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Technical Information

CytoFlamma® Cell Membrane

Overview

Lipophilic organic dyes bear some structural resemblance to natural lipids and can be incorporated into cell wall and liposome. BioActs developed CytoFlamma® cell membrane series as versatile membrane selective fluorescent probes. The probes consist of Flamma dye attached with hydrophobic lipid analogs. They can be used in studies for biophysical analysis of membranes, for tracing lipid transport and metabolism in live cells, and for lipid-mediated signal transduction processes. Flamma® dyes display strong absorption, high fluorescence quantum yield and high photostability, and they maintain good fluorescence activity and stability after conjugation to biomolecules. Due to low toxicity and stable retention, CytoFlamma® cell membrane probes might be useful for long-term cell tracing and can be used as membrane markers of endocytosis and exocytosis. The probes are stable under photooxidation effects induced by ultraviolet excitation and are resistant to spontaneous oxidation. We offer CytoFlamma® cell membrane series as selective fluorescent probes for analyzing cell structure by incorporating into plasma membrane.

Table 1. List of CytoFlamma® cell membrane

Cat. No.	Product name	Ex* (nm)	Em* (nm)
RCS1322	CytoFlamma® 552 Cell-membrane (1mM)	549	564
RCS1323	CytoFlamma® 552 Cell-membrane (5mM)	549	564
RCS1422	CytoFlamma® 648 Cell-membrane (1mM)	648	672
RCS1423	CytoFlamma® 648 Cell-membrane (5mM)	648	672
RCS1622	CytoFlamma® 749 Cell-membrane (1mM)	756	785
RCS1623	CytoFlamma® 749 Cell-membrane (5mM)	756	785

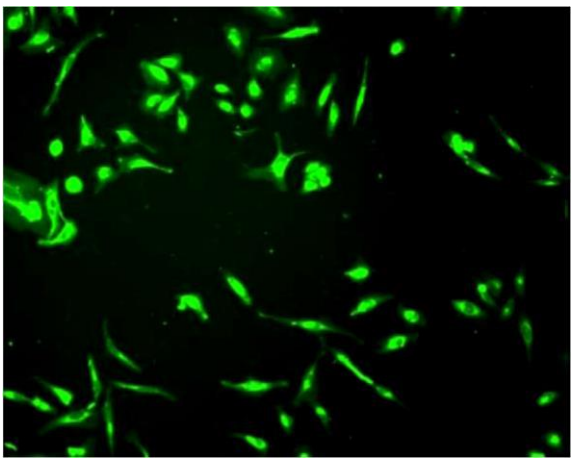

Figure 1. Imaging of CytoFlamma®496 cell membrane staining
Detaching HeLa cell from plate and treating CytoFlamma®496 cell membrane and staining for 5 min, then divided to plate again and cultivated for 24 h, image obtained with FITC filter

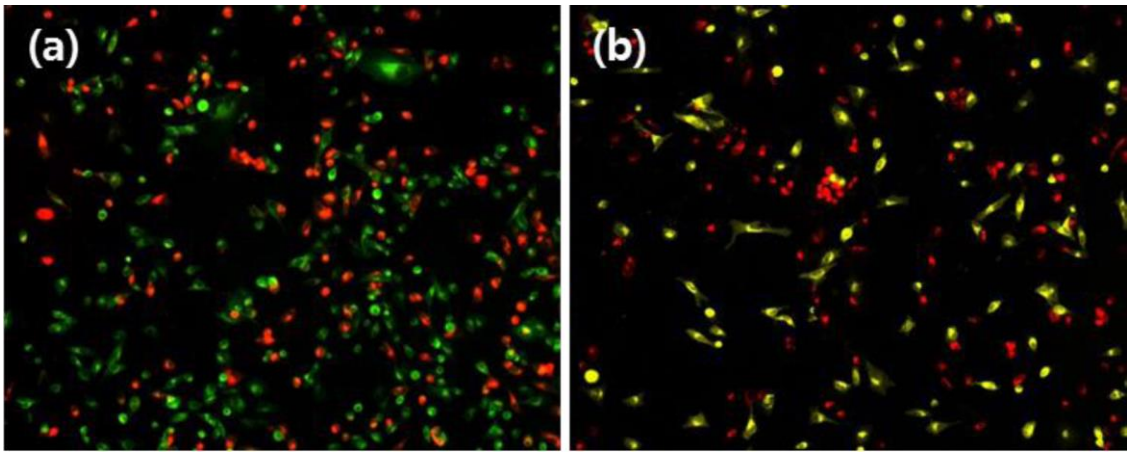

Figure 2. Imaging of Cultured cell after CytoFlamma® cell membrane staining
Image obtained from cell cultivation after staining HeLa cell treated with CytoFlamma® series. (a) CytoFlamma® 496 (green) and CytoFlamma® 648 (red). (b) CytoFlamma® 552(yellow) and CytoFlamma® 648 (red)

※ CytoFlamma® 496 cell membrane is no longer be available because it is discontinued products.

Experimental protocols

Suspension cell label

1. Immerse cells in serum-free medium, HBSS or PBS at a density of 1 × 10^6/mL.
2. Add 5 μL of CytoFlamma® cell membrane solution (1mM) per mL and mix well by pipetting.
3. Cover the mixture for about 20 minutes at 37 °C. The optimal labeling time varies depending on the cell type, and usually uniformly labeled in about 20 minutes.
4. Centrifuge the labeled cells for 5 minutes at 1,500 rpm, 37 °C.
5. Remove the supernatant and resuspend in suitable volume using pre-warmed medium.
6. Repeat steps 4 and 5 twice.

Adherent cell label

1. Culture cells on a Chamber slide (Nunc ™ Lab-Tek ™ Chamber Slide ™ System).
2. Prepare a staining medium by adding 5 μL of CytoFlamma® cell membrane solution (1mM) per mL to medium.
3. Remove the culture medium from chamber, and add the staining medium into the chamber.
4. Cover the mixture for about 20 minutes at 37 °C. The optimal labeling time varies depending on the cell type, and usually uniformly labeled in about 20 minutes.
5. Remove staining medium and add pre-warmed medium and incubate at 37 ℃ for 10 minutes.
6. Repeat step 5 twice.

Custom Labeling Service

Based on accumulated know-how and technologies, BioActs provide a wide range of custom services such as protein fluorescence labeling, organic synthesis, oligonucleotide synthesis upon customers' request. Our reliable technology has acknowledged by our clients from domestic and overseas universities, institutions, in vitro diagnostic and pharmaceutical companies and has enabled to steadily conduct their requirements. In addition, we can introduce fluorescent materials to many other compounds such as organic and inorganic compounds, drugs, hormones, polymer, peptides, proteins, antibodies, etc. We also can provide chemical and optical analytical data, along with cell and animal experiments.


Nucleic acid


Peptide/Protein


Antibody


Small molecules /Polymer

Technical Support

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SDS (Safety Data Sheets) You can find SDS at www.bioacts.com, the official website of BioActs.
CoA (Certificate of Analysis) provides detailed quality information of each product. To see CoA, check the lot number written on each product's page at www.bioacts.com, when having trouble with check, contact to our technical support team

This product can be used only for research purpose, and it can't be used to treat or diagnose human body or animals.
The product cannot be resold to other regions except for South Korea.
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