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 by vol.)  
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 fumonisins 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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