D-erythro-Sphingosine

Cat. No.: HY-101047

CAS No.: 123-78-4

Molecular Formula: $C_{18}H_{37}NO_2$

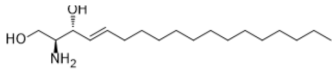
Molecular Weight: 299.49

Target: PKC; Endogenous Metabolite; Phosphatase

Pathway: Epigenetics; TGF-beta/Smad; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (166.95 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3390 mL	16.6950 mL	33.3901 mL
	5 mM	0.6678 mL	3.3390 mL	6.6780 mL
	10 mM	0.3339 mL	1.6695 mL	3.3390 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: ≥ 2.5 mg/mL (8.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

D-erythro-Sphingosine (Erythrosphingosine) is a very potent activator of p32-kinase with an EC_{50} of 8 μM, and inhibits protein kinase C (PKC). D-erythro-Sphingosine (Erythrosphingosine) is also a PP2A activator[1][2][3][4].

IC_{50} & Target

p32 8 μM (EC50)	PKC	PP2A	Human Endogenous Metabolite
Microbial Metabolite			

In Vitro

A p32-sphingosine-activated protein kinase responds to low concentrations of D-erythro-Sphingosine with an initial activation observed at 2.5 μM and a peak activity at 10-20 μM. This kinase shows a modest specificity for D-erythro-

Sphingosine over other sphingosine tereoisomers, and a preference for sphingosines over ihydrosphingosines[1]. D-erythro-Sphingosine inhibits protein kinase C in vitro[2]. D-erythro-Sphingosine has been shown to inhibit protein kinase C, which affects cell regulation and several signal transduction pathways, and exhibits antitumor promoter activities in various mammalian cells[3].

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

CUSTOMER VALIDATION

- J Agric Food Chem. 2022 Aug 26.
- Mol Med. 2022 Sep 6;28(1):106.

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REFERENCES

[1]. Pushkareva MYu, et al. Regulation of sphingosine-activated protein kinases: selectivity of activation by sphingoid basesand inhibition by non-esterified fatty acids. Biochem J. 1993 Sep 15;294 (Pt 3):699-703.

[2]. Khan WA, et al. Protein kinase C and platelet inhibition by D-erythro-Sphingosine: comparison with N,N-dimethylsphingosine and commercial preparation. Biochem Biophys Res Commun. 1990 Oct 30;172(2):683-91.

[3]. Pham VT, et al. A concise synthesis of a promising protein kinase C inhibitor: D-erythro-Sphingosine. Arch Pharm Res. 2007 Jan;30(1):22-7.

[4]. Cheng P, et al. Protein phosphatase 2A (PP2A) activation promotes axonal growth and recovery in the CNS. J Neurol Sci. 2015 Dec 15;359(1-2):48-56.

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