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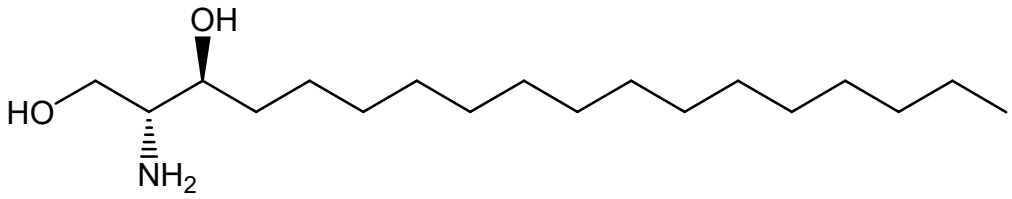
PRODUCT DATA SHEET

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: $C_{18}H_{39}NO_2$
Molecular Weight: 301
Storage: -20ºC
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 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 dihydrosphingsoine 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 sphinganines (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*