

Membrane & Cell Surface Stains

Precision tools for live-cell imaging, downstream analysis, and long-term research

At **Atlantis Bioscience**, we bring innovative and reliable staining technologies to empower your discoveries in cell biology and microscopy. Powered by *Biotium*, Whether you're imaging live cultures or conducting immunofluorescence assays, our membrane stains deliver high clarity and consistency across a wide range of applications.

We Deliver:



Superior brightness and photostability



Fixable and permeabilization-resistant options

HD

Suitable for Super-resolution imaging and near-infrared (NIR) applications



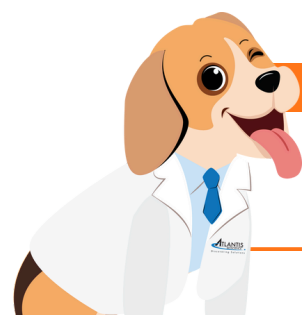
Cell-type flexibility (mammalian, yeast, bacterial)

Why Researchers Prefer CellBrite® Over CellMask™

Feature	CellBrite® Steady	CellBrite® Fix & MemBrite® Fix	CellMask™
Mechanism	Lipophilic moiety associates with membranes	Covalent labelling of surface proteins	Amphipathic probe with lipophilic + hydrophilic regions
Long/short-term staining	Up to several days in culture	Designed for fixation after staining	~60–90 minutes only
Fixation Compatibility	No	Yes	Yes
Permeabilisation Compatibility	No	Yes	No
Key Advantage	Retained on cell surface for long-term imaging	Ideal for multiparametric immunofluorescence staining	Limited to short-term use

Do You Know?

Biotium products are widely adopted in translational and fundamental research, with proven use in world-class institutions including the **University of California, Berkeley**, **Ludwig-Maximilians-University of Munich**, and the **National University of Singapore**.



Cell Surface Stain Infographic

Lipid Staining

Type of Probe

Lipophilic fluorescent dyes

Features

- Non-covalent
- Consistent staining of plasma membrane in PFA-fixed cells
- Suitable for antibody co-staining
- Compatible with poly-L-lysine coated cultureware

CytoLiner™ Fixed Cell Membrane Stains

Considerations

- Higher background when used for live-cell staining
- Incompatible with MeOH fixation

CellBrite® Steady Membrane Stains

Considerations

- Can't stain fixed cells
- Can't fix after staining

Hydrophobic Moiety

Type of Probe

Dyes with hydrophobic moiety

Features

- Retained on cell surface for up to days
- Highly uniform staining
- Suitable for long-term live cell imaging

Cell Surface Probes

Type of Probe

Cell surface protein reactive dyes

Features

- Covalent
- Rapid, uniform staining
- Tolerates fixation and permeabilization for IF

Considerations

- Can't stain fixed cells
- Dead cells show bright intracellular staining
- Not compatible with all culture substrate coatings

Protein Staining: non-specific

MemBrite® Fix Stains

CellBrite® Fix Stains

Type of Probe

Sugar-selective lectins

Features

- Non-covalent
- Suitable for FFPE tissues
- Stain live cells, fixed cells, or fix after staining


Considerations

- Cell type variation
- Targets also localize intracellularly

Con A Conjugates

WGA Conjugates

Glycan Staining

 Hydrocarbon chain of variable length/saturation

 Hydrophobic moiety

 WGA

 Con A

 Dye

 Reactive Dye

Featured Solutions



#01 CellBrite® Steady

For multi-day live-cell imaging



Long-Lasting, Wash-Free Live-Cell Imaging

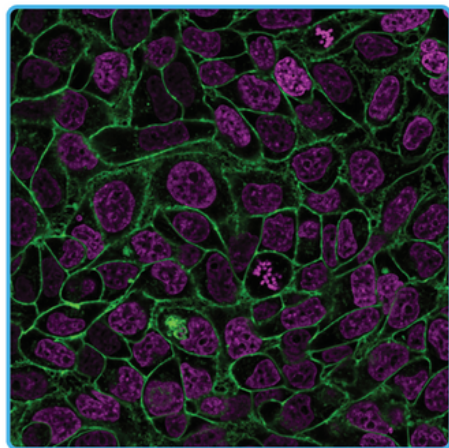


Figure 1. Live HeLa cells co-stained with CellBrite® Steady 488 and NucSpot® Live 650, imaged without washing.

