



# SZABO SCANDIC

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## Produktinformation



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Laborgeräte & Service

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- Trockeneiszuschlag
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- Expressversand

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# PRODUCT INFORMATION



## Globotetraosylceramides (porcine RBC)

Item No. 24881

**CAS Registry No.:** 11034-93-8  
**Formal Name:** 1-O-[O-2-(acetylamino)-2-deoxy-β-D-galactopyranosyl-(1→3)-O-α-D-galactopyranosyl-(1→4)-O-β-D-galactopyranosyl-(1→4)-β-D-glucopyranosyl]-ceramide

**Synonyms:** Gb<sub>4</sub>Cer (porcine RBC), Globosides (porcine RBC), Globotetrahexosylceramides (porcine RBC)

**MF:** C<sub>68</sub>H<sub>126</sub>N<sub>2</sub>O<sub>23</sub> (for tetracosanoyl)

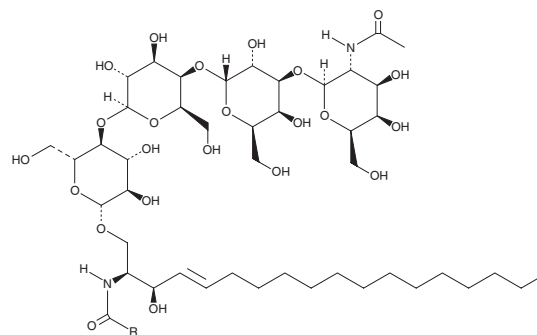
**FW:** 1,339.7

**Purity:** ≥98%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥2 years



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

### Laboratory Procedures

Globotetraosylceramides (porcine RBC) is supplied as a solid. A stock solution may be made by dissolving the globotetraosylceramides (porcine RBC) in the solvent of choice. Globotetraosylceramides (porcine RBC) is soluble in DMSO, hot methanol, and a 2:1 solution of chloroform:methanol.

### Description

Globotetraosylceramides are bioactive neutral glycosphingolipids. They are the major glycolipids in human erythrocytes.<sup>1</sup> They act as receptors for the Shiga toxins Stx1, Stx2, and Stx2e, the cytotoxic protein pierisin-1, and parvovirus B19.<sup>2-4</sup> Globotetraosylceramides increase the expression of proteins responsible for enamel deposition, including ameloblastin, amelogenin, and enamelin, in dental epithelial cells and activate the ERK and p38 MAPK signaling pathways.<sup>5</sup> Levels of globotetraosylceramides are elevated in fibroblasts from patients with salt and pepper syndrome, a neurocutaneous condition characterized by intellectual disability and hyper- and hypo-pigmented skin.<sup>6</sup> Globotetraosylceramides (porcine RBC) contains a mixture of globotetraosylceramides with variable fatty acyl chain lengths isolated from porcine red blood cells.

### References

1. Yamakawa, T., Yokoyama, S., and Kiso, N. Structure of main globoside of human erythrocytes. *J. Biochem.* **52(3)**, 228-229 (1962).
2. Müthing, J., Scheweppe, C.H., Karch, H., *et al.* Shiga toxins, glycosphingolipid diversity, and endothelial cell injury. *Thromb. Haemost.* **101(2)**, 252-264 (2009).
3. Matsushima-Hibiya, Y., Watanabe, M., Hidari, J.I.-P.J., *et al.* Identification of glycosphingolipid receptors for pierisin-1, a guanine-specific ADP-ribosylating toxin from the cabbage butterfly. *J. Biol. Chem.* **278(11)**, 9972-9978 (2003).
4. Nasir, W., Nilsson, J., Ologsson, S., *et al.* Parvovirus B19 VLP recognizes globoside in supported lipid bilayers. *Virology* **456-457**, 364-369 (2014).
5. Nakamura, T., Chiba, Y., Naruse, M., *et al.* Globoside accelerates the differentiation of dental epithelial cells into ameloblasts. *Int. J. Oral Sci.* **8(4)**, 205-212 (2016).
6. Boccutto, L., Aoki, K., Flanagan-Steet, H., *et al.* A mutation in a ganglioside biosynthetic enzyme, ST3GAL5, results in salt & pepper syndrome, a neurocutaneous disorder with altered glycolipid and glycoprotein

#### 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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