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FRONTIERS IN LIFE SCIENCE

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CytoSeeing™ <Reversible Cytoplasm Blue>

Catalog NO. FDV-0017

Research use only, not for human or animal therapeutic or diagnostic use.

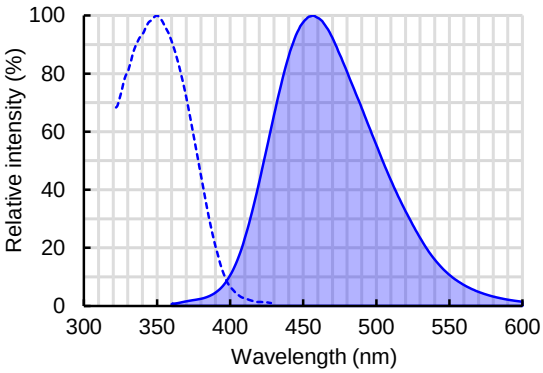
Product Background

Examining morphology of the cells is essential for cell culture, cell differentiation process, cell functions and signal responses. A variety of small-molecule synthetic fluorescence probes have been developed for live cell imaging, however, once inside cells, most of probes for cytoplasmic specific visualization are retained in living cells through several generations. The cells, which are stained by irreversible probes, are difficult to be applied for other biological analysis.

The **CytoSeeing™** is an innovative fluorescence probe which enable us to visualize nuclear and cytoplasmic morphology with a rapid and simple method. The CytoSeeing™ promptly passes through cell membranes under a condition of cell culture medium and can be easily removed after observation by washing for subsequent biological assay. The CytoSeeing™ showed high fluorescence at cytoplasmic area including endomembranes (ER and Golgi apparatus) and cytosol, not staining nuclear, therefore, the CytoSeeing™ can visualize nuclear boundary. The CytoSeeing™ is a useful tool to monitor various cell morphology briefly.

Description

Catalog Number: FDV-0017
Size: 1 mg
Formulation: $C_{17}H_{12}N_3$
Molecular weight: 258.11 g/mol
Solubility: Soluble in DMSO
Fluorescent characteristics:
Ex. 300-390 nm (maximum ~345 nm)
Em. 410-540 nm (maximum ~450 nm)
Note: Compatible with commercial DAPI filter sets, but 405 nm laser in confocal laser microscopy may not excite this dye well.



Reconstitution and Storage

Reconstitution: Stock solution recommended concentration 10 mM in 100% DMSO.
Storage (powder): Store powder at -20°C
Storage (solution): After reconstitution in DMSO, aliquot and store at -20°C.
Avoid repeated freeze-thaw cycles and protected from light.

How to use

General procedure for live cell staining

*This procedure is an example of cultured cell staining under live condition

1. Prepare 10-50 μM CytoSeeing™ in serum-free and phenol red-free medium such as DMEM
   NOTE: Empirically optimize and determine the concentration of CytoSeeing™ for your experiments.
2. Remove culture medium and wash cells PBS several times
3. Incubate cells with CytoSeeing™-containing medium for a few minutes.
4. Observe cells by fluorescent microscopy

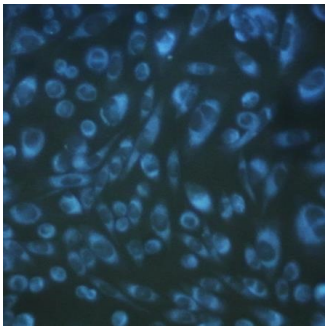
(Option)

5. To remove the dye from cells, wash cells with dye-free PBS several times and culture cells in dye-free medium until fluorescent signal is disappeared.

Application data

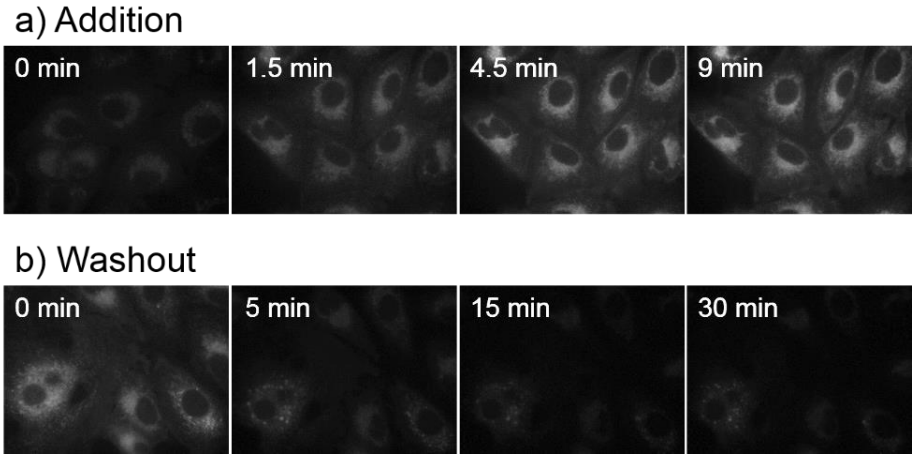
Fluorescence imaging of CHO cells

CHO cells were treated with 10 μM CytoSeeing™ for 30 min and observed by epi-fluorescent microscopy with DAPI filter set without any medium change.



