

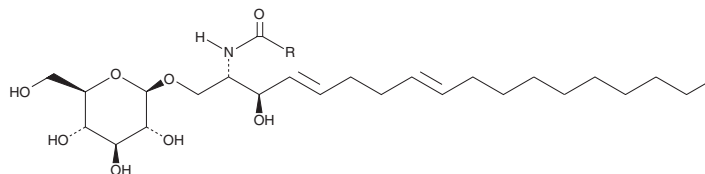
PRODUCT INFORMATION



Glucosylceramide (plant)

Item No. 25850

CAS Registry No.: 497155-61-0
Synonym: GluCers (soy)
MF: C₄₀H₇₅NO₉ (for 2-hydroxy hexadecanoyl)
FW: 714.0
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 (plant) is supplied as a solid. A stock solution may be made by dissolving the glucosylceramide (plant) in the solvent of choice, which should be purged with an inert gas. Glucosylceramide (plant) 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 Glucosylceramides 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 2-hydroxy C16:0 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, 1st edition, 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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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