N-Hexanoyl-L-threo-sphingosine

**Catalog number:** 1828  
**Common names:** N-C6:0-L-threo-Ceramide  
**Source:** synthetic  
**Solubility:** chloroform, ethanol, DMSO, DMF (up to 5 mg/ml)  
**CAS number:** 189894-80-2

**Molecular Formula:** C_{24}H_{47}NO_{3}  
**Molecular Weight:** 398  
**Storage:** -20°C  
**Purity:** TLC >98%, GC >98%; identity confirmed by MS  
**TLC System:** chloroform/methanol (90:10)  
**Appearance:** solid

**Application Notes:**

This product is the non-natural L-threo stereoisomer of ceramide. Natural D-erythro ceramide is a critical compound in cells both as a free ceramide and incorporated into more complex sphingolipids. L-threo-ceramides demonstrate a different metabolic functionality from natural ceramides. They have been shown to be metabolized to sphingomyelin but not to glucosylceramide.\(^1\) Another non-natural stereoisomer, L-erythro ceramide, is not metabolized to any sphingolipid. In contrast to natural ceramides L-threo ceramides are unable to antagonize the disruptive effects of fumonisin B1 on axon growth\(^2\) but it is able to activate intracellular pathways and induces apoptosis.\(^3\) The deacylated form of ceramide, sphingosine, also has many critical cellular functions. L-threo-sphingosine, along with other sphingosine isomers, has been found to be an activator of 3-Phosphoinositide-dependent kinase-1\(^4\) and inhibits protein kinase C a little more potently than D-erythro-sphingosine.\(^5\)

**Selected References:**

5. V. Stevens et al. “Structural requirements for long-chain (sphingoid) base inhibition of protein kinase C in vitro and for the cellular effects of these compounds” *Biochemistry*, vol. 28, 3138-3145, 1989

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