CellBrite® Steady Stains Retain Signal on Live Cell Surfaces Longer than Traditional Lipophilic Dyes

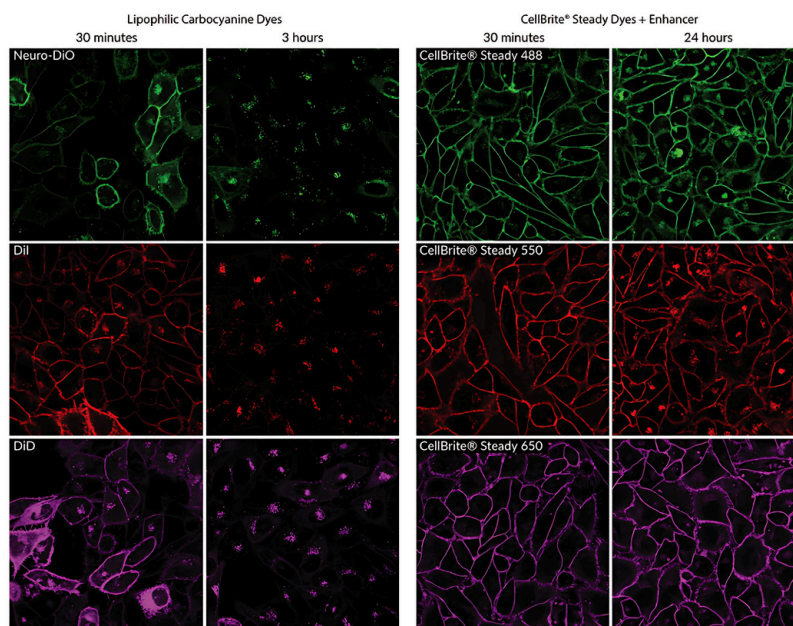


Figure 2. Live HeLa cells stained with lipophilic dyes (Neuro-DiO, DiI, DiD) or CellBrite® Steady Dyes. While traditional dyes are quickly internalized, CellBrite® Steady provides even membrane staining visible for up to 24 hours when used with Enhancer.

Publication Highlights

CellBrite® Steady was used in this study for live-cell super-resolution imaging of neuronal membranes, demonstrating its utility in advanced neuroscience research.

Heller. E., Kurup, N. & Zhuang. X

The membrane skeleton is constitutively remodeled in neurons by calcium signaling

Science | IF: 45.8 | 07 August 2025

"... Plasma membranes were labeled for live imaging with **CellBrite Steady 650 (Biotium, 30108-T)**, diluted 1:1000 in culture medium with 1X enhancer..."

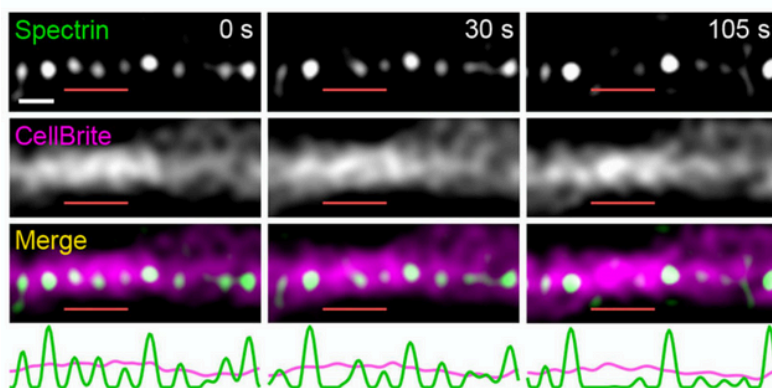


Figure 3. Live-cell two-colour SIM imaging of the neuronal MPS using β II-spectrin (top) and CellBrite® Steady membrane dye (middle), with composite images and intensity traces (green, β II-spectrin; magenta, CellBrite) shown (bottom).

