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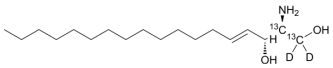
D-erythro-Sphingosine-$^{13}C_2$,d_2

Cat. No.:	HY-101047S1
CAS No.:	2692623-81-5
Molecular Formula:	$C_{16}{}^{13}C_2H_{35}D_2NO_2$
Molecular Weight:	303.49
Target:	PKC; Endogenous Metabolite; Phosphatase; Isotope-Labeled Compounds
Pathway:	Epigenetics; TGF-beta/Smad; Metabolic Enzyme/Protease; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	D-erythro-Sphingosine-13C2,d2 is a deuterated labeled D-erythro-Sphingosine[1]. 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[2][3][4][5].
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. 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[2]. D-erythro-Sphingosine inhibits protein kinase C in vitro[3]. 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[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. 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.

[2]. 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.

[3]. 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.

[4]. 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.

[5]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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