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PRODUCT INFORMATION



Phorbol 12-myristate 13-acetate

Item No. 10008014

CAS Registry No.: 16561-29-8

Formal Name: tetradecanoic acid,
(1aR,1bS,4aR,7aS,7bS,8R,9R,9aS)-9a-
(acetyloxy)-1a,1b,4,4a,5,7a,7b,8,9,9a-
decahydro-4a,7b-dihydroxy-3-
(hydroxymethyl)-1,1,6,8-tetramethyl-5-oxo-1H-
-cyclopropa[3,4]benz[1,2-e]azulen-9-yl ester

Synonyms: PMA, 12-O-Tetradecanoylphorbol-13-acetate,
TPA

MF: $C_{36}H_{56}O_8$

FW: 616.8

Purity: $\geq 95\%$

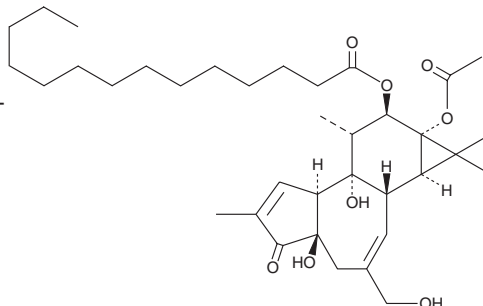
Supplied as: A solid

Storage: -20°C

Stability: ≥ 2 years

Special Conditions: Light sensitive

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



Laboratory Procedures

Phorbol 12-myristate 13-acetate (PMA) is supplied as a solid. A stock solution may be made by dissolving the PMA in the solvent of choice. PMA is soluble in organic solvents such as ethanol, methanol, DMSO, dimethyl formamide, acetone, and ether, which should be purged with an inert gas.

PMA is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Phorbol 12-myristate 13-acetate (PMA), also known as 12-O-tetradecanoylphorbol 13-acetate (TPA), is a phorbol ester and PKC activator.¹⁻⁵ It activates the PKC isoforms PKC α , β , γ , δ , ϵ , η , and θ but not PKC ζ or ι/λ .² PMA (1-10 ng/ml) induces NF- κ B-dependent gene expression in a reporter assay.³ It promotes the differentiation of THP-1 monocytes into pro-inflammatory macrophages, as well as induces the formation of neutrophil extracellular traps (NETs), *in vitro*.^{4,5} PMA, in combination with 7,12-dimethylbenz[a]anthracene (DMBA; Item No. 30383), promotes papilloma formation in a rat two-stage model of skin carcinogenesis.⁶

References

1. Goel, G., Makkar, H.P.S., Francis, G., *et al.* *Int. J. Toxicol.* **26**(4), 279-288 (2007).
2. Steinberg, S.F. *Physiol. Rev.* **88**(4), 1341-1378 (2008).
3. Hellweg, C.E., Arenz, A., Bogner, S., *et al.* *Ann. N.Y. Acad. Sci.* **1091**, 191-204 (2006).
4. Lund, M.E., To, J., O'Brien, B.A., *et al.* *J. Immunol. Methods* **430**, 64-70 (2016).
5. Petretto, A., Bruschi, M., Pratesi, F., *et al.* *PLoS One* **14**(7), e0218946 (2019).
6. Vähätupa, M., Pemmari, T., Junttila, I., *et al.* *J. Vis. Exp.* **154** (2019).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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