#02 CellBrite® Fix & MemBrite® Fix

Fixable, covalent stains for robust imaging



CellBrite® Fix Tolerates Fixation and Permeabilization

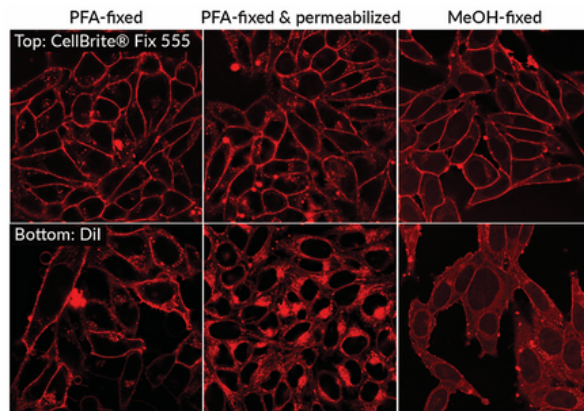


Figure 4. CellBrite® Fix 555 provides more even and stable membrane staining after fixation/permeabilization than Dil.

MemBrite® Fix is Available in a Wide Choice of Colors

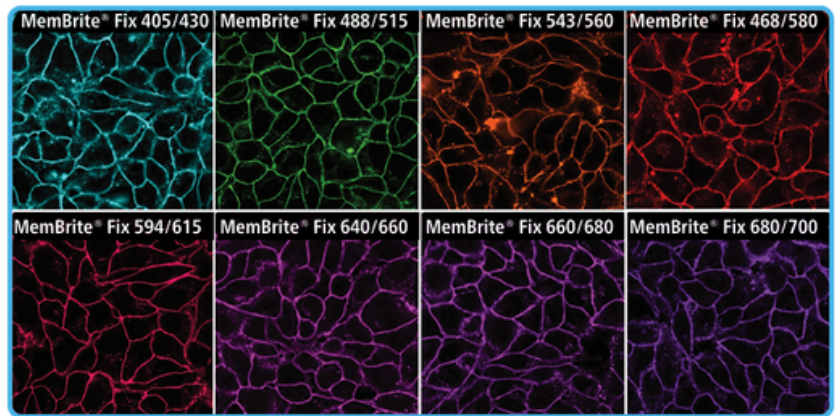
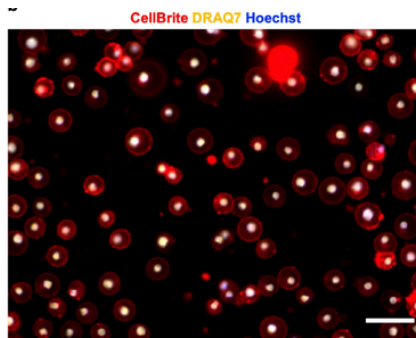


Figure 5. MemBrite® Fix Dyes label cell membranes in 5 minutes, with staining retained after PFA fixation and Triton® X-100 permeabilization.

Publication Highlights

CellBrite® Fix 555 was used in a high-impact Nature study (2025) to visualise plasma membrane integrity during mechanical strain and pyroptosis, demonstrating its reliability in fixed-cell and immunofluorescence workflows.

Figure 6. THP-1 cells treated with Nigericin were stained to reveal the plasma membrane (CellBrite®, red), nuclei of cells with compromised membranes (DRAQ7, yellow), and all nuclei (Hoechst, blue). Double-stained nuclei (white) indicate membrane permeabilisation. Image demonstrates the reliability of CellBrite® Fix dyes for tracking plasma membrane integrity under stress conditions. Scale bar: 50 µm.



Zhu, Y., Xiao, F., ..., Xu, J.

NINJ1 regulates plasma membrane fragility under mechanical strain.

Nature | IF: 69.504 | 09 June 2025

"... THP-1 cells were pre-stained with **CellBrite Fix 555 (1:1000, Biotium, 30088)** to visualize cell plasma membrane..."

