

# PRODUCT INFORMATION



## C18 Phytoceramide (t18:0/18:0)

Item No. 22686

CAS Registry No.: 34354-88-6

Formal Name: N-[(1S,2S,3R)-2,3-dihydroxy-1-(hydroxymethyl)heptadecyl]-octadecanamide

Synonyms: Ceramide (t18:0/18:0), Cer(t18:0/18:0), C18 Phytoceramide, N-Octadecanoyl Phytosphingosine, SPS, N-Stearoyl Phytosphingosine

MF:  $C_{36}H_{73}NO_4$

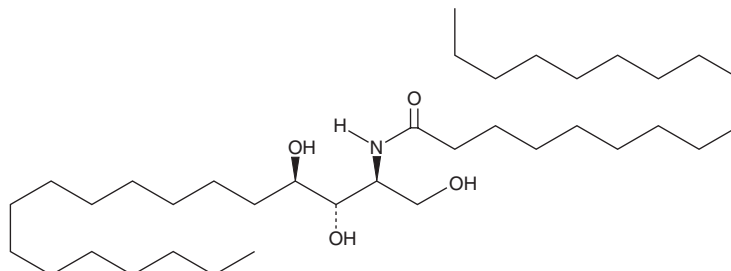
FW: 584.0

Purity:  $\geq 95\%$

Supplied as: A solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 4$  years



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

### Laboratory Procedures

C18 Phytoceramide (t18:0/18:0) (Cer(t18:0/18:0)) is supplied as a solid. A stock solution may be made by dissolving the SPS in the solvent of choice. SPS is soluble in a 1:1 (warm) solution of chloroform:methanol.

### Description

Cer(t18:0/18:0) is a bioactive sphingolipid found in *S. cerevisiae*, wheat grains, and the stratum corneum layer of mammalian epidermis.<sup>1-4</sup> Cer(t18:0/18:0) is composed of a phytosphingosine (Item No. 20217) backbone amine-linked to a C18 fatty acid chain. Cer(t18:0/18:0) has a role in regulation of apoptosis, cell differentiation, proliferation of smooth muscle cells, and inhibition of the mitochondrial respiratory chain.<sup>5-7</sup> It also inhibits expression of the allergic cytokines IL-4, TNF- $\alpha$ , and transcription factors c-Jun and NF- $\kappa$ B in histone-stimulated murine skin tissue.<sup>1</sup> Formulations containing cer(t18:0/18:0) have been used in cosmetics as a skin protectants as they reduce water loss to prevent epidermal dehydration and irritation.<sup>2,3</sup>

### References

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3. Corcoran, C. and Hendry, J. Ceramide cosmetic compositions. E. A. Company. United States, Elizabeth Arden Company (1994).
4. Bizot-Foulon, V., Godeau, G., Guessous, F. et al. Inhibition of human neutrophil elastase by wheat ceramides. *Int. J. Cosmet. Sci.* **17**(6), 255-264 (1995).
5. Testi, R. Sphingomyelin breakdown and cell fate. *Trends Biochem. Sci.* **21**(12), 468-471 (1996).
6. Augé, N., Andrieu, N., Nègre-Salvayre, A., et al. The sphingomyelin-ceramide signaling pathway is involved in oxidized low density lipoprotein-induced cell proliferation. *J. Biol. Chem.* **271**(32), 19251-19255 (1996).
7. Gudz, T. I., Tserng, K. Y., and Hoppel, C.L. Direct inhibition of mitochondrial respiratory chain complex III by cell-permeable ceramide. *J. Biol. Chem.* **272**(39), 24154-24158 (1997).

#### 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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