

#4174 Store at -20°C

TPA (12-O-Tetradecanoylphorbol-13-Acetate)

1 mg



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Background

TPA (12-O-tetradecanoylphorbol-13-acetate) / PMA (phorbol-12-myristate-13-acetate) is the most commonly used phorbol ester. It binds and activates protein kinase C, causing a wide range of effects in cells and tissues (1,2). TPA has been demonstrated to be a potent tumor promoter in mouse skin (3). Conversely, it has been shown to be an effective cancer therapeutic agent in myelocytic leukemia patients, and has been indicated as a potential colorectal cancer therapeutic (4-5). TPA has also been shown to increase white blood cell and neutrophil counts in solid tumor cancer patients (6).

Molecular Formula

C₃₆H₅₆O₈

Molecular Weight

616.83 g/mol

Purity

>99.5%

CAS

16561-29-8

Solubility

Soluble in DMSO and EtOH at 25mg/ml.

Storage

Store lyophilized or in solution at -20°C, desiccated. Protect from light. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use:

TPA is supplied as a 1 mg powder. Store at -20°C. Before use, dissolve powder in 1 ml DMSO to yield a 1.6 mM stock solution. For working concentration of 200 µM, add 125 µl stock solution to 875 µl DMSO. Treat cells with 200 nM TPA for 20-30 minutes.

TPA is soluble in DMSO and ethanol.

Background References

1. Rebois, R.V. and Patel, J. (1985) *J Biol Chem* 260, 8026-31.
2. Blumberg, P.M. (1980) *Crit Rev Toxicol* 8, 153-97.
3. Fürstenberger, G. et al. (1981) *Proc Natl Acad Sci U S A* 78, 7722-6.
4. Han, Z.T. et al. (1998) *Proc Natl Acad Sci U S A* 95, 5357-61.
5. Lee, H.W. et al. (2002) *J Biol Chem* 277, 32624-31.
6. Han, Z.T. et al. (1998) *Proc Natl Acad Sci U S A* 95, 5362-5.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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