

PRODUCT DATA SHEET

D-erythro-C14-Sphingosine

Catalog No: 1833

Common Name: Sphingosine with C14 chain

Source: synthetic

Solubility: chloroform, methanol, ethanol,
DMSO

CAS No: 24558-60-9

Molecular Formula: C₁₄H₂₉NO₂

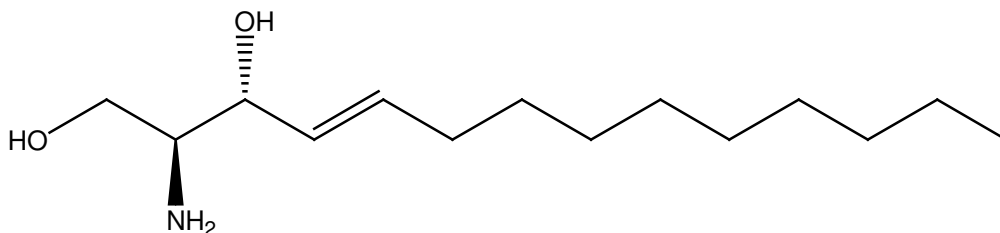
Molecular Weight: 243

Storage: -20°C

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

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

Appearance: solid



Application Notes:

Sphingosine is a characteristic structural unit of many sphingolipids such as ceramides, gangliosides, globosides, sulfatides, sphingomyelin, and others.¹ 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 but D-erythro-C14-sphingosine is the most common long chain base (LCB) in some organisms such as *Drosophila*. This shorter LCB is considerably less hydrophobic which could significantly change the process of signal transduction.² D-erythro-C14-sphingosine has recently been found to act as a germination-accelerating factor in silkworms with much greater activity than its shorter or longer homologues.³ Lysosphingolipids inhibit protein kinase C activity resulting in the pathogenesis of sphingolipidoses such as Krabbe's disease and Gaucher's disease. 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. 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
3. T. Noda et al. "Characterization of a germination-accelerating factor from the silkworm (*Bombyx mori* Linnaeus) of entomopathogenic fungus *Nomuraea rileyi* (Farlow) Samson" *Biosci Biotechnol Biochem*, Vol. 74(6) pp. 1226-1230, 2010
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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