PRODUCT DATA SHEET

N-Dodecanoyl-NBD-L-threo-sphingosine

Catalog number: 1620
Synonyms: N-C12:0-NBD-L-threo-Ceramide; N-C12:0-NBD-L-threo-Sphingosine, fluorescent
Source: synthetic
Solubility: chloroform/methanol (2:1); methanol
CAS number: 474943-08-3
Molecular Formula: C_{36}H_{61}N_{5}O_{6}
Molecular Weight: 660
Storage: -20˚C
Purity: TLC: >98%; identity confirmed by MS
TLC System: chloroform/methanol (90:10)
Appearance: solid

Application Notes:
This product is a fluorescent L-threo-ceramide. The NBD fluorescent group has been shown to have only a small influence on lipid adsorption into cells and cellular membranes and this fluorescent analog of L-threo-ceramide is comparable to C12:0-L-threo-ceramide in many biological functions such as lipid uptake and transport, structural determinants, and lipid partitioning. L-threo-ceramide is a non-natural isomer of ceramide. The natural D-erythro isomer 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. 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 but it is able to activate intracellular pathways and induces apoptosis. 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 and inhibits protein kinase C a little more potently than D-erythro-sphingosine.

Selected References:

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