MemBrite® Fix 405/430 was used in a Molecular Therapy (2025) study at St. Jude Children's Research Hospital to visualise CAR T cell membranes

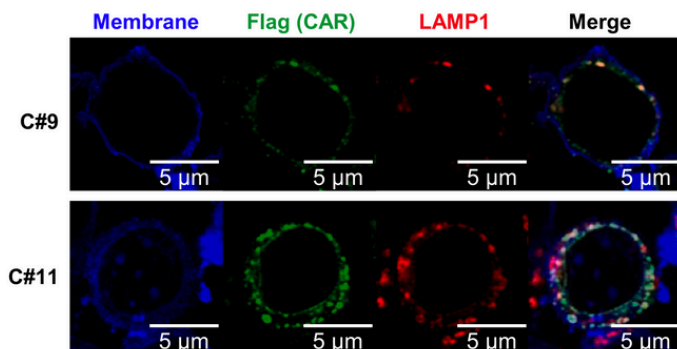


Figure 7. Membranes were stained with MemBrite® Fix (blue), while Flag-tagged CAR constructs (green) and LAMP1 lysosomes (red) were visualised by immunofluorescence. Images highlight high (C#9) versus low (C#11) extracellular expression. Scale bar: 5 µm.

Meehl, M. M., Immadisetty, K.,... Krenciute, G.

Computational structural optimization enhances IL13Ra2 – B7-H3 tandem CAR T cells to overcome antigen-heterogeneity-mediated tumor escape

Molecular Therapy | IF: 12 | 13 August 2025

"... their membrane was stained using the **MemBrite Fix Cell Surface Staining Kit (Biotium, CAT:50-196-4511)**."



#3 CellBrite® Cytoplasmic Dyes for Labeling Cytoplasmic Membranes



**Stain Before or After Fixation
with CellBrite® Cytoplasmic
Membrane Dyes**

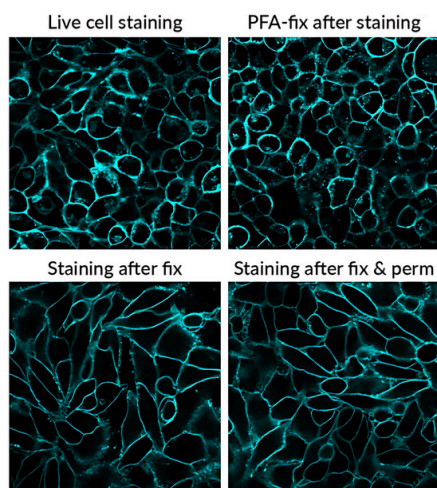


Figure 8. Comparison of CellBrite® Blue staining before and after various fixation and permeabilization steps (Left to right).

**Label Mixed Cell Cultures in Suspension &
Compatible with Multi-Color Immunofluorescence**

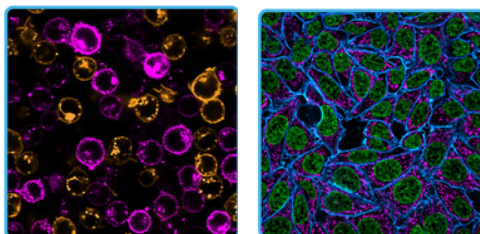


Figure 9 (LEFT). Jurkat cells stained with CellBrite® Orange or Red, mixed post-staining, and imaged to assess distinct membrane labeling.

Figure 10 (RIGHT). Fixed/permeabilized HeLa cells stained for mitochondria and nuclei, then labeled with CellBrite® Blue for membrane visualization.

**CellBrite® Red Cytoplasmic Membrane Dye was used in a Nature (2023)
study to visualise embryonic membranes in somitogenesis models.**

Miao, Y., Djeflal, Y., ..., Pourquie, O.

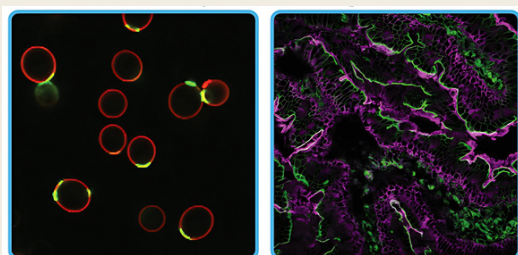
**Reconstruction and deconstruction of human
somitogenesis in vitro**

Nature | IF: 69.504 | 24 February 2023

"... The **CellBrite Red Cytoplasmic Membrane dye (Biotium 30023; 1:1,000)** and ...
were added to the final wash of HCR RNA-FISH protocol..."



#04 CF® Dye Lectins (WGA, Con A) Carbohydrate-binding for glycoprotein targeting



CF® Dye Lectin Staining

Figure 11 (LEFT). *S. cerevisiae* stained with CF®594 Con A (cell walls, red) and CF®488A WGA (bud scars, green).

