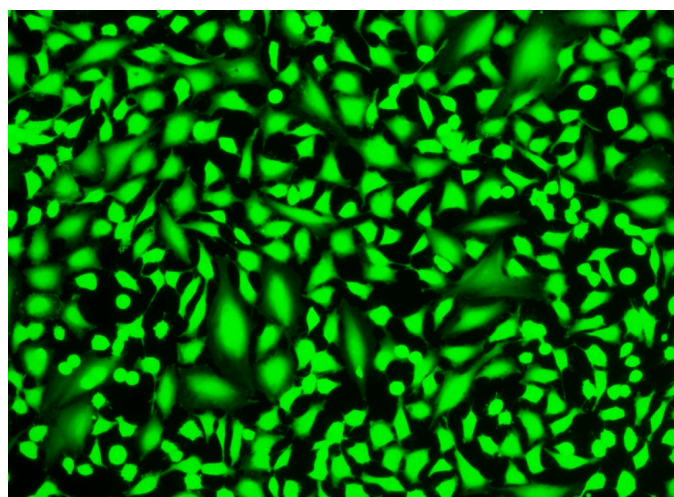


Figure 1. Image of HeLa cells stained with Cell Explorer™ Live Cell Labeling Kit *Green Fluorescence* (Cat#22607) in a Costar black wall/clear bottom 96-well plate. Cells were stained with Calcein Green™ for 30 minutes. Images were acquired with fluorescence microscopy with FITC filter.

DISCLAIMER

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