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Glowing Products for Science™

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Product Information

Concanavalin A (Con A), CF® Dye Conjugates

Unit Size: 5 x 1 mg

Product List

Catalog no.	Conjugate	Ex/Em (nm)
29015	CF®350	347/448
29075	CF®405S	404/431
29074	CF®405M	408/452
29016	CF®488A	490/515
29017	CF®594	593/614
29018	CF®633	630/650
29019	CF®640R	642/662
29020	CF®680	681/698
29080	CF®750	755/777
29058	CF®770	770/797

Storage and Handling

Store the lyophilized conjugate at -20°C, protected from light. When stored as directed, product is stable for at least 1 year from date of receipt.

Product Description

Lectins are versatile probes for detecting glycoconjugates in microscopy and flow cytometric applications and for gel staining of glycoproteins. Concanavalin A (Con A) selectively binds to α-mannopyranosyl and α-glucopyranosyl residues, found in the cell wall of yeast and fungi, and the cell membrane of mammalian cells. In neutral and alkaline solutions, concanavalin A exists as a tetramer with a molecular weight of approximately 104 kDa. In acidic solutions (pH below 5.0), concanavalin A exists as a dimer.

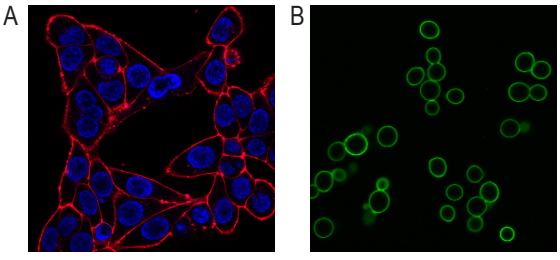

Figure 1. A. HeLa cells were co-stained with CF®594 Con A (red) and Hoechst (blue) and imaged on a Zeiss LSM 700 confocal microscope. B. *S. cerevisiae* yeast were grown overnight in YPD media, centrifuged, and resuspended in Hanks Buffered Salt Solution (HBSS) containing CF®488A Con A (green), then imaged on a Zeiss LSM 700 confocal microscope.

Experimental Protocols

Dye Reconstitution

Stock solutions can be made at 1-5 mg/mL in water or in 0.1 M sodium bicarbonate pH 8.3. A small percentage of the conjugate may remain as a visible aggregate in solution. Before use, centrifuge the Con A conjugate solution briefly in a microcentrifuge, and use the supernatant to prepare staining solution. This step will eliminate protein aggregates that may have formed during storage, thereby reducing nonspecific background staining.

Store reconstituted conjugate solution in aliquots at -20°C, protected from light, and avoid repeated freeze-thaw cycles. Conjugate solution also can be stored at 4°C with the addition of 2 mM sodium azide as a preservative.

Cell Staining Protocol

This staining protocol was developed using the human HeLa cell line. The protocol may need to be optimized for other cell types. Con A may not stain the plasma membrane in all cells; expression and localization of Con A binding sites varies among tissues and cells types.

Note: Cells can be fixed either before or after staining, however, intracellular staining will be more prominent in fixed and permeabilized cells. To retain plasma membrane staining, we recommend staining live cells, followed by formaldehyde-fixation and detergent permeabilization, or staining formaldehyde-fixed cells, followed by detergent permeabilization.

1. Wash the cells once with HBSS (with calcium/magnesium) and replace with HBSS containing the Con A conjugate. Typically, a final concentration of 50-200 ug/mL is used for cell staining.
2. Incubate at room temperature or 37°C for 10-30 minutes. The conjugate may be internalized by endocytosis during incubation at 37°C.
3. Wash 1-2 times with HBSS. Washing is optional for confocal microscopy, but recommended if you are performing epifluorescence imaging.
4. Image cells using the appropriate settings (see Product List for peak excitation and emission for each dye).

Yeast Staining Protocol

This staining protocol was optimized using *Saccharomyces cerevisiae* in culture. The protocol may need to be optimized for other cell types.

1. Culture yeast overnight in media. Measure the absorbance of the culture at 600 nm and dilute the cells to an OD_{600} of approximately 0.1 in HBSS.
2. Pellet cells by centrifugation, and resuspend in HBSS (with calcium/magnesium) containing 50 ug/mL of the Con A conjugate.
3. Incubate at room temperature or 37°C for 30 minutes.
4. Wash 1-2 times with HBSS. Washing is optional for confocal microscopy, but recommended if you are performing epifluorescence imaging.
5. Image cells using the appropriate settings (see Product List for peak excitation and emission for each dye).

Related Products

Catalog number	Product
31063	Yeast Viability Staining Kits
31064	Yeast Live-or-Dye™ Fixable Live/Dead Staining Kit
31062	Yeast Vitality Staining Kit
29067	Calcofluor White
32002-32017	Live-or-Dye™ Fixable Viability Staining Kits
70064	ViaFluor® 405 Live Cell Microtubule Stain
70062	ViaFluor® 488 Live Cell Microtubule Stain
70063	ViaFluor® 647 Live Cell Microtubule Stain
70070	MitoView™ 405 Mitochondrial Stain
70054	MitoView™ Green Mitochondrial Stain
70055	MitoView™ 633 Mitochondrial Stain
70068	MitoView™ 720 Mitochondrial Stain
40083	NucSpot® 470 Nuclear Stain for dead or fixed cells
40081	NucSpot® Live 488 Nuclear Stain for live or fixed cells
40082	NucSpot® Live 650 Nuclear Stain for live or fixed cells
40060	RedDot™1 Far-Red Nuclear Stain for live cells
40061	RedDot™2 Far-Red Nuclear Stain for dead or fixed cells
40046	Hoechst 33342, 10 mg/mL in water
70065	LipidSpot™ 488 Lipid Droplet Stain
70069	LipidSpot™ 610 Lipid Droplet Stain
30021-30024	CellBrite™ Cytoplasmic Membrane Dyes
30070, 30077-30079	CellBrite™ NIR Cytoplasmic Membrane Stain
30088-30090	CellBrite™ Fix Membrane Stains
30092-30104	MemBrite™ Fix Cell Surface Staining Kits
30105-30109	CellBrite™ Steady Membrane Labeling Kits
22023	Paraformaldehyde, 4% in PBS, Ready-to-Use Fixative
23001	EverBrite™ Mounting Medium
23002	EverBrite™ Mounting Medium with DAPI
23003	EverBrite™ Hardset Mounting Medium
23004	EverBrite™ Hardset Mounting Medium with DAPI
23008	Drop-n-Stain EverBrite™ Mounting Medium
23009	Drop-n-Stain EverBrite™ Mounting Medium with DAPI

Please visit our website at www.biotium.com for information on our life science research products, including microbiology staining kits, fluorescent CF® dye WGA, PNA, phalloidin, and other bioconjugates, antibody conjugates, antibody labeling kits, cell viability reagents, fluorescent probes, and kits for cell biology research.

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