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PMA (Propidium Monoazide)

A photo-reactive DNA-binding dye typically used in viability PCR (v-PCR) of microorganisms like bacteria, viruses, and fungi.

Product attributes

Viability dye	PMA
Molecular weight	511
Excitation/Emission	Abs = 464 nm (before photolysis), ~510/~610 nm (with DNA/RNA, after photolysis)
Assay type/options	Live/dead discrimination, Viability PCR
Storage Conditions	1 mg solid, store at 2 to 8 °C, 100 uL in water, store at -10 to -35 °C
Detection method/readout	PCR/qPCR

Product Description

PMA (propidium monoazide) is a photo-reactive DNA-binding dye used in viability PCR (v-PCR) of microorganisms like bacteria, viruses, and fungi. PMA is available as a 1 mg lyophilized solid or 20 mM solution in water. Also try PMAxx™ (40069), a superior alternative to PMA.

- Selectively detect viable cells using qPCR
- Validated in hundreds of publications
- Dead cell specific dye, binds to DNA
- Covalently attaches to DNA after photoactivation
- Available as 1 mg lyophilized solid or 20 mM solution in water
- λ_{Abs} = 464 nm (before photolysis); $\lambda_{Abs}/\lambda_{Em}$= ~510/~610 nm (with DNA/RNA, after photolysis)

To learn more about the advantages of determining microbial or cell viability using viability PCR, visit the Viability PCR Technology Page.

Product	Catalog Number	Unit Size	Format
PMA Dye	40013	1 mg	Lyophilized solid
PMA Dye, 20 mM in H2O	40019	100 uL (20 mM in water)	Solution

About PMA

PMA dye is a DNA modifier invented by scientists at Biotium. It is a photo-reactive dye that binds to DNA with high affinity. Upon photolysis with visible light, PMA dye becomes covalently attached to DNA. This modified DNA cannot be amplified by PCR. The dye is designed to be cell membrane-impermeable. Thus, in a population of live and dead cells, only dead cells are susceptible to DNA modification due to compromised cell membranes. This unique feature of PMA dye makes it highly useful in selective detection of live bacteria by qPCR.

Since Biotium first developed PMA dye, there have been hundreds of publications on the use of the dye in many sample types including dozens of bacterial strains, biofilms, yeast, fungi, viruses, and eukaryotic cells. It has been used in such applications as food and water safety and environmental testing, and has been used in conjunction with qPCR, NextGen Sequencing (NGS), Sanger sequencing, and Loop-mediated Isothermal Amplification (LAMP).

PMAxx technology is covered by granted and/or pending US and international patents.

References

Download list of curated PMA and PMAxx™ References and a list of PMA and PMAxx™ Validated Bacterial Strains.