

PRODUCT DATA SHEET

N-Hexanoyl-NBD-D-erythro-dihydrosphingosine

Catalog number: 1626

Common Name: N-C6:0-NBD-Dihydroceramide; N-C6:0-NBD-D-erythro-Dihydrosphingosine

Source: synthetic

Solubility: chloroform/methanol (2:1), methanol

CAS number: 114301-97-2

Molecular Formula: C₃₀H₅₁N₅O₆

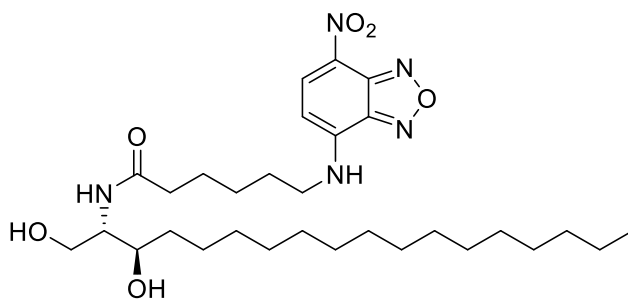
Molecular Weight: 578

Storage: -20°C

Purity: TLC >98%; identity confirmed by MS

TLC System: chloroform/methanol (90:10 by vol.)

Appearance: solid



Application Notes:

This high purity fluorescent product is ideal for the identification of dihydroceramide in samples and biological systems. 7-nitrobenzofurazan (NBD) has been shown to have only a small influence on lipid adsorption into cells and cellular membranes. This fluorescent analog of natural dihydroceramide is comparable to C6:0-dihydroceramide in many biological functions.^{1,2} Dihydroceramide is a critical intermediate in the synthesis of many complex sphingoid bases. Inhibition of dihydroceramide synthesis by some fungal toxins that have a similar structure causes an increase in dihydroceramide and dihydroceramide-1-phosphate and a decrease in other sphingolipids leading to a number of diseases including oesophageal cancer. Dihydroceramide, synthesized by the acylation of sphinganine, is subsequently converted into ceramide via a desaturase enzyme. N-(4-Hydroxyphenyl) retinamide (4-HPR) has been tested as an anti-cancer agent. It inhibits the dihydroceramide desaturase enzyme in cells resulting in a high concentration of dihydroceramide and dihydro-sphingolipids and this is thought to be the cause of the anti-cancer effects.³ Dihydrosphingosine induces cell death in a number of types of malignant cells.

Selected References:

1. G van Meer et al. "Epithelial sphingolipid sorting allows for extensive variation of the fatty acyl chain and the sphingosine backbone" *Journal of Biochemistry*, vol. 283 pp. 913-917, 1992
2. A. Merrill, Jr. et al. "Dihydroceramide Biology STRUCTURE-SPECIFIC METABOLISM AND INTRACELLULAR LOCALIZATION" *Journal of Biological Chemistry*, vol. 272 pp. 21128-21136, 1997
3. W. Zheng "Fenretinide increases dihydroceramide and dihydro-sphingolipids due to inhibition of dihydroceramide desaturase" Georgia Institute of Technology, 2006

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