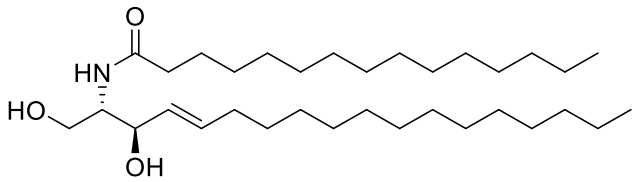
PRODUCT DATA SHEET

N-Pentadecanoyl-D-*erythro*-sphingosine

Catalog number: 2037
Common Name: N-C15:0-D-*erythro*-Ceramide
Source: synthetic
Solubility: chloroform, warm ethanol, warm methanol
CAS number: 67492-15-3

Molecular Formula: $C_{33}H_{65}NO_3$
Molecular Weight: 524
Storage: -20°C
Purity: TLC >98%, HPLC >98%; identity confirmed by MS
TLC System: chloroform/methanol (90:10 by vol.)
Appearance: solid



Application Notes:

This product is a high purity ceramide containing an uncommon C15:0 fatty acid acylated to sphingosine making it ideal as an internal standard and for biological studies.[1] Ceramide is a fatty acid amide of sphingosine. Ceramide functions as a precursor in the synthesis of sphingomyelin, glycosphingolipids, and of free sphingosine and fatty acids. The sphingosine can be phosphorylated to form sphingosine-1-phosphate. Two of ceramide's metabolites, sphingosine-1-phosphate and glucosylceramide, produce cell proliferation and other cellular functions.[2] Ceramide exerts numerous biological effects, including induction of cell maturation, cell cycle arrest, terminal cell differentiation, cell senescence, and cell death.[3] Because of these effects ceramide has been investigated for its use in cancer treatment and many potential approaches to cancer therapy have been presented.[4] Other effects include producing reactive oxygen in mitochondria (followed by apoptosis) and stimulating phosphorylation of certain proteins (especially mitogen activated protein). It also stimulates some protein phosphatases (especially protein phosphatase 2A) making it an important controller of protein activity.

Selected References:

1. C. Vieu et al. "Coupled assay of sphingomyelin and ceramide molecular species by gas liquid chromatography" *Journal of Lipid Research*, vol. 43 pp. 510-522, *2002*
2. J. M. Hauser, B. M. Buehrer, and R. M. Bell "Role of ceramide in mitogenesis induced by exogenous sphingoid bases." Journal of Biological Chemistry Vol. 269 pp. 6803, *1994*
3. N. S. Radin, "Killing tumours by ceramide-induced apoptosis: a critique of available drugs" *Biochemical Journal*, Vol. 371 pp. 243-256, *2003*
4. N. S. Radin, "Designing anticancer drugs via the achilles heel: ceramide, allylic ketones, and mitochondria" *Bioorganic and Medicinal Chemistry*, Vol. 11(10) pp. 2123-2142, *2003*

2178 High Tech Road, State College, PA 16803
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