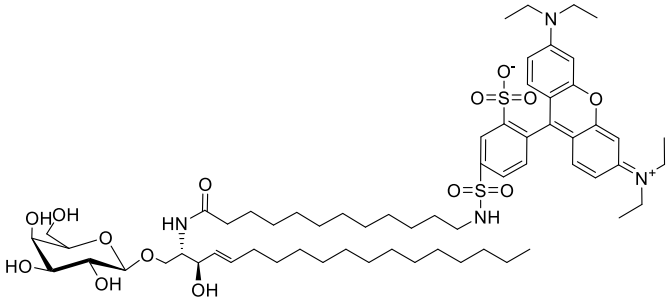
PRODUCT DATA SHEET

Lissamine-rhodamine B-dodecanoyl-galactosylceramide

Catalog number: 2204
Common names: Sulforhodamine B-C12:0 cerebroside
Source: semisynthetic, bovine
Solubility: chloroform/methanol 8:2; DMSO; DMF
CAS number: N/A

Molecular Formula: $C_{63}H_{98}N_4O_{14}S_2$
Molecular Weight: 1200
Storage: -20°C
Purity: TLC >98%; identity confirmed by MS
TLC System: chloroform/methanol/DI water (80:20:1 by vol.)
Appearance: solid



Application Notes:

Lissamine-rhodamine B-dodecanoyl-galactosylceramide is a fluorescent labeled glycosphingolipid containing a galactose attached to a ceramide and labeled with a fluorescent lissamine-rhodamine B marker. This fluorescent standard from Matreya is excellent for use in the identification and isolation of cerebrosides in the Krabbe's disease and other studies.[3] Lissamine-rhodamine B dyes have an excitation/emission maxima ~560/580 nm. The fluorescent marker is attached via a 12-carbon linker reducing the interaction of the fluorophore with the sphingolipid.

Galactosylcerebrosides are found primarily in neuronal tissues and are a major component of 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 can result in demyelination of nerves and loss of axonal conductivity.

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*

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