Figure 12 (RIGHT). Formaldehyde-fixed cryosection of rat skeletal muscle stained with CF®640R WGA (magenta) and CF®488A phalloidin (green).



WGA CF® Dye



Con A CF® Dye



Publication Highlights

**Biotium's CF®488A WGA and CF®594 Con A lectin conjugates were used in a Cell Stem Cell (2025) study to
demonstrate enhanced molecular diffusion in engineered midbrain organoids**

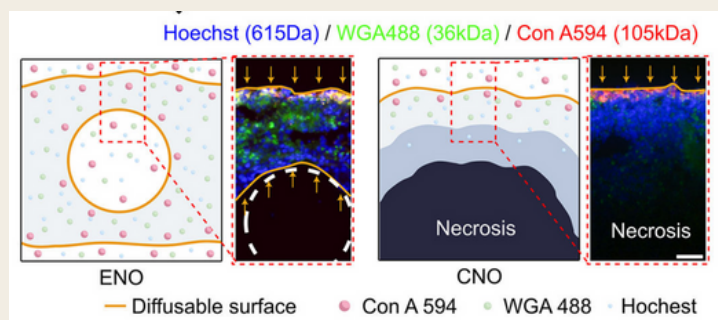


Figure 13. Perfusion assay with Hoechst (615 Da), CF®488A WGA (36 kDa), and CF®594 Con A (105 kDa). Scale bar: 50 μ m.

Cai, H., Tian, C., ..., Guo, F.

**Vascular network-inspired diffusible
scaffolds for engineering functional
mid-brain organoids**

Cell Stem Cell | IF: 20.4 | 01 May 2025

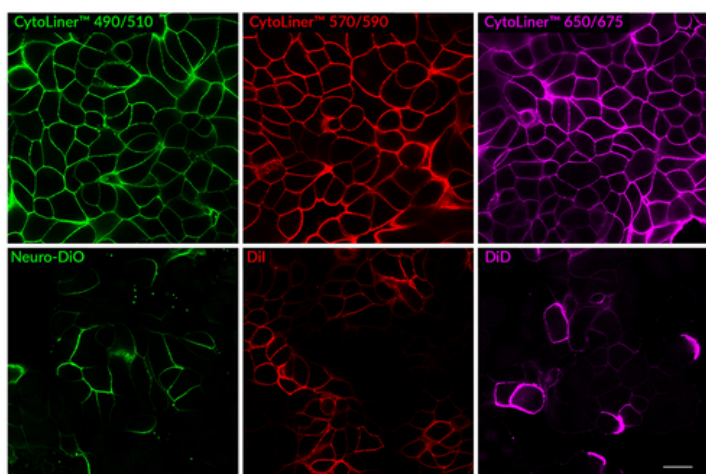
"... incubated in the final midbrain organoid medium
with ... **CF®488A Wheat Germ Agglutinin (CF488WGA,
36kDa, Biotium)** and **CF®594 Concanavalin A
(CF594Con A, 104kDa, Biotium)** for 12 hours."

#05 CytoLiner™ Fixed Cell Membrane Stains

For consistent plasma membrane labelling in fixed-cell imaging



CytoLiner™ dyes are a latest type of lipophilic fluorescent dye, developed by Biotium, used to selectively stain the plasma membranes of formaldehyde-fixed cells for microscopy. They offer **more robust and consistent staining** compared to older dyes for fixed cells and are **compatible with subsequent immunofluorescence staining protocols**, allowing for the use of antibodies and other probes. These dyes are available in **various colors, from blue to near-infrared**, to suit different experimental needs.

