

PRODUCT DATA SHEET

D-erythro-Sphingosine

Catalog number: 1802

Common Name: Sphingosine, C18 chain

Source: synthetic

Solubility: chloroform, ethanol, methanol,
DMSO

CAS NO: 123-78-4

Molecular Formula: C₁₈H₃₇NO₂

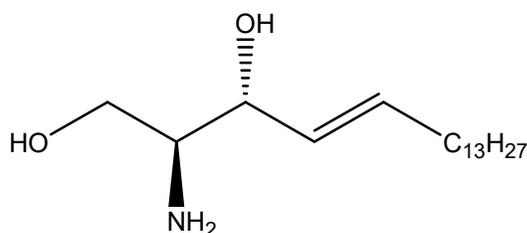
Molecular Weight: 300

Storage: -20°C

Purity: TLC: >98%; GC: >98%; identity
confirmed by MS

TLC System: chloroform/methanol/DI water/
2.5N ammonium hydroxide
(70:20:1:1 by vol.)

Appearance: solid



IUPAC Name: (2S,3R)-D-erythro-2-amino-1,3-Octadec-4E-enediol

Application notes:

Sphingosine is a characteristic structural unit of many sphingolipids such as ceramides, gangliosides, globosides, sulfatides, sphingomyelin, and others.^{1,2} It is most abundant in nervous tissue and cell membranes. Sphingosine with an 18-carbon chain and a double bond at carbon 4 is the most abundant sphingosine in animal tissues. Lysosphingolipids inhibit protein kinase C activity resulting in the pathogenesis of sphingolipidoses such as Krabbe's disease and Gaucher's disease.³ Sphingosine can be phosphorylated via two kinases to form sphingosine-1-phosphate, which has important signaling functions. While sphingosines and ceramides can induce apoptosis,⁴ sphingosine-1-phosphate can promote cell survival or proliferation. Sphingosine has been shown to cause an increase in the cytoplasmic calcium level of cells.

Selected References:

1. A. Merrill, Jr. "De Novo Sphingolipid Biosynthesis: A Necessary, but Dangerous, Pathway" *The Journal of Biological Chemistry*, Vol. 277(29) pp. 25843-25846, 2002
2. J. Shayman "Sphingolipids" *Kidney International*, Vol. 58 pp. 11-26, 2000
3. Y. Hannun and R. Bell "Lysosphingolipids inhibit protein kinase C: implications for the sphingolipidoses." Vol. 235:4789 pp. 670, 1987
4. V. Nava et al. "Sphingosine Enhances Apoptosis of Radiation-resistant Prostate Cancer Cells" *Cancer Research*, Vol. 60 pp. 4468-4474, 2000

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