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ExoBrite™ Annexin EV Staining Kits

Fluorescent Annexin V conjugates that are optimized for bright and low background staining of extracellular vesicles for flow cytometry.

Product attributes

Colors	Blue, Green, Orange-red, Far-red

Product Description

ExoBrite™ Annexin EV Staining Kits were designed to overcome some of the challenges of EV detection, particularly in flow cytometry. ExoBrite™ Annexin EV Stains bind to molecules in the EV membrane for bright, specific staining, with little to no background.

ExoBrite™ Annexin EV Stains are uniquely formulated conjugates of Annexin V, a 35-36 kDA calcium-dependent phospholipid-binding protein with high affinity for phosphatidyleserine (PS). Annexin V conjugates have been used to detect EVs due to the presence of PS on most EV membranes.

ExoBrite™ Annexin EV Stains were designed to overcome some of the challenges of EV detection, particularly in flow cytometry. For example, lipophilic membrane dyes commonly used to stain EVs can form aggregates of a similar size as exosomes or EVs, thus confounding analysis. Conversely, ExoBrite™ Annexin EV Stains are specially formulated to minimize aggregation in flow cytometry, allowing EVs to be identified with bright staining with minimal background. In addition, ExoBrite™ Annexin EV Stains were designed to offer broad coverage of EVs isolated from different sources. We tested EVs derived from 9 cell lines and ExoBrite™ Annexin EV Stains showed strong staining for all of them.

EVs are often labeled with fluorescent antibodies targeting one or more of the tetraspanin proteins CD9, CD63, and CD81. ExoBrite™ Annexin staining can be combined with antibody staining, for multi-parameter analysis.

Notes:

1. ExoBrite™ Annexin EV Stains have been found to label EVs derived from all cell lines tested (see Validated EV Sources below), but may not stain EVs from every source.
2. In our testing, we have found that ExoBrite™ 490/515 dye may bind to streptavidin coated surfaces or beads if free biotin binding sites are not blocked. We recommend performing a biotin blocking step after binding your biotinylated capture antibody to streptavidin beads or surfaces when using ExoBrite™ 490/515 conjugates. Alternatively, consider using a different ExoBrite™ dye for staining EVs captured on streptavidin beads or surfaces.

ExoBrite™ Annexin EV Staining Kits

Product	Ex/Em	Detection channels	Size	Catalog Number
ExoBrite™ 410/450 Annexin EV Staining Kit	416/452 nm	Pacific Blue™	100 Labelings	30119-T
			500 Labelings	30119
ExoBrite™ 490/515 Annexin EV Staining Kit	490/516 nm	FITC	100 Labelings	30120-T
			500 Labelings	30120
ExoBrite™ 560/585 Annexin EV Staining Kit	562/584 nm	PE	100 Labelings	30121-T
			500 Labelings	30121
ExoBrite™ 650/665 Annexin EV Staining Kit	652/668 nm	APC	100 Labelings	30122-T
			500 Labelings	30122

Validated EV Sources for ExoBrite™ EV Surface Stains

EV Source	ExoBrite™ True EV Membrane Stains	ExoBrite™ CTB Stains	ExoBrite™ WGA Stains	ExoBrite™ Annexin Stains
A549 cells	Yes	Yes	Yes	Yes
CHO cells	Yes	No	Yes	Yes
hASC (human adipose stem cells)	ND	No[1]	ND	ND
HEK293 cells	Yes	Yes[1]	Yes	ND
HeLa cells	Yes	No	Yes	Yes
HUVEC (human umbilical vein endothelial cells)	ND	No[1]	ND	ND
J774 cells	Yes	Yes	Yes	Yes
Jurkat cells	Yes	Yes	Yes	Yes
MCF-7 cells	Yes	Yes	Yes	Yes
Plasma	ND	No	ND	Yes
Raji cells	ND	Yes	Yes	Yes
RAW 264.7 cells	Yes	ND	ND	ND
Serum	ND	No	ND	Yes
Skeletal myoblasts	ND	Yes[1]	ND	ND
THP-1 cells	Yes	ND	ND	ND
U2OS cells	Yes	No	Yes	Yes
U937 cells	Yes	No	Yes	Yes
NIH3T3 cells	Yes	ND	ND	ND
HepG2 cells	ND	ND	Yes	ND
Yeast (S. cerevisiae)	Yes	No	Yes	Yes

[1]Customer-reported data
Value of “Yes” or “No” indicates coverage of EVs based on Biotium’s internal data or customer-reported data. Value of “ND” indicates no data.

Biotium also offers other validated ExoBrite™ reagents for flow cytometry, western blotting, or super-resolution imaging.

Learn about Biotium’s new ExoBrite™ True EV Membrane Stains. These genuine lipophilic membrane dyes are designed for superior pan-EV labeling over other membrane dyes including PKH, DiO, DiI, and DiD. Biotium also offers ExoBrite™ CTB EV Stains (cholera toxin B conjugates) and ExoBrite™ WGA EV Stains (wheat germ agglutinin) optimized for bright and sensitive staining of EVs. The ExoBrite™ EV Surface Stain Sampler Kit contains each of Biotium’s ExoBrite™ EV Surface Stains (CTB, WGA, and Annexin V) for assessing which stain offers the best coverage for the EV samples of interest. Biotium also offers ExoBrite™ Antibody Conjugates for optimal detection of CD9, CD63, and CD81 EV markers by flow cytometry and western blotting. For super-resolution imaging by STORM, learn about our ExoBrite™ STORM CTB EV Staining Kits available in four CF® Dyes validated for STORM.

Note: We do not recommend using ExoBrite™ 410/450 Annexin EV Stain or ExoBrite™ 490/515 Annexin EV Stain to stain bead-bound EVs. For bead-bound EVs we recommend using ExoBrite™ 560/585 Annexin EV Stain, ExoBrite™ 650/665 Annexin EV Stain, as well as ExoBrite™ CTB EV Stains.