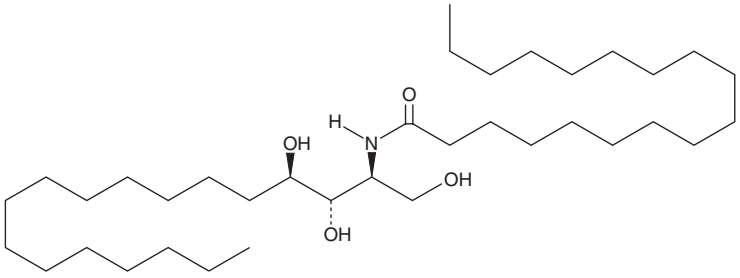
PRODUCT INFORMATION

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:	≥95%
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 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.[1-4] 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.[5-7] It also inhibits expression of the allergic cytokines IL-4, TNF-α, and transcription factors c-Jun and NF-κB in histone-stimulated murine skin tissue.[1] Formulations containing cer(t18:0/18:0) have been used used in cosmetics as a skin protectants as they reduce water loss to prevent epidermal dehydration and irritation.[2,3]

References

1. Ryu, K.-R., Lee, B., Lee, I.-A., *et al.* Anti-scratching behavioral effects of N-stearoyl-phytosphingosine and 4-hydroxysphinganine in mice. *Lipids* **45(7)**, 613-618 (2010).
2. Huang, H.-C. and Chang, T.-M. Ceramide 1 and ceramide 3 act synergistically on skin hydration and the transepidermal water loss of sodium lauryl sulfate-irritated skin. *Int. J. Dermatol.* **47(8)**, 812-819 (2008).
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).

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