

PRODUCT DATA SHEET

Cerebroside; Phrenosin (bottom spot)

Catalog number: 1138

Common Name: Galactosylceramide with
mostly 2-hydroxy fatty acid
side chains

Source: natural, bovine

Solubility: chloroform/methanol/DI water,
(2:1:0.5 by vol.)

CAS number: 37211-11-3

Molecular Formula: C₄₂H₈₁NO₉

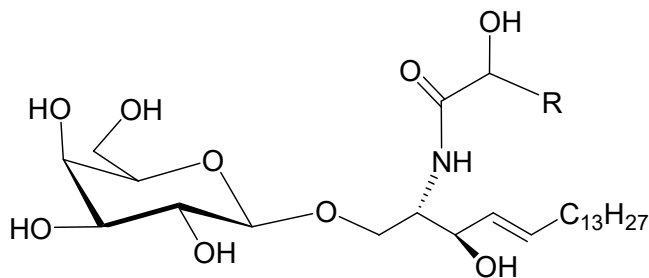
Molecular Weight: 744 (2-hydroxystearoyl)

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:

This cerebroside product is a glycosphingolipid containing a galactose (galactocerebroside) attached to a ceramide acylated with 2-hydroxy fatty acids. 2-hydroxygalactolipids account for as much as 60% of the myelin sheath, higher than in any other tissues, and is formed by fatty acid 2-hydroxylase.¹ 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.² Cerebrosides are involved in a very wide range of biological activities such as cell agglutination, intracellular communication, cellular development, and antitumor/cytotoxic effects.³ 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 standard from Matreya is excellent for use in the identification and isolation of cerebrosides in the study of Krabbe's disease and other studies.⁴

Selected References:

1. H. Hama et al. "FA2H is responsible for the formation of 2-hydroxy galactolipids in peripheral nervous system myelin" *Journal of Lipid Research*, vol. 49 pp. 153-161, 2008
2. M. Sheldon, D. Lyudmila, "Cycloserine-induced decrease of cerebroside in myelin" *Lipids*, Vol. 33:4 pp. 441-443, 1998
3. 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
4. X. Han and H. Cheng "Characterization and direct quantitation of cerebroside molecular species from lipid extracts by shotgun lipidomics" *Journal of Lipid Research*, Vol. 46 pp. 163-175, 2005

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.