

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

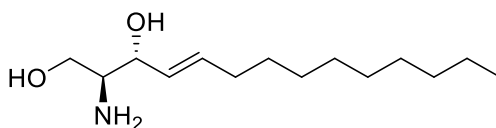
Molecular Weight: 243

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

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.