

# Phorbol myristate acetate - PMA

## NF- $\kappa$ B Activator

Catalog # tlr1-pma

For research use only

Version # 05B09-MT

## PRODUCT INFORMATION

### Content:

- 5 mg Phorbol myristate acetate (PMA)
- 2 ml sterile endotoxin-free water

### Caution:

- PMA is photosensitive.

### Storage:

- PMA is provided as a translucent film and is shipped at room temperature. Store at -20°C and protect from light.
- Upon resuspension, PMA should be aliquoted and stored at -20°C in the dark.
- Product is stable up to 1 year at -20°C when properly stored. Avoid repeated freeze-thaw cycles.

## DESCRIPTION

Phorbol 12-myristate 13-acetate (PMA), also known as 12-O-tetradecanoylphorbol 13-acetate (TPA) is a specific activator of Protein Kinase C (PKC) and hence of NF- $\kappa$ B. PMA is the most commonly used phorbol ester. It is active at nanomolar concentrations. PMA causes an extremely wide range of effects in cells and tissues, and is a very potent mouse skin tumor promoter<sup>1</sup>.

1. Chang MS. *et al.*, 2005. Phorbol 12-myristate 13-acetate upregulates cyclooxygenase-2 expression in human pulmonary epithelial cells via Ras, Raf-1, ERK, and NF- $\kappa$ B, but not p38 MAPK, pathways. *Cell Signal.* 17(3):299-310.
2. Schindler U. & Baichwal VR., 1994. Three NF- $\kappa$ B binding sites in the human E-selectin gene required for maximal tumor necrosis factor alpha-induced expression. *Mol Cell Biol.* 14(9):5820-5831.

**CAS Number:** 16561-29-8

**Formula:** C<sub>36</sub>H<sub>56</sub>O<sub>8</sub>

**Molecular weight:** 616.8

**Solubility:** DMSO (5 mg/ml)

## METHODS

Working concentration for PMA is 100 ng/ml - 1  $\mu$ g/ml for NF- $\kappa$ B activation.

### Preparation of stock solution (5 mg/ml)

- Add 1 ml DMSO and vortex until complete solubilisation.
- Prepare serial dilutions using endotoxin-free water.

*Note: PMA solutions may remain cloudy.*

- Aliquote stock solution and serial dilutions and store at -20°C in the dark.

### PMA-induced Activation of NF- $\kappa$ B

PMA can be used as a positive control to test the efficacy of NF- $\kappa$ B reporter plasmids, such as pNiFty. pNiFty is a family of plasmids carrying a reporter gene, SEAP or luciferase, under the control of an NF- $\kappa$ B-inducible ELAM-1 (E-selectin) promoter<sup>2</sup>.

- Transfect your cell line with a pNiFty plasmid or any NF- $\kappa$ B reporter plasmid.
- Twenty-four to forty-eight hours after transfection, stimulate cells with 100 ng/ml to 1  $\mu$ g/ml PMA for 6 to 24 hours.
- Determine PMA-induced activation of NF- $\kappa$ B by assessing reporter gene expression using the appropriate detection system.

## RELATED PRODUCTS

Product	Catalog Code
pNiFty-Luc (Amp <sup>R</sup> )	pnifty-luc
pNiFty-SEAP (Amp <sup>R</sup> )	pnifty-seap
pNiFty2-Luc (Zeo <sup>R</sup> )	pnifty2-luc
pNiFty2-SEAP (Zeo <sup>R</sup> )	pnifty2-seap
QUANTI-Blue™ (5 pouches)	rep-qb1
HEK-Blue™ Detection (2 pouches)	hb-det1

### TECHNICAL SUPPORT

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