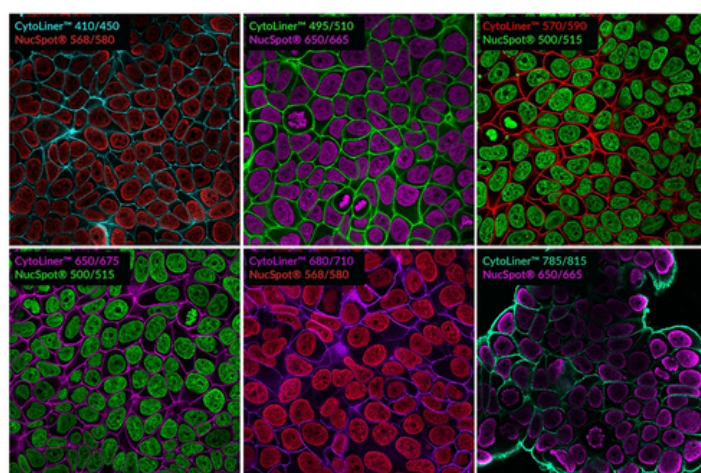


Superior Staining Performance Over Classic Membrane Dyes

Figure 14. CytoLiner™ delivers uniform and reliable plasma membrane staining in PFA-fixed, mildly permeabilized cells, outperforming traditional lipophilic dyes. Confocal images of PFA-fixed MCF7 cells (scale bar: 20 µm).

Suitable for Co-Staining with Antibodies and Other Probes

Figure 15. PFA-fixed MCF-7 cells were permeabilized with PBS/0.1% Triton® X-100 for 10 minutes at room temperature, then stained with 1X CytoLiner™ Fixed Cell Membrane Dyes and NucSpot® Nuclear Stains.



Experience brighter,
more reliable staining

Contact us to claim your CytoLiner™ trial discount now!



Compare Membrane and Cell Surface Stains

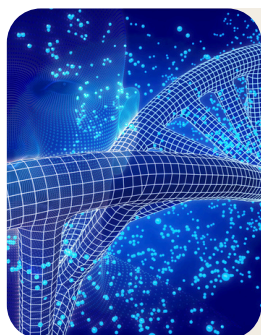
Stain	Dye transfer between cells	Stain after fixing	Fix after staining	Tolerates detergent / MeOH fix?
CytoLiner™ Fixed Cell Membrane Stains	Yes	Yes ¹	Yes ²	No ³
CellBrite® Steady Membrane Staining Kits	Yes	No	No	No
CellBrite® Fix Membrane Stains	Minimal	No	Yes	Yes
MemBrite® Fix Cell Surface Staining Kits	Minimal	No	Yes	Yes
CF® Dye WGA Conjugates	Possible	Yes	Yes	Yes
CF® Dye Con A Conjugates	Possible	Yes	Yes	Yes
CellBrite® Cytoplasmic Membrane Dyes	Minimal	Yes ¹	Yes ¹	No

¹ Formaldehyde fixation only.

² CytoLiner™ Fixed Cell Membrane Stains may have higher background if used to stain live cells before fixation than when used to stain cells after fixation.

³ Mild permeabilization with 0.1% Triton® X-100 is recommended, see product information sheet for more info.

Why Collaborate with Atlantis Bioscience for Biotium



Authorised Partner in the Region

We are the official distributor of Biotium products, ensuring authenticity, reliability, and direct access to the latest innovations.



End-to-End Bench-to-Bedside Support

Our team of scientists and specialists provides workflow integration, technical guidance, and troubleshooting to help you get the most from Biotium's stains.



Regional Presence, Global Standards

With strong networks across Singapore and Thailand, we deliver Biotium products quickly and with local support, backed by global quality assurance.



More Than a Supplier

We work closely with clinicians, professors, and spin-off companies, helping source rare samples and bridge gaps from basic discovery to translational applications.

✦ **Explore our full catalogue on the next page and contact us for more inquiries.**

Our Catalogue

CytoLiner™ Fixed Cell Membrane Stains

Cat. No.	Product	Ex/Em (nm)
30131	CytoLiner™ 410/450	406/446
30132	CytoLiner™ 495/510	492/510
30133	CytoLiner™ 570/590	573/592
30134	CytoLiner™ 650/675	647/674
30135	CytoLiner™ 680/710	682/707
30140	CytoLiner™ 785/815	787/819

CellBrite® Steady Membrane Staining Kits

Cat. No.	Product	Ex/Em (nm)
30105	CellBrite® Steady 405 Membrane Staining Kit	406/428
30106	CellBrite® Steady 488 Membrane Staining Kit	505/529
30107	CellBrite® Steady 550 Membrane Staining Kit	562/579
30108	CellBrite® Steady 650 Membrane Staining Kit	656/676
30109	CellBrite® Steady 685 Membrane Staining Kit	686/708

