

## ViaFluor® SE Cell Proliferation Kits

Fixable cytoplasmic stains for monitoring cell division by flow cytometry. The dyes can also be used to track cell populations in co-culture.



### Product Description

ViaFluor® SE Cell Proliferation Kits use amine-reactive dyes to covalently label cells throughout the cell cytoplasm and intracellular compartments for fixable fluorescent staining. Cell proliferation dyes are commonly used to monitor cell division by flow cytometry. The dyes also can be used to stably label cells to image cell morphology, or to track cell populations in mixed co-culture experiments.

### ViaFluor® SE Dyes for Cell Proliferation Tracking

ViaFluor® SE dyes are membrane-permeant compounds that are initially non-fluorescent esters, but are converted to fluorescent dyes by intracellular esterases and will covalently react with amine groups on intracellular proteins at the same time, forming fluorescent conjugates that are retained in the cell. Immediately after staining, a single bright fluorescent population will be detected by flow cytometry. With each cell division, daughter cells inherit roughly half of the fluorescent label, allowing the number of cell divisions that occur after labeling to be detected by the appearance of successively dimmer fluorescent peaks on a flow cytometry histogram compared to cells analyzed immediately after staining. Thus, cell proliferation dyes can be used to track multiple cell divisions of cells grown in culture or injected *in vivo* after labeling with the ViaFluor® SE dye.

The number of assays that can be performed per kit depends on the dye concentration used (see the [product protocol](#) for more information). When used at 1  $\mu\text{M}$  to label  $10^6$  cells in one mL, each dye vial can be used for 90-100 labelings.

### Other Applications for ViaFluor® SE Dyes

ViaFluor® SE dyes also can be used for imaging cell morphology or identifying cells in co-culture by microscopy. Because the staining is non-toxic and well-retained, it can be used for imaging live cells over time. See our [Tech Tip: Using ViaFluor® SE Stains for Cell Tracing and Co-Culture](#).

All three ViaFluor® SE dyes can stain gram-positive bacteria, but not gram-negative bacteria. ViaFluor® CFSE stains the cytoplasm in yeast, but ViaFluor® 405 & ViaFluor® 488 stain the yeast cell periphery. See our [Cellular Stains Table](#) for more information on how our dyes stain various organisms.

### Product attributes

<b>Apoptosis/viability marker</b>	All cell stain
<b>Probe cellular localization</b>	Nucleus & cytoplasm
<b>For live or fixed cells</b>	Covalent & fixable stains, For live/intact cells
<b>Detection method/readout</b>	Fluorescence microscopy, Flow cytometry
<b>Assay type/options</b>	Cell division tracking, Extended staining (several days to weeks), Real-time imaging
<b>Cell permeability</b>	Membrane permeant
<b>Colors</b>	Blue, Green, Far-red
<b>Fixation options</b>	Fix after staining (formaldehyde), Fix after staining (methanol), Permeabilize after staining
<b>Storage Conditions</b>	Store at -10 to -35 °C, Protect from light, Desiccate

Cell Division Tracking Dyes	Catalog No.	Ex/Em (nm)	Flow detection channel	Features
<a href="#">ViaFluor® 405 SE Cell Proliferation Kit</a>	30068	408/452	Pacific Blue®	<ul style="list-style-type: none"> <li>Track cell division by dye dilution using flow cytometry</li> <li>ViaFluor® 488 is a unique, improved green dye to replace CFSE</li> <li>ViaFluor® 405 replaces CellTrace™ Violet</li> <li>ViaFluor® 650 replaces CellTrace™ Far Red</li> </ul>
<a href="#">ViaFluor® 488 SE Cell Proliferation Kit</a>	30086	493/532	FITC	
<a href="#">ViaFluor® 650 SE Cell Proliferation Kit</a>	30139	653/682	APC	
<a href="#">ViaFluor® CFSE Cell Proliferation Kit</a>	30050	495/519	FITC	

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