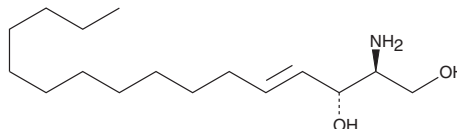


PRODUCT INFORMATION

Sphingosine (d16:1)

Item No. 22356

CAS Registry No.: 6982-09-8
Formal Name: (2S,3R,4E)-2-amino-4-hexadecene-1,3-diol
Synonym: D-erythro-Sphingosine C-16
MF: C₁₆H₃₃NO₂
FW: 271.4
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Sphingosine (d16:1) is supplied as a crystalline solid. A stock solution may be made by dissolving the sphingosine (d16:1) in the solvent of choice. Sphingosine (d16:1) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. Sphingosine (d16:1) is miscible in ethanol and has a solubility of approximately 2 and 10 mg/ml in DMSO and DMF, respectively.

Description

Sphingosine (d16:1) is an atypical sphingolipid formed by a series of enzymatic steps beginning with the condensation of myristoyl-CoA and serine via serine palmitoyltransferase long-chain base subunit 3 (SPTLC3), an SPT subunit that prefers myristoyl-CoA over palmitoyl-CoA.^{1,2} Sphingosine d16:1 is present in its free form at low levels in human plasma and as the sphingoid base in a variety of plasma sphingolipid species, including sphingosine-1-phosphate, ceramides, and sphingomyelins, as well as brain cerebroside, at lower levels compared with the typical d18:1 (Item No. 10007907) sphingoid base.³⁻⁶ Sphingosine (d16:1) inhibits PKC in a mixed micelle activity assay.⁷ It reduces the production of superoxide induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) in isolated human neutrophils and reduces the growth of CHO cells (IC₅₀s = 1 and 3.2 μM, respectively). Plasma levels of sphingolipids containing sphingosine (d16:1) are associated with dietary intake of saturated fatty acids and protein in ethnic Chinese individuals.⁶ Plasma levels of sphingolipids containing sphingosine (d16:1) are decreased in patients with type 2 diabetes.⁸

References

1. Hornemann, T., Penno, A., Rütli, M.F., et al. *J. Biol. Chem.* **284**(39), 26322-26330 (2009).
2. Lai, M.K.P., Chew, W.S., Torta, F., et al. *Neuromolecular Med.* **18**(3), 396-414 (2016).
3. Scherer, M., Böttcher, A., Schmitz, G., et al. *Biochim. Biophys. Acta* **1811**(2), 68-75 (2011).
4. Karlsson, K.-A. *Lipids* **5**(11), 878-891 (1970).
5. Quehenberger, O., Armando, A.M., Brown, A.H., et al. *J. Lipid Res.* **51**(11), 3299-3305 (2010).
6. Seah, J.Y.H., Chew, W.S., Torta, F., et al. *Metabolites* **11**(2), 93 (2021).
7. Merrill, A.H., Jr., Nimkar, S., Menaldino, D., et al. *Biochemistry* **28**(8), 3138-3145 (1989).
8. Othman, A., Rütli, M.F., Ernst, D., et al. *Diabetologia* **55**(2), 421-431 (2012).

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.

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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