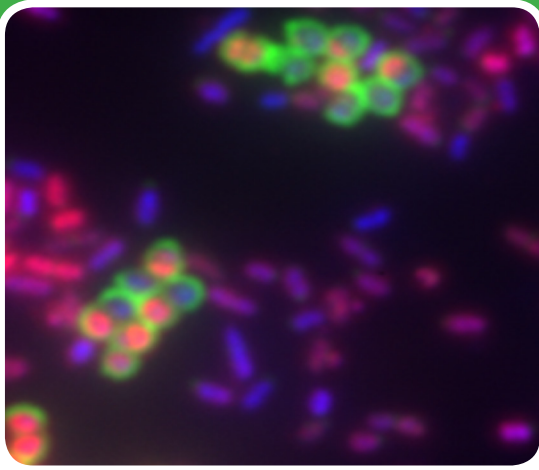


Bacteria stains

Fluorescent dyes and kits



Viability Dyes and Kits

Live-or-Dye™ Fixable Viability Staining Kits utilize amine-reactive, fixable dyes and are dead-cell-specific (Figure 1). Good for flow cytometry and microscopy. Available in 9 bright, photostable colors. The Viability/Cytotoxicity Assay Kit for Bacteria Live and Dead Cells features dual staining: DMAO for live cells, and EthD-III for dead cells (Figure 2).

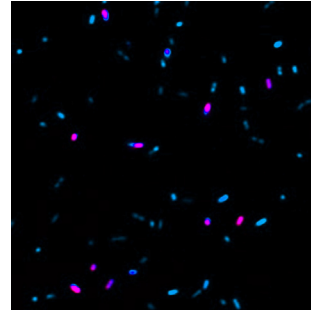


Figure 1. Live and heat-killed *E. coli* stained with Live-or-Dye™ 568/583 (red) and DAPI (blue).

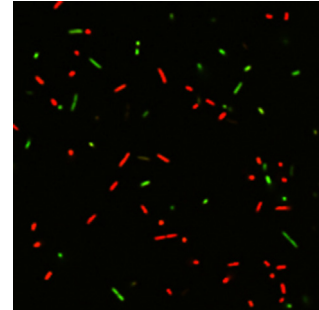


Figure 2. Live and heat-killed *E. coli* stained with DMAO, marking live cells (green) and EthD-III, marking dead cells (red).

Fluorescent Gram Stains

While the old colorimetric gram staining technique has been around for over 100 years, did you know that there are many advantages to switching to a fluorescence-based gram stain?

- Simple, fast procedure.
- Fluorescently-labeled WGA specifically stains the cell walls of Gram+ bacteria, and comes in 8 different colors!
- Fluorescence detection is more sensitive than colorimetric.
- Fluorescent staining allows you to co-stain with other fluorescent antibodies or markers of interest (Figure 3).

Combination Gram Stain and Viability Kits

It can be useful to distinguish live bacteria from dead, as well as Gram+ from Gram-, in the same sample. Our combination bacterial viability and fluorescent gram staining kits can help (Figure 4).

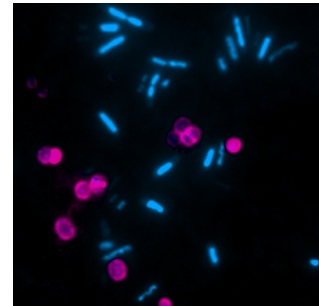


Figure 3. *E. coli* and *Staphylococcus* stained with CF@633-WGA (red) and DAPI (blue).

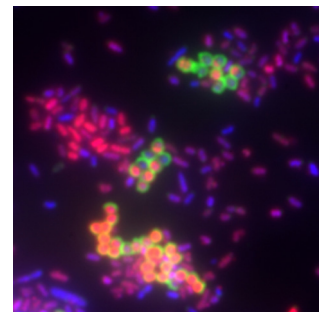


Figure 4. Bacterial Viability and Gram Stain Kit. CF@488A-WGA, EthD-III and DAPI.

