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Technical Information

FSD Fluor™ Phalloidin Series

Overview

Phalloidin is a rigid bicyclic peptide toxin isolated from Amanita phalloides mushroom that commonly used in imaging applications to selective label F-actin. Phalloidin is known to react stoichiometrically with actin, strongly promote actin polymerization, and stabilize actin polymers. Due to the ability to bind F-actin selectively, fluorescence conjugated phalloidin derivatives are widely used in microscopy for investigating the distribution of F-actin in cells. In biomedical research, fluorescent phalloidin probes are utilized in localizing actin filaments in living or fixed cells as well as for visualizing individual actin filaments in vitro. Fluorescent phalloidins much smaller than fluorescent antibodies, thus they have several advantages for actin labeling such as virtually identical binding properties with actin from different species of plants and animals, much denser labeling of filamentous actin, more detailed images, and lower nonspecific binding. Fluorescent phalloidin conjugates are not permeable to most live cells, thus they should be used to detect cells with compromised membranes. However, fluorescent labeled phalloidins may penetrate the membranes of certain hypoxic cells. BioActs offers FSD Fluor™ Phalloidin series for the labeling and quantitative analysis of F-actin in formaldehyde-fixed and permeabilized tissue sections, cell cultures, and cell-free experiments.

Table 1. List of FSD Fluor™ Phalloidin

Cat. No.	FSD Fluor™ Phalloidin	λ_{Ex} (nm)*	λ_{Em} (nm)*	Packing unit
RCS2114	FSD Fluor™ 488 Phalloidin	495	519	300 tests
RCS2214	FSD Fluor™ 555 Phalloidin	554	565	300 tests
RCS2314	FSD Fluor™ 594 Phalloidin	593	618	300 tests
RCS2414	FSD Fluor™ 647 Phalloidin	651	667	300 tests
RCS2514	FSD Fluor™ 680 Phalloidin	679	696	300 tests
RCS2614	FSD Fluor™ 750 Phalloidin	751	774	300 tests
RCS2714	FSD Fluor™ 800 Phalloidin	774	790	300 tests

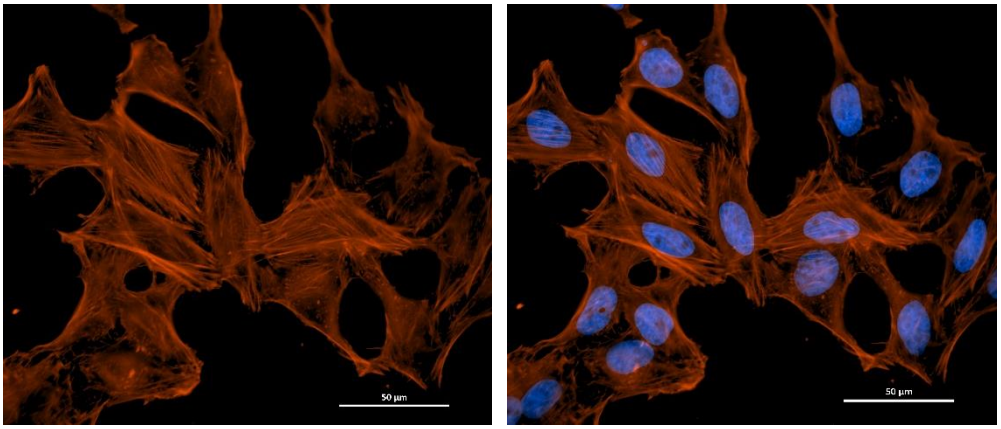

Figure 1. Imaging of Hela cells using FSD Fluor™ 555 Phalloidin (Right: with DAPI)

Actin Labeling Protocol

Materials Required but Not Provided

- Anhydrous DMSO
- 1X Phosphate buffered saline (PBS)
- 4% Paraformaldehyde in PBS
- Triton X-100
- 0.1% PBST
- 2% BSA in 0.1% PBST
- Cell line prepared in a culture container suitable for imaging
- The appropriate cell culture medium for the cell line
- Micropipettes
- Fluorescence microscope
- Cell incubator (37℃)

Adherent cells

1. Seed the cells in confocal dish by adequate amount to prepare stabilized cells.
2. Wash the cells twice with pre-warmed PBS at 37°C
3. Treat cells with 4% paraformaldehyde in PBS for 10 min to fix the cells.
4. Wash the cells twice with PBS.
5. Treat 0.1% Triton X-100 in PBS (0.1% PBST) for 10 min. at room temperature for permeabilization.
6. Wash the cell twice with PBS.
7. (Optional) Add 2% BSA in 0.1% PBST for 30 minutes at room temperature to perform the blocking.
8. Dilute 0. 5uL of Anhydrous DMSO stock solution of FSD Fluor™ Phalloidin into 2% BSA in 0.1% PBS (1mL) and staining for 40min at 37℃.
   - The amount of dye and staining time are inversely proportional
9. Wash the cell twice with PBS.

Additional Mounting for long-term storage

1. Remove PBS from the last step.
2. Treat mounting solution onto of the cells.
3. Seal the edge of the coverslip with nail polish and store the sample in the dark at 2–6°C.

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.

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

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The product cannot be resold to other regions except for South Korea.
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