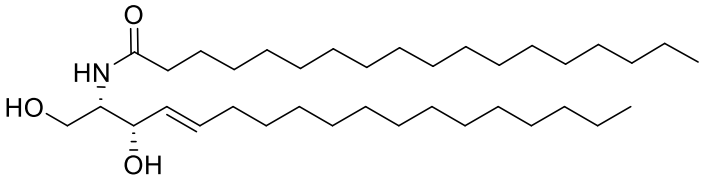
PRODUCT DATA SHEET

N-Octadecanoyl-L-*threo*-sphingosine

Catalog number: 1843
Synonyms: N-C18:0-L-*threo*-Ceramide; N-Stearoyl-L-*threo*-sphingosine
Source: synthetic
Solubility: chloroform, ethanol, DMSO, DMF (up to 5 mg/ml)
CAS number: 95037-06-2

Molecular Formula: $C_{36}H_{71}NO_3$
Molecular Weight: 566
Storage: -20ºC
Purity: TLC: >98%, GC: >98%; identity confirmed by MS
TLC System: chloroform/methanol (90:10)
Appearance: solid



Application Notes:

This product is a high purity, non-natural L-*threo* ceramide that is ideal as a standard and for biological studies. D-*erythro* ceramide is the natural ceramide isomer and is involved in many biological processes including induction of cell maturation, cell cycle arrest, terminal cell differentiation, cell senescence, and cell death.[1] Both the natural D-*erythro* and the non-natural L-*erythro* and the D- and L-*threo* ceramides display similar effectiveness in inducing apoptotic damage in cells.[2] The protein phosphatases PP1 and PP2A, which are involved in regulating apoptosis and cell growth, are activated by D-*erythro* ceramide but inhibited by L-*threo*, D-*threo*, and L-*erythro* ceramide.[3] Both D-*erythro* and D-*threo* C2 ceramides have been found to be potent inducers of IL-6 production, while neither the L-*threo* or L-*erythro* stereoisomers of ceramide were effective.[4] D- and L-*erythro* ceramide and D- and L-*threo* ceramide are also comparably effective inhibitors of protein kinase C.[5]

Selected References:

1. N. S. Radin, "Killing tumours by ceramide-induced apoptosis: a critique of available drugs" *Biochemical Journal*, Vol. 371 pp. 243-256, *2003*
2. W. Jarvis et al. "Induction of Apoptosis and Potentiation of Ceramide-mediated Cytotoxicity by Sphingoid Bases in Human Myeloid Leukemia Cells" *The Journal of Biological Chemistry*, Vol. 271 pp. 8275-8284, *1996*
3. C. Chalfant et al. "Long Chain Ceramides Activate Protein Phosphatase-1 and Protein Phosphatase-2A Activation is Stereospecific and Regulated by Phosphatidic Acid" *The Journal of Biological Chemistry*, Vol. 274 pp. 20313-20317, *1999*
4. S. Lauledеrkind et al. "Ceramide Induces Interleukin 6 Gene Expression in Human Fibroblasts" *The Journal of Experimental Medicine*, Vol. 182 pp. 599-604, *1995*
5. T. Ariga et al. "Role of sphingolipid-mediated cell death in neurodegenerative diseases" *Journal of Lipid Research*, Vol. 39 pp. 1-16, *1998*

2178 High Tech Road, State College, PA 16803
www.matreya.com · Phone (814) 355-1030 · Fax (814) 355-1031