

PRODUCT DATA SHEET

D,L-C16-Dihydrospingosine, (mixed isomers)

Catalog number: 1326

Synonyms: D,L-Sphinganine, with C16:0 chain

Source: synthetic

Solubility: chloroform, methanol, ethanol,
DMSO

CAS number: N/A

Molecular Formula: C₁₆H₃₅NO₂

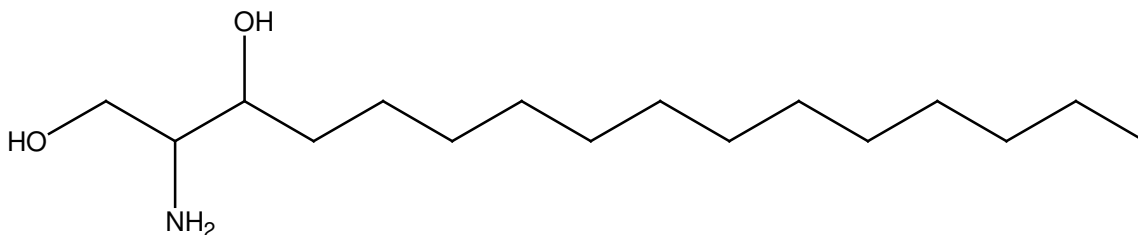
Molecular Weight: 273

Storage: -20°C

Purity: TLC >98% (90% *erythro*, 10% *threo*)

TLC System: chloroform/methanol/DI
water/ammonium hydroxide (70:20:1:1 by vol.)

Appearance: solid



Application Notes:

This dihydrospingosine standard is a mixture of D and L isomers and contains approximately 90% *erythro* and 10% *threo* isomers. It is a 16 carbon chain, two carbons shorter than the most prevalent dihydrospingosine in most animals. However, some animals, such as *Drosophila melanogaster*, have the shorter C16 dihydrospingosine base.¹ Dihydrospingosine (Sphinganine) is the precursor of dihydroceramide which is then desaturated to form ceramide. It is a critical intermediate in the synthesis of many complex sphingoid bases and ceramide analogs. It has been found that sphinganine can induce cell death in a number of types of malignant cells and is being tested for its pharmacological properties.² Inhibition of dihydroceramide synthesis by some fungal toxins that have a similar structure causes an increase in sphinganine and sphinganine-1-phosphate and a decrease in other sphingolipids leading to a number of diseases including oesophageal cancer.³ Sphinganine has been found to mediate fumonisin (a toxic sphinganine analog) induced hypotension.⁴

Selected References:

1. H. Fyrst et al. "Characterization of free endogenous C14 and C16 sphingoid bases from *Drosophila melanogaster*" *Journal of Lipid Research*, vol. 45 pp. 54-62, 2004
2. W. Zheng "Fenretinide increases dihydroceramide and dihydrospingolipids due to inhibition of dihydroceramide desaturase" Georgia Institute of Technology, 2006
3. L. van der Westhuizen et al. "Sphingoid base levels in humans consuming fumonisin-contaminated maize in rural areas of the former Transkei, South Africa: a cross-sectional study" *Food Additives and Contaminants*, Vol. 25(11), pages 1385 – 1391, 2008
4. Shih-Hsuan Hsiao et al. "Effects of Exogenous Sphinganine, Sphingosine, and Sphingosine-1-Phosphate on Relaxation and Contraction of Porcine Thoracic Aortic and Pulmonary Arterial Rings" *Toxicological Sciences*, Vol. 86(1) Pp. 194-199, 2005

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