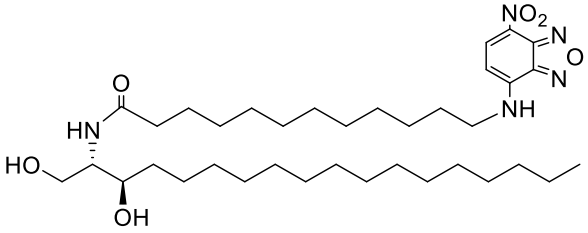
PRODUCT DATA SHEET

N-Dodecanoyl-NBD-D-*erythro*-dihydrosphingosine

Catalog No: 1625
Common Name: N-C12:0-NBD-Dihydroceramide; N-C12:0-NBD-D-*erythro*-Dihydrosphingosine
Source: synthetic
Solubility: chloroform/methanol (2:1 by vol.) methanol
CAS No: 474943-05-0

Molecular Formula: $C_{36}H_{63}N_5O_6$
Molecular Weight: 662
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 C12:0-dyhidroceramide 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. J. Kok et al. "Dihydroceramide Biology STRUCTURE-SPECIFIC METABOLISM AND INTRACELLULAR LOCALIZATION" *Journal of Biological Chemistry*, Vol. 272 pp. 21128-21136, *1997*
2. J. Hsu et al. "Enhanced endothelial delivery and biochemical effects of *alpha*-galactosidase by ICAM-1-targeted nanocarriers for Fabry disease" Journal of Controlled Release, doi:10.1016/j.jconrel.2010.10.031, *2010*
3. W. Zheng "Fenretinide increases dihydroceramide and dihydrosphingolipids due to inhibition of dihydroceramide desaturase" Georgia Institute of Technology, *2006*

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