

# PRODUCT INFORMATION



## EOS-d<sub>9</sub> (d18:1-d<sub>9</sub>/32:0/18:2)

Item No. 24423

CAS Registry No.: 2692624-26-1

Formal Name: (9Z,12Z)-9,12-octadecadienoic acid, 32-[[[(1S,2R,3E)-2-hydroxy-1-(hydroxymethyl)-3-heptadecen-1-yl-14,14,15,15,16,16,17,17,17-d<sub>9</sub>]amino]-32-oxodotriacontyl ester

Synonym: N-(32-linoleoyloxy-dotriacontanoyl)-Sphingosine-d<sub>9</sub>

MF: C<sub>68</sub>H<sub>120</sub>D<sub>9</sub>NO<sub>5</sub>

FW: 1,049.8

Chemical Purity: ≥98% (EOS (18:1/32:1/18:2))

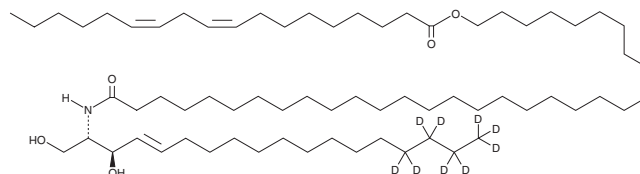
Deuterium

Incorporation: ≥99% deuterated forms (d<sub>1</sub>-d<sub>9</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

EOS-d<sub>9</sub> (d18:1-d<sub>9</sub>/32:0/18:2) is intended for use as an internal standard for the quantification of EOS (Item No. 22442) 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).

EOS-d<sub>9</sub> (d18:1-d<sub>9</sub>/32:0/18:2) is supplied as a solid. A stock solution may be made by dissolving the EOS-d<sub>9</sub> (d18:1-d<sub>9</sub>/32:0/18:2) in the solvent of choice, which should be purged with an inert gas. EOS-d<sub>9</sub> (d18:1-d<sub>9</sub>/32:0/18:2) is soluble in organic solvents such as methanol, chloroform, and dimethyl formamide.

### Description

EOS is a ceramide found in the outer layer of the epidermis in mammals.<sup>1</sup> It is comprised of an ω-hydroxy very long-chain fatty acid (C28-36) esterified to the essential fatty acid linoleic acid (Item No. 90150) and glucosylated to sphingosine. The consecutive regio- and stereospecific oxygenation of the linoleate portion of EOS by 12(R)-lipoxygenase (12(R)-LO) and eLOX3 is essential for the maintenance of the epidermal barrier to prevent water loss. Following oxygenation, the oxidized linoleate is hydrolyzed, leaving the ω-hydroxy end of the very long-chain fatty acid to covalently bind the protein layer, forming the corneocyte lipid envelope and sealing the gap between the extracellular lipid lamellae and the cornified cell envelope of the corneocyte.

### Reference

1. Zheng, Y., Yun, H., Boeglin, W.E., *et al.* Lipoxygenases mediate the effect of essential fatty acid in skin barrier formation: A proposed role in releasing omega-hydroxyceramide for construction of the corneocyte lipid envelope. *J. Biol. Chem.* **286**(27), 24046-24056 (2011).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM