

PRODUCT DATA SHEET

N-Hexanoyl-glucosylceramide

Catalog number: 1539

Synonyms: N-C6:0-Glucocerebroside; N-Hexanoyl-*beta*-D-glucosylsphingosine

Source: semisynthetic

Solubility: chloroform, methanol, DMF

CAS number: N/A

Molecular Formula: C₃₀H₅₅NO₈

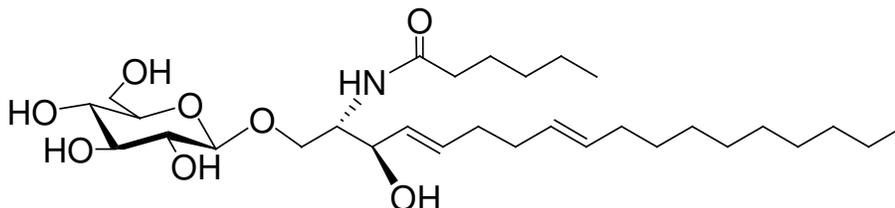
Molecular Weight: 558

Storage: -20°C

Purity: TLC >98%; identity confirmed by MS

TLC System: chloroform/methanol/DI water
(65:25:4)

Appearance: solid



Application Notes:

This product is a well-defined glucosylceramide containing hexanoic acid making it ideal as an internal standard and for biological systems. Due to the short acyl-chain of the ceramide this product is more water soluble than natural cerebroside and can therefore more easily cross cell membranes. Glucosylceramide is a major constituent of skin lipids where it has an important role in lamellar body formation and in maintaining the water permeability barrier. Glucocerebroside is very important due to its function as the biosynthetic precursor of lactosylceramide and from there of most of the neutral oligoglycolipids and gangliosides.¹ Glucocerebroside is found in plants, fungi, and animals and is one of the most abundant glycosphingolipids in plants. Due to the relatively high melting point of cerebroside (much greater than physiological body temperature) they have a para-crystalline structure. Glucocerebroside tends to be concentrated in the outer leaflet of the plasma membrane in lipid rafts. It has been reported that glucocerebroside is essential for the activity of tyrosinase (a key enzyme in melanin biosynthesis), to elicit defense responses in plants, and to help the plasma membrane in plants to withstand stresses brought about by cold and drought. In Gaucher disease glucocerebroside accumulates in the spleen, liver, lungs, bone marrow, and brain due to a deficiency of the enzyme glucocerebrosidase.^{2,3} This accumulation of glucocerebroside has been associated with chemotherapy resistance. Glucocerebroside has been shown to be able to modulate membrane traffic along the endocytic pathway.⁴

Selected References:

1. D. Sillence et al. "Assay for the transbilayer distribution of glycolipids: selective oxidation of glucosylceramide to glucuronyceramide by TEMPO nitroxyl radicals" *Journal of Lipid Research*, Vol. 41(8) pp. 1252-1260, 2000
2. C. Walden et al. "Accumulation of Glucosylceramide in Murine Testis, Caused by Inhibition of *beta*-Glucosidase 2: IMPLICATIONS FOR SPERMATOGENESIS" *The Journal of Biological Chemistry*, Vol. 282 pp. 32655-32664, 2007
3. R. Brady "Gaucher's disease: past, present and future" *Baillieres Clin Haematol*, Vol. 10:4 pp. 621-634, 1997
4. D. Sillence et al. "Glucosylceramide modulates membrane traffic along the endocytic pathway" *Journal of Lipid Research*, Vol. 43(11) pp. 1837-1845, 2002

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.