

PRODUCT DATA SHEET

D,L-erythro-C20-Dihydrosphingosine

Catalog number: 1839

Common Name: D,L-erythro-C20-Sphinganine

Source: synthetic

Solubility: chloroform/methanol, 5:1; warm ethanol

CAS number: N/A

Molecular Formula: C₂₀H₄₃NO₂

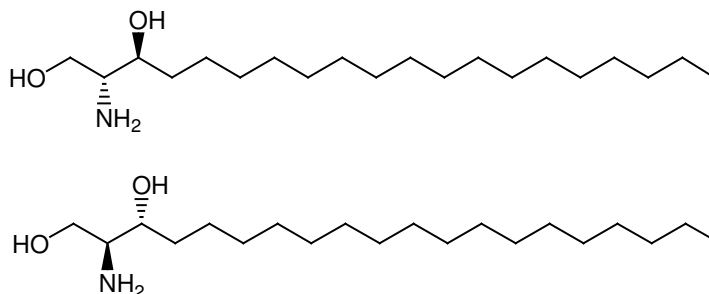
Molecular Weight: 330

Storage: -20°C

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

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

Appearance: solid



Application Notes:

This product contains both the natural D-erythro isomer and the non-natural L-erythro isomer of dihydrosphingosine. C20 sphingoid bases are common in many organisms and are usually the second most abundant after the C18 sphingoid base. In *Saccharomyces cerevisiae* it has been found that the amount of C20 dihydrosphingosine increases by 100 fold following heat stress, indicating that it is involved in the signaling of heat stress response.¹ Sphinganine (dihydrosphingosine) 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 In yeast the amount of C20-dihydrosphingosine increases as a response to heat stress along with other sphingolipids, indicating that it is involved in heat stress adaptation.

Selected References:

1. R. Dickson et al. "Sphingolipids Are Potential Heat Stress Signals in *Saccharomyces*" *The Journal of Biological Chemistry*, vol. 272 pp. 30196-30200, 1997
2. W. Zheng "Fenretinide increases dihydroceramide and dihydrosphingolipids 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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