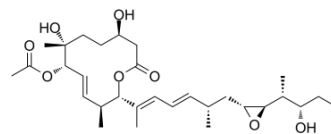


## Pladienolide B

<b>Cat. No.:</b>	HY-16399
<b>CAS No.:</b>	445493-23-2
<b>Molecular Formula:</b>	C <sub>30</sub> H <sub>48</sub> O <sub>8</sub>
<b>Molecular Weight:</b>	536.7
<b>Target:</b>	Apoptosis
<b>Pathway:</b>	Apoptosis
<b>Storage:</b>	Please store the product under the recommended conditions in the Certificate of Analysis.



### BIOLOGICAL ACTIVITY

<b>Description</b>	Pladienolide B is a potent cancer cell growth inhibitor that targets the SF3B1 subunit of the spliceosome. Pladienolide B exerts antitumor activities mediated through the inhibition of pre-mRNA splicing. Pladienolide B induces apoptosis <sup>[1][2][3]</sup> .																						
<b>In Vitro</b>	<p>Pladienolide B (0.1-2 nM; 24-72 hours) inhibits human cervical carcinoma cells viability<sup>[3]</sup>.</p> <p>Pladienolide B (0.1-2 nM; 24-48 hours) reduces SF3b1 expression in human cervical carcinoma cells<sup>[3]</sup>.</p> <p>Pladienolide B induces (0.1-2 nM; 24 hours) cell cycle arrest and apoptosis<sup>[3]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[3]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HeLa cells</td> </tr> <tr> <td>Concentration:</td> <td>0.1, 0.5, 1, 1.5, 2 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24, 48, 72 hours</td> </tr> <tr> <td>Result:</td> <td>Significantly decreased cell viability, and the decrease was concentration- and time-dependent.</td> </tr> </table> <p>Apoptosis Analysis<sup>[3]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HeLa cells</td> </tr> <tr> <td>Concentration:</td> <td>0.1, 0.5, and 2 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>The apoptotic cells were highly induced at 24 hours.</td> </tr> </table> <p>RT-PCR<sup>[3]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>HeLa cells</td> </tr> <tr> <td>Concentration:</td> <td>0.1, 0.5, and 2 nM</td> </tr> <tr> <td>Incubation Time:</td> <td>24, 48 hours</td> </tr> </table>	Cell Line:	HeLa cells	Concentration:	0.1, 0.5, 1, 1.5, 2 nM	Incubation Time:	24, 48, 72 hours	Result:	Significantly decreased cell viability, and the decrease was concentration- and time-dependent.	Cell Line:	HeLa cells	Concentration:	0.1, 0.5, and 2 nM	Incubation Time:	24 hours	Result:	The apoptotic cells were highly induced at 24 hours.	Cell Line:	HeLa cells	Concentration:	0.1, 0.5, and 2 nM	Incubation Time:	24, 48 hours
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	Result:	Induced a time- and concentration-dependent decrease in cellular SF3b1 proteins.
<b>In Vivo</b>	Pladienolide B (2.5-10 mg/kg; i.v.; daily for 5 days) has strong antitumor activities <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Female or male BALB/c nu/nu mice (7 weeks of age) (PC-3, OVCAR-3, DU-145, WiDr, and HCT-116, BSY-1 xenografts) <sup>[4]</sup>
	Dosage:	2.5, 5, and 10 mg/kg
	Administration:	I.v.; daily for 5 days
	Result:	Showed strong growth inhibitory or regressive activities against these xenografts.

## REFERENCES

- [1]. Effenberger KA, et al. Coherence between cellular responses and in vitro splicing inhibition for the anti-tumor drug pladienolide B and its analogs. *J Biol Chem.* 2014 Jan 24;289(4):1938-47.
- [2]. Aouida M, et al. CRISPR/Cas9-mediated target validation of the splicing inhibitor Pladienolide B. *Biochim Open.* 2016 Feb 24;3:72-75.
- [3]. Zhang Q, et al. Inhibition of SF3b1 by pladienolide B evokes cycle arrest, apoptosis induction and p73 splicing in human cervical carcinoma cells. *Artif Cells Nanomed Biotechnol.* 2019 Dec;47(1):1273-1280.
- [4]. Mizui Y, et al. Pladienolides, new substances from culture of *Streptomyces platensis* Mer-11107. III. In vitro and in vivo antitumor activities. *J Antibiot (Tokyo).* 2004 Mar;57(3):188-96.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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