PRODUCT DATA SHEET

N-Acetyl-phytosphingosine

Catalog number: 1897
Common names: N-C2:0-Phytoceramide
Source: semisynthetic, yeast (Pichia ciferri)
Solubility: ethanol, methanol, chloroform/methanol, 1:1 (warm), warm DMSO
CAS number: N/A

Molecular Formula: C_{20}H_{41}NO_{4}
Molecular Weight: 360
Storage: -20°C
Purity: TLC >98%, HPLC >98%; identity confirmed by MS
TLC System: chloroform/methanol (90:10)
Appearance: solid

Application Notes:
This product is a phytoceramide containing an acetyl group on the amide linkage which enables it to easily enter into cells. N-acetyl-phytosphingosine elevates Cyclooxygenase-2 expression via tyrosine kinase and protein kinase C, with subsequent extracellular signal–regulated kinase activation. This may be in response to N-acetyl-phytosphingosine induced apoptosis in cells. Phytosphingosine is a long-chain sphingoid base having important cellular functions such as signaling, cytoskeletal structure, cellular cycle, and heat stress response. It is found largely in mammals, plants, and yeast. Phytosphingosine has been used in cosmetics due to its effects on the skin such as reducing inflammation by inhibiting the expression of the allergic cytokines IL-4 and TNF-α and the activation of the transcription factors NF-κB and c-jun in histamine-stimulated skin tissues. Phytosphingosine can lead to apoptosis via two distinct pathways and has been investigated as a possible cancer therapeutic treatment. Phytoceramides (fatty acid acylated to Phytosphingosine) are distributed at the microvillus membrane of the epithelial cells of the small intestine. Crypt cells and the adjacent epithelial cells produce phytosphingoglycolipids in much greater quantities than more differentiated epithelial cells. The kidney and skin also contain phytosphingoglycolipids although in much lower concentrations than in the small intestine. Phytoceramides form part of the water barrier lipids of the skin. Phytoceramides have lately been studied in regards to their role in the central nervous system and have been found to have important functions in neuroprotection.

Selected References:

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.

DS1897 Rev. #4
December 15, 2015