

Product data sheet



MedKoo Cat#: 555137 Name: Ingenol CAS: 30220-46-3 Chemical Formula: C ₂₀ H ₂₈ O ₅ Exact Mass: 348.1937 Molecular Weight: 348.439		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

Ingenol is a diterpenoid related to phorbol, derived from the milkweed plant *E. peplus*. Most ingenol esters are tumor-promoting. However, ingenol mebutate possesses anti-tumor activity when used topically for actinic keratosis.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	10.0	28.70
DMSO	58.0	166.46
Ethanol	10.0	28.70
PBS (pH 7.2)	0.5	1.43

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.87 mL	14.35 mL	28.70 mL
5 mM	0.57 mL	2.87 mL	5.74 mL
10 mM	0.29 mL	1.44 mL	2.87 mL
50 mM	0.06 mL	0.29 mL	0.57 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Silva VAO, Rosa MN, Tansini A, Martinho O, Tanuri A, Evangelista AF, Cruvinel Carloni A, Lima JP, Pianowski LF, Reis RM. Semi-Synthetic Ingenol Derivative from *Euphorbia tirucalli* Inhibits Protein Kinase C Isoforms and Promotes Autophagy and S-phase Arrest on Glioma Cell Lines. *Molecules*. 2019 Nov 22;24(23):4265. doi: 10.3390/molecules24234265. PMID: 31771098; PMCID: PMC6930609.
- Kwaa AK, Goldsborough K, Walker-Sperling VE, Pianowski LF, Gama L, Blankson JN. The effect of Ingenol-B on the suppressive capacity of elite suppressor HIV-specific CD8⁺ T cells. *PLoS One*. 2017 May 3;12(5):e0174516. doi: 10.1371/journal.pone.0174516. PMID: 28467486; PMCID: PMC5414940.

In vivo study

- Wang D, Liu P. Ingenol-3-Angelate Suppresses Growth of Melanoma Cells and Skin Tumor Development by Downregulation of NF-κB-Cox2 Signaling. *Med Sci Monit*. 2018 Jan 25;24:486-502. doi: 10.12659/msm.906049. PMID: 29368698; PMCID: PMC5793690.

Product data sheet



2. Li L, Shukla S, Lee A, Garfield SH, Maloney DJ, Ambudkar SV, Yuspa SH. The skin cancer chemotherapeutic agent ingenol-3-angelate (PEP005) is a substrate for the epidermal multidrug transporter (ABCB1) and targets tumor vasculature. *Cancer Res.* 2010 Jun 1;70(11):4509-19. doi: 10.1158/0008-5472.CAN-09-4303. Epub 2010 May 11. PMID: 20460505; PMCID: PMC2880198.

7. Bioactivity

Biological target:

Ingenol is a PKC activator, with a K_i of 30 μ M, with antitumor activity.

In vitro activity

Furthermore, IngC (ingenol-3-dodecanoate) acted as a potent inhibitor of protein kinase C (PKC) activity, an emerging therapeutic target in glioma cells, showing differential actions against various PKC isotypes. These findings identify IngC as a promising lead compound for the development of new cancer therapy and they may guide the search for additional PKC inhibitors.

Reference: *Molecules.* 2019 Nov 22;24(23):4265. <https://pubmed.ncbi.nlm.nih.gov/31771098/>

In vivo activity

I3A (ingenol-3-angelate) inhibited TPA-induced inflammation and epidermal hyperplasia in female ICR mice by downregulating NF- κ B and iNOS. I3A suppressed the growth of skin tumor in DMBA-induced mice in dose-dependent manner.

Reference: *Med Sci Monit.* 2018 Jan 25;24:486-502. <https://pubmed.ncbi.nlm.nih.gov/29368698/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.