Time-dependent incorporation and washout of CytoSeeing™ in A549 cells

a) A549 cells were incubated with 10 μM CytoSeeing™ in culture medium for various times. The fluorescence was detected in the cytoplasm within 5 min incubation. b) The A549 cells stained with CytoSeeing™ were washed with PBS three times and cultured in fresh medium without the dye (time 0 min). The fluorescence intensity was decreased over time.



Reference

1. Kamada *et al., PLoS ONE*, **11**, e0160625 (2016) Effective Cellular Morphology Analysis for Differentiation Processes by a Fluorescent 1,3a,6a-Triazapentalene Derivative Probe in Live Cells

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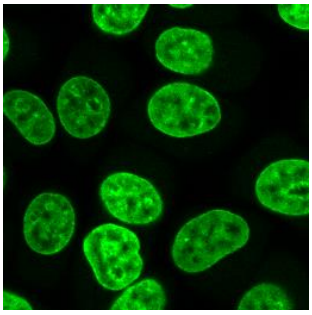
Related products

NucleoSeeing™ <Live Nucleus Green>

NucleoSeeing™ is DNA-responsive green dye for monitoring cell nucleus in live cells. As it shows low cytotoxicity and phototoxicity, it is very suitable for long-term live imaging of cell nucleus.

Catalog No. FDV-0029
Size 0.1 mg
Features
- Easy and quick procedure
- Compatible with 10% FBS
- Validated for both adherent cells and floating cells
- Little influence on cellular functions
- Ex/Em: 488 nm/520 nm (commercial FITC filters are available)



ERseeing™ <Endoplasmic reticulum Green>

ERseeing™ is a novel type of ER-staining dye and shows little pharmacological effects compared with conventional glibenclamide-based ER dyes. ERseeing™ is irreversible staining and is compatible with medium change for long-term imaging.

Catalog No. FDV-0038
Size 10 nmol
Features
- Recommended Ex/Em: 509 nm/524 nm
- Lless pharmacological effect on ER proteins
- Suitable for long-term live cell imaging

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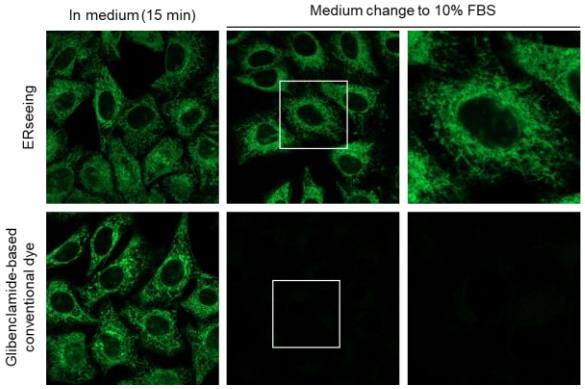
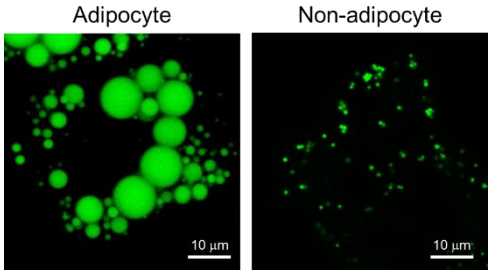


LipiDye™ II <Lipid Droplet Live Imaging>

LipiDye™ II is a highly sensitive lipid droplet staining dye with extremely photostable property. This dye is the second generation of our previous reagent, LipiDye™. This dye allows us to detect small lipid droplets (<1 μm) in non-adipocytes and to apply into long-term live cell imaging for dynamic lipid droplet movements.

Catalog No. FDV-0027
Size 0.1 mg
Features
- Recommended Ex/Em:400-500 nm / 490-550 nm
- Enable to detect <1 μm lipid droplets
- Suitable for long-term live cell imaging
- Extremely photostable compared with conventional dyes
- Compatible with both live and fixed cells



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