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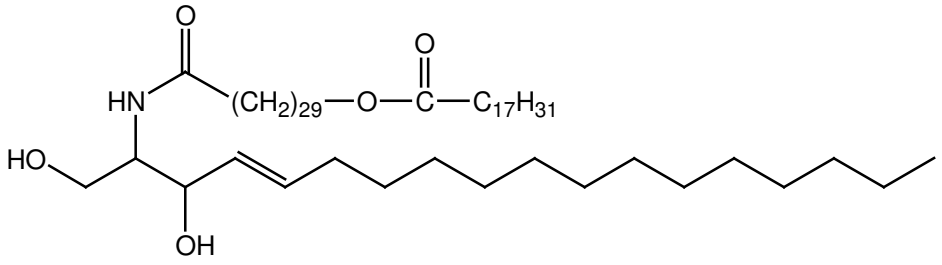
PRODUCT DATA SHEET

N-(30-Linoleoyloxy-triacontanoyl)-sphingosine

Catalog number: 2084
Synonyms: Ceramide (EOS); EOS Ceramide 1; O-Acylceramide
Source: synthetic
Solubility: chloroform; methanol; DMF
CAS number: N/A

Molecular Formula: $C_{66}H_{125}NO_5$
Molecular Weight: 1013
Storage: -20°C
Purity: TLC: >98%; identity confirmed by MS
TLC System: chloroform/methanol, 97:3
Appearance: solid



Application Notes:

This product is a high purity *omega*-esterified ceramide that is ideal as a standard and for studies involving skin-barrier lipids. It is found almost exclusively in the epidermal layer, especially in the stratum corneum. The stratum corneum is the outermost cellular layer of the epidermis and functions as the permeability barrier in mammals. It contains 12 extractable ceramide fractions containing sphingosine, 6-hydroxysphingosine, dihydrosphingosine and phytosphingosine bases. The *omega*-esterified ceramides are formed from glucosylceramide and sphingomyelin in special lamellar bodies in epidermal cells from which they are excreted into the extracellular domain of the outermost cell layer of the epidermis. Mammalian skin contains significant amounts of sphingolipids (as much as 50% of the total lipids), particularly very long chain linoleoyl esterified ceramide and glucosylceramide (also called O-acylceramide and O-acylglucosylceramide). These lipids, which are mostly found in the extracellular domains, are vital to the water permeability barrier to prevent lethal loss of water and pathogen invasion. The *omega*-esterified ceramides can be covalently bound to proteins of the cornified envelope where they form a hydrophobic layer. A deficiency of linoleoyl *omega*-esterified ceramides is strongly correlated with skin diseases such as psoriasis and atopic dermatitis.

Selected References:

1. B. Breiden and K. Sandhoff, The Role of Sphingolipid Metabolism in Coetaneous Permeability Barrier Formation. Biochimica et Biophysica Acta 1841 (2014) 441-452
2. R. Sandhoff, Very long chain sphingolipids: Tissue expression, function and synthesis. FEBS Letters 584 (2010) 1907-1913
3. Y. Masukawa et al., Characterization of overall ceramide species in human stratum corneum. Journal of Lipid Research 2008 vol. 49(7):1466-1476

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.