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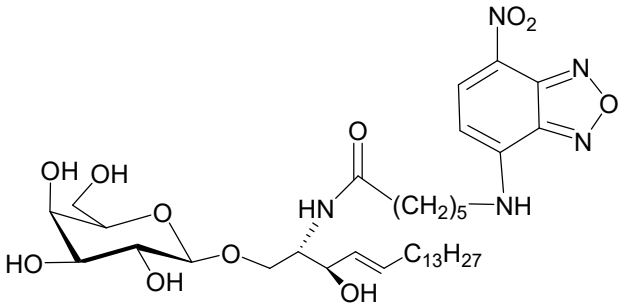
PRODUCT DATA SHEET

N-Hexanoyl-NBD-galactosylceramide

Catalog number: 1621
Common names: N-C6:0-NBD-*beta*-D-Galactosylsphingosine; N-C6:0-NBD-Cerebroside; N-C6:0-NBD-Galactosylceramide, fluorescent; N-(NBD-D-Aminocaproyl)-galactosylsphingosine
Source: semisynthetic, bovine

Solubility: chloroform/methanol, 5:1; methanol
CAS number: 170212-26-7
Molecular Formula: $C_{36}H_{59}N_5O_{11}$
Molecular Weight: 738
Storage: -20ºC
Purity: TLC >98%; identity confirmed by MS
TLC System: chloroform/methanol/DI water (65:25:3)
Appearance: solid



Application Notes:

This cerebroside product is a fluorescent labeled glycosphingolipid containing a galactose (galactocerebroside) attached to a ceramide acylated with a fluorescent NBD fatty acid. Galactocerebrosides are found primarily in neuronal tissues and are the major glycosphingolipids in the central nervous system. They are the largest single component of the myelin sheath of nerves and seem to act, along with other molecules, to form part of the structural support of the myelin sheath.[1] Cerebrosides are involved in a very wide range of biological activities such as cell agglutination, intracellular communication, cellular development, and antitumor/cytotoxic effects.[2] Galactocerebroside can be metabolized into sulfatide which is also abundant in the nervous system and myelin sheath. Due to the relatively high melting point of cerebrosides (much greater than physiological body temperature) they have a para-crystalline structure. Krabbe's disease (globoid cell leukodystrophy) is characterized by a deficiency in the enzyme galactocerebrosidase, which is responsible for degrading galactocerebroside. This leads to an accumulation of cerebroside and psychosine (which is very cytotoxic and can result in demyelination of nerves and loss of axonal conductivity). This fluorescent standard from Matreya is excellent for use in the identification and isolation of cerebrosides in the study of Krabbe's disease and other studies.[3]

Selected References:

1. M. Sheldon, D.Lyudmila, "Cycloserine-induced decrease of cerebroside in myelin" *Lipids,* Vol. 33:4 pp. 441-443, *1998*
2. X. Zhou, L. Tang and Y. Liu "An Isomeric Mixture of Novel Cerebrosides Isolated from *Impatiens pritzellii* Reduces Lipopolysaccharide-Induced Release of IL-18 from Human Peripheral Blood Mononuclear Cells" *Lipids,* Vol. 44:8 pp. 759-763, *2009*
3. K. Zama et al. "Simultaneous quantification of glucosylceramide and galactosylceramide by normal-phase HPLC using *O*-phtalaldehyde derivatives prepared with sphingolipid ceramide *N*-deacylase" *Glycobiology*, vol. 19 pp. 767-775, *2009*