Ordering Information

Cat. #	Product	Description
32002-32009	Live-or-Dye™ Fixable Viability Staining Kits	Dead cell specific stains in a variety of colors
29021-29029; 29059; 29064	CF® Dye Wheat Germ Agglutinin (WGA)	Cell wall binding fluorescent gram stain in a variety of colors
10063	CTC (5-Cyano-2,3-ditoyl tetrazolium chloride)	Forms insoluble red product in respiring cells
30027	Viability/Cytotoxicity Assay Kit for Bacteria Live and Dead Cells	DMAO to stain all cells and EthD-III for dead cells
32001	Bacterial Viability and Gram Stain Kit	WGA for gram stain, EthD-III for dead cells, and DAPI for all cells
32000	Live Bacterial Gram Stain Kit	WGA for gram stain and DAPI for all cells

PMAxx™ for Viability PCR

Viability PCR using the new PMAxx™ dye is a fast, quantitative alternative to traditional culturing methods for determining cell viability. In a sample treated with PMAxx™, the dye enters only into dead cells and binds to the DNA. Upon photoactivation, the dye becomes covalently attached to the dead cell's DNA. When the DNA from the sample is analyzed by qPCR, amplification of the dead cell DNA will be inhibited by the dye, allowing viability to be quantified (Figure 5). PMAxx™ gives better live/dead separation than previous dyes EMA and PMA.

For Gram- bacteria, we also make a PMA Enhancer, which improves the differentiation between live and dead Gram- bacteria in real-time viability PCR assays.

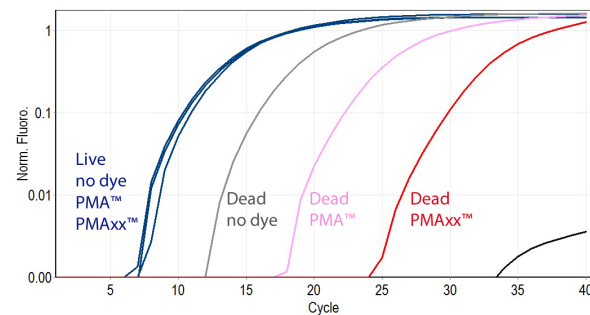


Figure 5. Living and heat-killed *Bacillus subtilis* bacteria were treated with 25 μ M PMAxx™, 25 μ M PMA, or left untreated. After photolysis and DNA isolation, qPCR was performed using primers against the *Bacillus subtilis* *gyrA* gene.

Strain-specific viability PCR kits

For maximum convenience, we offer ready-to-use Real-Time PCR Bacterial Viability Kits for the detection of specific bacterial strains.

Kits include:

- PMAxx™ or PMA viability dye
- Forget-Me-Not EvaGreen® PCR Master Mix
- ROX reference dye
- PMA Enhancer (Gram-negative strains only)
- Validated PCR primers for the indicated strain

Strain-specific kits are available for:

- *Staphylococcus aureus*
- *Staphylococcus aureus* (methicillin-resistant)
- *E. coli*
- *E. coli* O157:H7
- *Salmonella enterica*
- *Mycobacterium tuberculosis*
- *Legionella pneumophila*
- *Listeria monocytogenes*

Ordering Information

Cat. #	Product
40019	PMA dye, 20 mM in water
40069	PMAxx™, 20 mM in water
31075 & 31076	Viability PCR Starter Kits
31038	PMA Enhancer for Gram Negative Bacteria
E90002	PMA-Lite™ LED Photolysis Device
E90004	Glo-Plate™ Blue LED Illuminator
31033	Real-Time Bacterial Viability Kit, Salmonella
31034	Real-Time Bacterial Viability Kit, M. tuberculosis
31035	Real-Time Bacterial Viability Kit, Staph aureus
31036	Real-Time Bacterial Viability Kit, MRSA
31037	Real-Time Bacterial Viability Kit, E. coli O157:H7
31050	Real-Time Bacterial Viability Kit, E. coli
31051	Real-Time Bacterial Viability Kit, Listeria
31053	Real-Time Bacterial Viability Kit, Legionella pneumophila

Viability PCR Starter Kits

The customizable Viability PCR Starter Kits are the easiest way to get started in v-PCR.

Kits include:

- Your choice of PMAxx™ or PMA viability dye
- EvaGreen® qPCR Master Mix
- ROX reference dye
- 5X PMA Enhancer for Gram-Negative Bacteria (for use with gram-negative strains only)

Not included but required:

- Primers to amplify DNA from your cell type of interest