

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

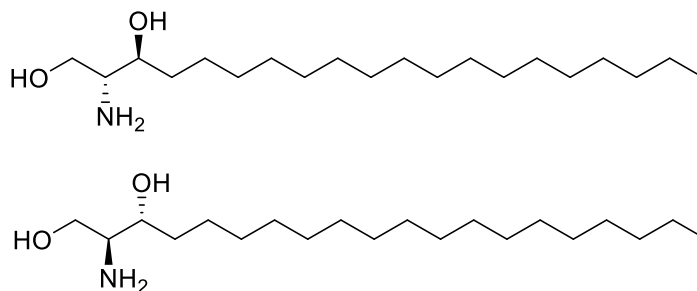
Molecular Weight: 330

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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