

PRODUCT DATA SHEET

L-erythro-Dihydrosphingosine

Catalog number: 1846

Common names: L-erythro-Sphinganine, C18 chain

Source: synthetic

Solubility: chloroform, methanol, ethanol, DMSO

CAS number: 6036-76-6

Molecular Formula: C₁₈H₃₉NO₂

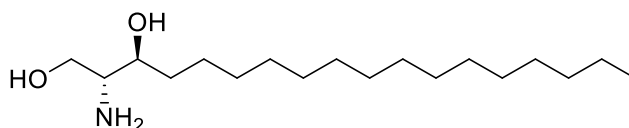
Molecular Weight: 301

Storage: -20°C

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

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

Appearance: solid



Application Notes:

This product is a high purity, well-defined, L-erythro-dihydrosphingosine which demonstrates unique properties as compared with the natural D-erythro isomer and is therefore ideal for use in studies of dihydrosphingosine. Natural D-erythro-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 dihydrosphingosine can induce cell death in a number of types of malignant cells and it is being tested for its pharmacological properties.¹ Whereas both D-threo and L-threo-C2-dihydroceramide induced apoptosis in cells neither D-erythro nor L-erythro-C2-dihydroceramide showed activity.² One report has concluded that all four of the enantiomers of dihydrosphingosine act as substrates for sphingosine kinase with only the natural D-erythro-dihydrosphingosine being metabolized by sphinganine-1-phosphate lyase.³ However, another report concludes that only the erythro isomers of dihydrosphingosine act as substrates for this enzyme with both of the threo isomers inhibiting its activity.⁴

Selected References:

1. W. Zheng "Fenretinide increases dihydroceramide and dihydrosphingolipids due to inhibition of dihydroceramide desaturase" Georgia Institute of Technology, 2006
2. A. Bielawska "Selectivity of Ceramide-Mediated Biology Lack of Activity of erythro-Dihydroceramide" *Journal of Biological Chemistry*, vol. 268 pp. 26226-26232, 1993
3. W. Stoffel and K. Bister "Stereospecificities in the metabolic reactions of the four isomeric sphinganine (dihydrosphingosines) in rat liver" *Hoppe Seylers Z Physiol Chem*, vol. 354 pp. 169-181, 1973
4. B. Buehrer and R. Bell "Inhibition of Sphingosine Kinase *in Vitro* and in Platelets Implications for Signal Transduction Pathways" *Journal of Biological Chemistry*, vol. 267 pp. 3154-3159, 1992

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