Cell Navigator™ Live Cell Tubulin Staining Kit *Green Fluorescence*

Catalog number: 23172
Unit size: 100 slides

Component	Storage	Amount (Cat No. 23172)
Component A: Tubulite™ Green	Freeze (< -15 °C), Minimize light exposure	1 vial
Component B: Assay Buffer	Freeze (< -15 °C)	1 bottle (20 mL)
Component C: 25 mM ReadiUse™ probenecid (10X)	Freeze (< -15 °C), Minimize light exposure	1 bottle (10 mL)
Component D: DMSO	Freeze (< -15 °C)	1 vial (100 µL)

OVERVIEW

The Cell Navigator® Live Cell Tubulin Staining Kit (Green Fluorescence) provides a high-performance solution for live-cell microtubule visualization using Tubulite™ Green, a cell-permeable fluorescent probe designed for imaging tubulin structures. Once inside the cell, Tubulite™ Green is activated by intracellular esterases, transforming into a charged, membrane-impermeant form that selectively binds to tubulin and remains retained for long-term imaging.

Emitting in the green fluorescence channel, this tubulin staining kit is ideal for multiplex imaging with other fluorescent stains (emitting in red/blue regions) and nuclear stains like DAPI. It is optimized for live-cell cytoskeletal imaging, allowing researchers to study tubulin polymerization, cytoskeletal rearrangement, and drug-induced microtubule changes under physiological conditions.

AT A GLANCE

Protocol Summary

1. Prepare cells with test compounds at a density of 5×10^5 to 1×10^6 cells/mL.
2. Prepare and add Tubulite™ Green working solution to cells.
3. Incubate at 37 °C for 30 to 60 minutes.
4. Read fluorescence intensity with FITC filter set.

Important Note: Thaw each kit component at room temperature before starting the experiment.

Note: This protocol only provides a guideline, and should be modified according to your specific needs.

Note: Tubulite™ Green does not stain formaldehyde-fixed cells. Cells cannot be fixed after staining with Tubulite™ Green as fixation alters the structure of microtubules.

KEY PARAMETERS

Fluorescence microscope

Emission	FITC filter set
Excitation	FITC filter set
Recommended plate	Black wall/clear bottom

CELL PREPARATION

For guidelines on cell sample preparation, please visit:

https://www.aatbio.com/resources/guides/cell-sample-preparation.html

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

Tubulite™ Green stock solution (500X)

1. Add 25 µL DMSO (Component D) into the vial of Tubulite™ Green (Component A), and mix well.

   Note: Aliquot and store the unused Tubulite™ Green stock solution at -20 °C. Avoid repeated freeze/thaw cycles.

PREPARATION OF WORKING SOLUTION

Tubulite™ Green working solution (1X)

1. Add 2.5 µL of Tubulite™ Green stock solution stock solution and 100 µL 25 mM ReadiUse™ probenecid (Component D) into 1 mL of Assay Buffer (Component B) or buffer of your choice, and mix well.

   Note: For best results, this solution should be used within a few hours of its preparation.

SAMPLE EXPERIMENTAL PROTOCOL

1. Prepare cell samples as per need.
2. Remove the cell growth medium and wash cells with PBS (Not provided) or any other buffer of your choice (Optional).
3. Add 100 µL Tubulite™ Green working solution and incubate them at 37 °C incubator for 30 to 60 minutes.

   Note: The appropriate incubation time depends on the individual cell type and cell concentration used. Optimize the incubation time for each experiment.
4. Remove the working solution and wash cells twice with PBS or any other buffer of your choice supplemented with 2.5 mM probenecid (diluted from Component C).
5. Cover the cells with an Assay Buffer containing 2.5 mM probenecid (prepared by diluting Component C), and then monitor fluorescence intensity using a fluorescence microscope with a FITC filter set.

EXAMPLE DATA ANALYSIS AND FIGURES

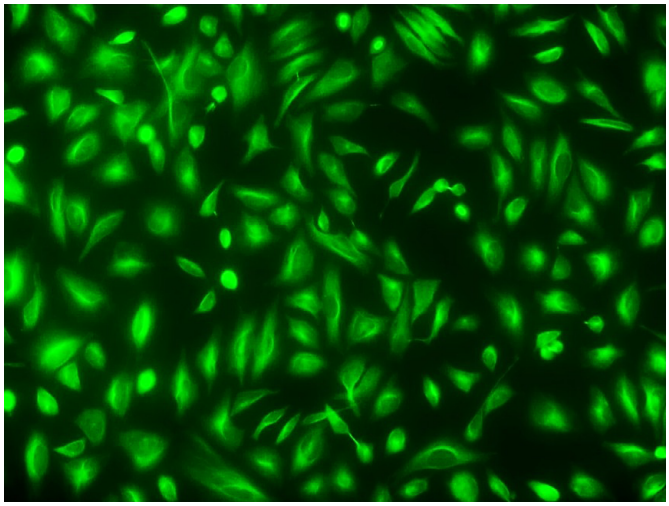

Figure 1. Imaging of tubulin in live HeLa cells: HeLa cells were labeled for 60 minutes at 37°C with Cell Navigator™ Live Cell Tubulin Staining Kit (#23172). Fluorescent images were captured using a fluorescence microscope with a FITC filter set.

DISCLAIMER

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