

PRODUCT INFORMATION

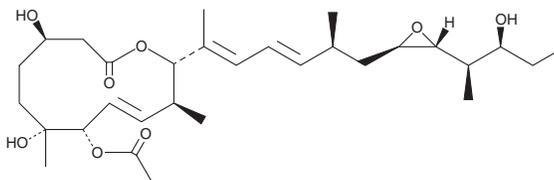


Pladienolide B

Item No. 16538

CAS Registry No.: 445493-23-2
Formal Name: (4R,7R,8S,9E,11S,12S)-8-(acetyloxy)-4,7-dihydroxy-12-[(1E,3E,5S)-6-[(2R,3R)-3-[(1R,2S)-2-hydroxy-1-methylbutyl]-2-oxiranyl]-1,5-dimethyl-1,3-oxacyclododec-9-en-2-one

MF: C₃₀H₄₈O₈
FW: 536.7
Purity: ≥95%
Supplied as: A clear film
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Pladienolide B is supplied as a clear film. A stock solution may be made by dissolving the pladienolide B in the solvent of choice, which should be purged with an inert gas. Pladienolide B is soluble in ethanol, methanol, DMSO, and dimethyl formamide.

Description

Spliceosomes mediate the processing of pre-mRNA into mature mRNA.^{1,2} Each spliceosome is a multiunit complex containing several proteins and RNA molecules that work in unison to repeatedly cleave and rejoin segments of mRNA.^{1,2} Pladienolide B is a macrocyclic lactone that selectively binds splicing factor 3b and inhibits mRNA splicing.^{3,4} Through this action, pladienolide B potently blocks the growth of proliferating cells with mean IC₅₀ values of 1.6 nM for six gastric cancer cell lines.^{5,6} In xenograft tumors generated in mice using human cancer cells, pladienolide B blocks mRNA splicing and induces apoptosis, clearing tumors within two weeks after treatment.⁶

References

1. Naro, C. and Sette, C. Phosphorylation-mediated regulation of alternative splicing in cancer. *Int. J. Cell Biol.* 151839 (2013).
2. Webb, T.R., Joyner, A.S., and Potter, P.M. The development and application of small molecule modulators of SF3b as therapeutic agents for cancer. *Drug Discov. Today* **18(1-2)**, 43-49 (2013).
3. Yokoi, A., Kotake, Y., Takahashi, K., *et al.* Biological validation that SF3b is a target of the antitumor macrolide pladienolide. *FEBS J.* **278(24)**, 4870-4880 (2011).
4. Kotake, Y., Sagane, K., Owa, T., *et al.* Splicing factor SF3b as a target of the antitumor natural product pladienolide. *Nat. Chem. Biol.* **3(9)**, 570-575 (2007).
5. Effenberger, K.A., Anderson, D.D., Bray, W.M., *et al.* Coherence between cellular responses and *in vitro* splicing inhibition for the anti-tumor drug pladienolide B and its analogs. *J. Biol. Chem.* **289(4)**, 1938-1947 (2014).
6. Sato, M., Muguruma, N., Nakagawa, T., *et al.* High antitumor activity of pladienolide B and its derivative in gastric cancer. *Cancer Sci.* **105(1)**, 110-116 (2014).

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.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 09/29/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM