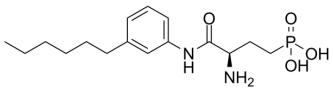
W146

Cat. No.:	HY-101395
CAS No.:	909725-61-7
Molecular Formula:	$C_{16}H_{27}N_2O_4P$
Molecular Weight:	342.37
Target:	LPL Receptor; Apoptosis
Pathway:	GPCR/G Protein; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 22.22 mg/mL (64.90 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9208 mL	14.6041 mL	29.2082 mL
5 mM	0.5842 mL	2.9208 mL	5.8416 mL
10 mM	0.2921 mL	1.4604 mL	2.9208 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.22 mg/mL (6.48 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.22 mg/mL (6.48 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.22 mg/mL (6.48 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

W146 is a selective antagonist of sphingosine-1-phosphate receptor 1 (S1PR1) with an EC_{50} value of 398 nM.

IC_{50} & Target

EC50: 398 nM (S1PR1)[1].

In Vitro

W146 is a S1PR1 antagonist with a K_i of ~70-80 nM[1].

W146 pretreatment significantly increases activated cleaved caspase-3 levels. The reduced EPCs apoptosis which induced by S1P is completely abolished after treatment with W146[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Apoptosis Analysis[2]

Cell Line:	Endothelial progenitor cells (EPCs).
Concentration:	10 μM.
Incubation Time:	30 min before the addition of S1P.
Result:	Increases activated cleaved caspase-3 levels.

In Vivo

W146 (5 mg/kg, ip, prior to AMD3100 administration) pre-treatment shows approximately 8-fold increase of KSL-HSPC mobilization, measured by the CFU-G/M colony forming assays, compared to that in mice treated with AMD3100 alone[3]
The W146-mediated augmentation of KSL-HSPC mobilization is specific, because pretreatment of mice with W140 is unable to produce any effect on AMD3100-stimulated KSL-HSPC mobilization. Injections of W146, W140, JTE013, or Cay10444 do not alter the basal WBC count in mice[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Mice (4-6-week-old)[3] .
Dosage:	5 mg/kg.
Administration:	IP, 1 hour prior to AMD3100 (ADM) administration.
Result:	Significantly increased in KSL-HSPC mobilization compared to that in mice pretreated with dextran followed by AMD3100 administration.

REFERENCES

[1]. M Germana Sanna, et al. Enhancement of capillary leakage and restoration of lymphocyte egress by a chiral S1P1 antagonist in vivo. Nat Chem Biol. 2006 Aug;2(8):434-41. Epub 2006 Jul 9.

[2]. Hang Wang, et al. Sphingosine-1-phosphate promotes the proliferation and attenuates apoptosis of Endothelial progenitor cells via S1PR1/S1PR3/PI3K/Akt pathway. Cell Biol Int. 2018 May 23.

[3]. Jingjing Liu, et al. 3-amino-4-(3-hexylphenylamino)-4-oxobutyl phosphonic acid (W146), a Selective Antagonist of Sphingosine-1-phospahte Receptor Subtype 1, Enhances AMD3100-stimulated Mobilization of Hematopoietic Stem Progenitor Cells in Animals. J Bioc

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