

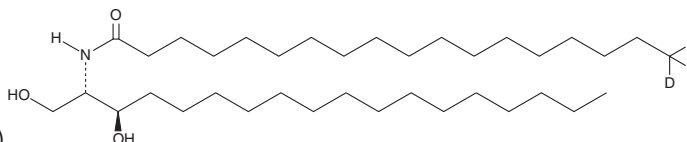
# PRODUCT INFORMATION



## C18 dihydro Ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>)

Item No. 24428

**CAS Registry No.:** 2699606-99-8  
**Formal Name:** N-[(1S,2R)-2-hydroxy-1-(hydroxymethyl)heptadecyl]-octadecanamide-18,18,18-d<sub>3</sub>  
**Synonyms:** N-octadecanoyl-D-erythro-Dihydrosphingosine-d<sub>3</sub>, Cer(d18:0/18:0)-d<sub>3</sub>, Ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>)  
**MF:** C<sub>36</sub>H<sub>70</sub>D<sub>3</sub>NO<sub>3</sub>  
**FW:** 571.0  
**Chemical Purity:** ≥98% (C18 dihydro Ceramide (d18:0/18:0))  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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

C18 dihydro Ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>) is intended for use as an internal standard for the quantification of C18 dihydro ceramide (d18:0/18:0) (Item No. 24379) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

C18 dihydro Ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>) is supplied as a solid. A stock solution may be made by dissolving the C18 dihydro ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>) in the solvent of choice. C18 dihydro Ceramide-d<sub>3</sub> (d18:0/18:0-d<sub>3</sub>) is soluble in organic solvents such as hot ethanol, DMSO, dimethyl formamide, and in a 2:1 solution of chloroform:methanol, which should be purged with an inert gas.

### Description

C18 dihydro Ceramide is a bioactive sphingolipid and precursor in the *de novo* synthesis of C18 ceramide (d18:1/18:0) (Item No. 19556) that lacks the 4,5-*trans* double bond.<sup>1</sup> Increased C18 dihydro ceramide lipid levels lead to increased triacylglycerol storage and autophagosome accumulation as well as upregulation of the fibrosis markers α-SMA and FGF2 in Chang and LX-2 liver cells. C18 dihydro Ceramide is elevated in the plasma of pre-diabetics up to 9 years prior to the onset of type 2 diabetes.<sup>2</sup> It is also elevated in the skin of patients with lesional atopic dermatitis.<sup>3</sup>

### References

1. Lee, A.Y., Lee, J.W., Kim, J.-E., *et al.* Dihydroceramide is a key metabolite that regulates autophagy and promotes fibrosis in hepatic steatosis model. *Biochem. Biophys. Res. Commun.* **494**(3-4), 460-469 (2017).
2. Wigger, L., Cruciani-Guglielmacci, C., Nicolas, A., *et al.* Plasma dihydroceramides are diabetes susceptibility biomarker candidates in mice and humans. *Cell Rep.* **18**(9), 2269-2279 (2017).
3. Joo, J.-M., Hwang, J.-H., Bae, S., *et al.* Relationship of ceramide-, and free fatty acid-cholesterol ratios in the stratum corneum with skin barrier function of normal, atopic dermatitis lesional and non-lesional skins. *J. Dermatol. Sci.* **77**(1), 71-74 (2015).

#### 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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