

# 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<sub>18</sub>H<sub>39</sub>NO<sub>2</sub>

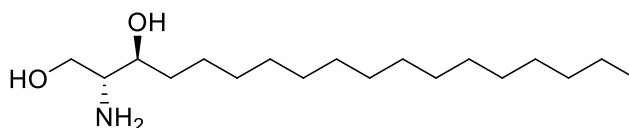
**Molecular Weight:** 301

**Storage:** -20°C

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

**TLC System:** chloroform/methanol/DI water/2.5N 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.<sup>1</sup> Whereas both D-threo and L-threo-C2-dihydroceramide induced apoptosis in cells neither D-erythro nor L-erythro-C2-dihydroceramide showed activity.<sup>2</sup> 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.<sup>3</sup> 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.<sup>4</sup>

### 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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