CellBrite® Fix Membrane Labelling Kits

Cat. No.	Product	Ex/Em (nm)
30090	CellBrite® Fix 488 Membrane Stain	480/513
30088	CellBrite® Fix 555 Membrane Stain	542/570
30089	CellBrite® Fix 640 Membrane Stain	638/667

MemBrite® Fix Cell Surface Labelling Kits

Cat. No.	Product	Ex/Em (nm)
30092	MemBrite® Fix 405/430 Cell Surface Staining Kit	411/431
30093	MemBrite® Fix 488/515 Cell Surface Staining Kit	490/516
30094	MemBrite® Fix 543/560 Cell Surface Staining Kit	543/563
30095	MemBrite® Fix 568/580 Cell Surface Staining Kit	562/584
30096	MemBrite® Fix 594/615 Cell Surface Staining Kit	593/615
30097	MemBrite® Fix 640/660 Cell Surface Staining Kit	640/660
30098	MemBrite® Fix 660/680 Cell Surface Staining Kit	662/682
30099	MemBrite® Fix 680/700 Cell Surface Staining Kit	680/701
30101	MemBrite® Fix 650/665 Cell Surface Staining Kit	650/665
30102	MemBrite® Fix ST 667 Cell Surface Staining Kit	667/685
30103	MemBrite® Fix ST 681 Cell Surface Staining Kit	681/698
30104	MemBrite® Fix ST 755 Cell Surface Staining Kit	755/779

CF® Dye Wheat Germ Agglutinin (WGA) Conjugates

Cat. No.	Product	Ex/Em (nm)
29021	CF*350 Wheat Germ Agglutinin (WGA) Conjugate	355/450
29027	CF*405S Wheat Germ Agglutinin (WGA) Conjugate	411/431
29022	CF*405M Wheat Germ Agglutinin (WGA) Conjugate	416/452
29023	CF*488A Wheat Germ Agglutinin (WGA) Conjugate	490/516
29024	CF*532 Wheat Germ Agglutinin (WGA) Conjugate	531/552
29025	CF*555 Wheat Germ Agglutinin (WGA) Conjugate	554/568
29077	CF*568 Wheat Germ Agglutinin (WGA) Conjugate	562/584
29026	CF*594 Wheat Germ Agglutinin (WGA) Conjugate	593/615
29093	CF*633 Wheat Germ Agglutinin (WGA) Conjugate	629/650
29026	CF*640R Wheat Germ Agglutinin (WGA) Conjugate	642/663
29028	CF*680R Wheat Germ Agglutinin (WGA) Conjugate	681/698
29025	CF*680R Wheat Germ Agglutinin (WGA) Conjugate	680/701
29059	CF*770 Wheat Germ Agglutinin (WGA) Conjugate	770/797

CF® Dye Concanavalin A (Con A) Conjugates

Cat. No.	Product	Ex/Em (nm)
29015	CF*350 Concanavalin A (Con A) Conjugate	355/450
29075	CF*405S Concanavalin A (Con A) Conjugate	411/431
29074	CF*405M Concanavalin A (Con A) Conjugate	416/452
29016	CF*488A Concanavalin A (Con A) Conjugate	490/516
29017	CF*594 Concanavalin A (Con A) Conjugate	593/615
29018	CF*633 Concanavalin A (Con A) Conjugate	629/650
29019	CF*640R Concanavalin A (Con A) Conjugate	642/663
29020	CF*680 Concanavalin A (Con A) Conjugate	681/698
29080	CF*750 Concanavalin A (Con A) Conjugate	755/777
29058	CF*770 Concanavalin A (Con A) Conjugate	770/797

CellBrite® Cytoplasmic Membrane Dyes

Cat. No.	Product	Ex/Em (nm)
30024	CellBrite® Blue Cytoplasmic Membrane Dye	360/441
30021	CellBrite® Green Cytoplasmic Membrane Dye	489/506
30022	CellBrite® Orange Cytoplasmic Membrane Dye	554/568
30023	CellBrite® Red Cytoplasmic Membrane Dye	648/670
30070	CellBrite® NIR680 Membrane Dye	683/724
30071	CellBrite® NIR750 Membrane Dye	748/781
30078	CellBrite® NIR770 Membrane Dye	767/806
30079	CellBrite® NIR790 Membrane Dye	787/820

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