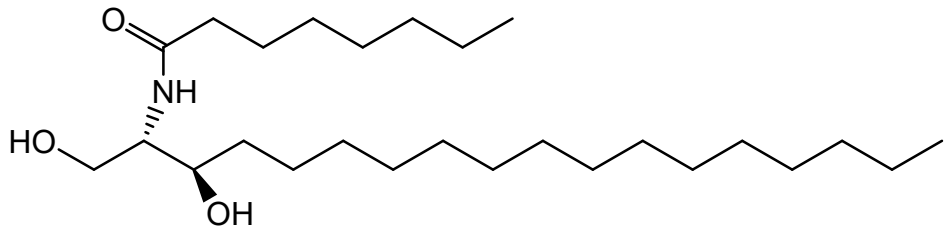
MATREYA LLC
Lipids and Biochemicals
2178 High Tech Road, State College, PA 16803
Tel. 814-355-1030 Fax 814-355-1031 www.matreya.com

PRODUCT DATA SHEET

N-Octanoyl-D-*erythro*-dihydrosphingosine

Catalog number: 1854
Common Name: N-C8:0-D-*erythro*-Dihydroceramide; N-Octanoyl-D-*erythro*-sphinganine
Source: synthetic
Solubility: ethanol, DMSO, chloroform
CAS number: 145774-33-0

Molecular Formula: $C_{26}H_{53}NO_3$
Molecular Weight: 428
Storage: -20°C
Purity: TLC >98%, GC >98%; identity confirmed by MS
TLC System: chloroform/methanol (95:5)
Appearance: solid



Application Notes:

This high purity and well-defined product is ideal as a standard and for biological studies.[1] Dihydroceramide is a critical intermediate in the synthesis of many complex sphingoid bases. Inhibition of dihydroceramide synthesis by some fungal toxins (such as fumonisin B1) that have a similar structure causes an increase in sphinganine and sphinganine-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 or into phytosphingosine via the C4-hydrozylase enzyme[2]. 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. Z. Zakeri et al. "Stereospecific Induction of Apoptosis in U937 Cells by N-Octanoyl-Sphingosine Stereoisomers and N-Octyl-Sphingosine" *European Journal of Biochemistry*, vol. 236 pp. 729-737, *1996*
2. Y. Mizutani, A. Kihara, and Y. Igarashi "Identifcation of the human sphingolipid C4-hydroxylase, hDES2, and its up-regulation during keratinocyte differentiation" *FEBS Letters*, vol. 563 pp. 93-97, *2004*
3. W. Zheng "Fenretinide increases dihydroceramide and dihydrosphingolipids due to inhibition of dihydroceramide desaturase" Georgia Institute of Technology, *2006*