

Certificate of Analysis

www.tocris.com

Product Name: Phorbol 12,13-dibutyrate

Catalog No.: 4153

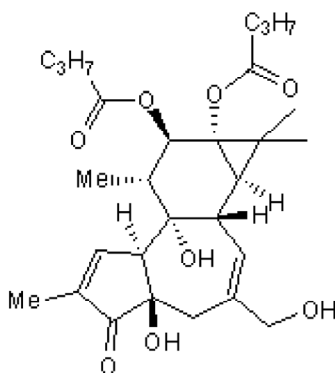
Batch No.: 9

CAS Number: 37558-16-0

IUPAC Name: (1a*R*,1b*S*,4a*R*,7a*S*,7b*S*,8*R*,9*R*,9a*S*)-1a,1b,4,4a,5,7a,7b,8,9,9a-Decahydro-4a,7b-dihydroxy-3-(hydroxymethyl)-1,1,6,8-tetramethyl-5-oxo-1*H*-cyclopropa[3,4]benz[1,2-*e*]azulen-9,9a-diyl butanoic acid ester

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula:	C ₂₈ H ₄₀ O ₈
Batch Molecular Weight:	504.61
Physical Appearance:	Off-white solid
Solubility:	DMSO to 50 mM
Storage:	Store at -20°C
Batch Molecular Structure:	



2. ANALYTICAL DATA

HPLC:	Shows 97.2% purity
¹H NMR:	Consistent with structure
Mass Spectrum:	Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

bio-techne.com
info@bio-techne.com
techsupport@bio-techne.com

North America
Tel: (800) 343 7475

China
info.cn@bio-techne.com
Tel: +86 (21) 52380373

Europe Middle East Africa
Tel: +44 (0)1235 529449

Rest of World
www.tocris.com/distributors
Tel: +1 612 379 2956

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Description:

Phorbol 12,13-dibutyrate is a protein kinase C activator. Induces contraction of vascular smooth muscle and inhibits MLC phosphatase (MLCP) in vascular smooth muscle. Activity does not alter intracellular Ca²⁺ concentration. Also inhibits the activity of Na⁺,K⁺ ATPase in OK cells. Used in protocol (see below) to generate pancreatic β cells from hPSCs. For more information about how Phorbol 12,13-dibutyrate may be used, see our protocol: Generation of β cells from hPSCs Please see product specific page on www.tocris.com for full description.

Physical and Chemical Properties:

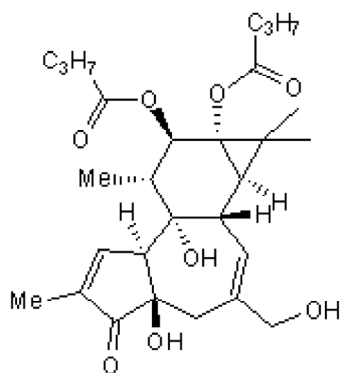
Batch Molecular Formula: C₂₈H₄₀O₈

Batch Molecular Weight: 504.61

Physical Appearance: Off-white solid

Minimum Purity: ≥97%

Batch Molecular Structure:



References:

Sakai *et al* (2010) Augmented PDBu-mediated contraction of bronchial smooth muscle of mice with antigen-induced airway hyperresponsiveness. *J.Smooth Muscle Res.* **46** 259. PMID: 21187674.

Hori *et al* (1999) Presynaptic mechanism for phorbol ester-induced synaptic potentiation. *J.Neurosci.* **19** 7262. PMID: 10460232.

Middleton *et al* (1993) Heterogeneity of protein kinase C-mediated rapid regulation of Na/K-ATPase in kidney epithelial cells. *J.Biol.Chem.* **268** 15958. PMID: 8393456.

Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 50 mM

When purchased as a 1mg unit, this product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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techsupport@bio-techne.com

North America

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