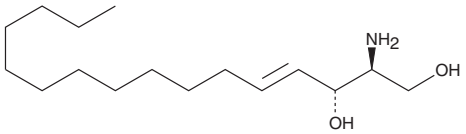
PRODUCT INFORMATION

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: $C_{16}H_{33}NO_2$
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 cerebrosides, 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 (IC_{50}s = 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., Rütti, 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., Rütti, M.F., Ernst, D., *et al. Diabetologia* **55(2)**, 421-431 (2012).

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