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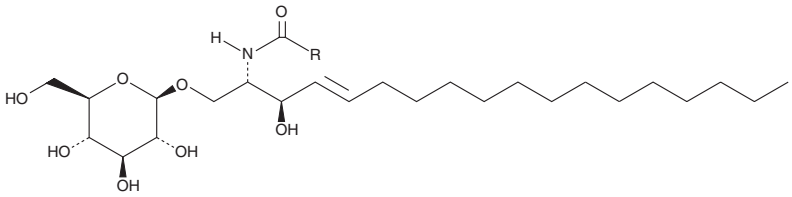
PRODUCT INFORMATION

Glucosylceramide (Gaucher's spleen)

Item No. 23207

CAS Registry No.: 85305-87-9
Formal Name: 1-O-β-D-glucopyranosyl-ceramide
Synonyms: Gaucher cerebroside, GL1a, GlcCer (Gaucher's spleen), GluCers (Gaucher's spleen), Glucocerebrosides, Glucosylceramides (gaucher's spleen)
MF: $C_{48}H_{93}NO_8$ (for lignoceryl)
FW: 812.3
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Glucosylceramide (Gaucher's spleen) is supplied as a solid. A stock solution may be made by dissolving the glucosylceramide (Gaucher's spleen) in the solvent of choice, which should be purged with an inert gas. Glucosylceramide (Gaucher's spleen) is soluble in a 2:1 solution of chloroform:methanol.

Description

Glucosylceramides are formed by the tethering of glucose to a ceramide by glucosylceramide synthase.[1] They are present in neuronal and non-neuronal mammalian tissues and are found at low quantities in a large number of plant species, where they comprise 5-30% of total lipids in the plant plasma membrane, and in fungi.[1-3] Glucosylceramide levels decrease during cold acclimatization in plants and glucosylceramides in fungi are involved in the regulation of virulence and act as elicitors in plants, stimulating plant defense mechanisms.[3,4] Glucosylceramides are precursors in the synthesis of lactosylceramides and gangliosides. Increased levels of glucosylceramides are associated with obesity-induced insulin resistance in mice and with neuronal deficits observed in neuronopathic Gaucher disease.[1,5] This product contains glucosylceramide molecular species with primarily C16:0, C22:0, and C24:0 fatty acyl chain lengths. *As this product is derived from a natural source, there may be variations in the sphingoid backbone.*

References

1. Holland, W.L. and Summers, S.A. Sphingolipids, insulin resistance, and metabolic disease: New insights from *in vivo* manipulation of sphingolipid metabolism. *Endocr. Rev.* **29(4)**, 381-402 (2008).
2. Cahoon, E.B. and Lynch, D.V. Analysis of Glucocerebrosides of Rye (*Secale cereale L.* cv Puma) Leaf and Plasma Membrane. *Plant Physiol.* **95(1)**, 56-68 (1991).
3. Lynch, D.V. and Dunn, T.M. An introduction to plant sphingolipids and a review of recent advances in understanding their metabolism and function. *New Phytol.* **161(3)**, 667-702 (2004).
4. Rollin-Pinheiro, R., Bernardino, M.C., and Barreto-Bergter, E. Sphingolipids: Functional and biological aspects in mammals, plants, and fungi. *Analysis of membrane lipids*. Prasad, R. and Singh, A., editors *Springer* (2020).
5. Dai, M., Liou, B., Swope, B., *et al.* Progression of behavioral and CNS deficits in a viable murine model of chronic neuronopathic Gaucher disease. *PLoS One* **11(9)**, e0162367 (2016).

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