

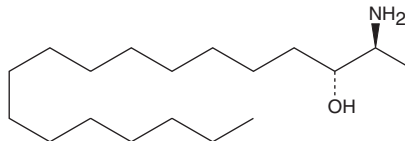
# PRODUCT INFORMATION



## 1-Deoxysphinganine (m18:0)

Item No. 13511

**CAS Registry No.:** 196497-48-0  
**Formal Name:** 2S-amino-3R-octadecanol  
**Synonyms:** 1-deoxySA, ES-285, Spisulosine  
**MF:** C<sub>18</sub>H<sub>39</sub>NO  
**FW:** 285.5  
**Purity:** ≥95%  
**Supplied as:** A crystalline 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

1-Deoxysphinganine (m18:0) is supplied as a crystalline solid. A stock solution may be made by dissolving the 1-deoxysphinganine (m18:0) in the solvent of choice, which should be purged with an inert gas. 1-Deoxysphinganine (m18:0) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of 1-deoxysphinganine (m18:0) in these solvents is approximately 2 and 10 mg/ml, respectively. 1-Deoxysphinganine (m18:0) is also miscible in ethanol.

### Description

1-Deoxysphinganine is an atypical sphingolipid that lacks the C1-hydroxyl group of canonical sphinganine and is formed when serine palmitoyltransferase condenses palmitoyl-CoA with alanine instead of serine during sphingolipid synthesis.<sup>1</sup> Plasma levels of 1-deoxysphinganine are increased in patients with hereditary sensory and autonomic neuropathy type 1 (HSAN1), an inherited neuropathy associated with serine palmitoyltransferase gene mutations, and in patients with glycogen storage disease type I (GSDI).<sup>2,3</sup> Deoxysphingolipids, including 1-deoxysphinganine, are not converted to canonical sphingolipids or fatty acids and accumulate in cells, particularly in the mitochondria where 1-deoxysphinganine induces mitochondrial fragmentation and dysfunction.<sup>4</sup> It also accumulates in LLC-PK1 cells and in mouse liver and kidney following application or administration, respectively, of the ceramide synthase inhibitor fumonisins B<sub>1</sub> (Item No. 62580).<sup>1</sup> 1-Deoxysphinganine is neurotoxic to dorsal root ganglion neurons *in vitro*, decreasing neurite length and inducing neurite contraction when used at a concentration 1 μM.<sup>2</sup> It is cytotoxic to DU145 cells (IC<sub>50</sub> = ~2 μM) but stimulates DNA synthesis in Swiss 3T3 cells when used at a concentration of 1 μM.<sup>1,5</sup>

### References

1. Zitomer, N.C., Mitchell, T., Voss, K.A., *et al.* *J. Biol. Chem.* **284**(8), 4786-4795 (2009).
2. Penno, A., Reilly, M.M., Houlden, H., *et al.* *J. Biol. Chem.* **285**(15), 11178-11187 (2010)
3. Hornemann, T., Alecu, I., Hagenbuch, N., *et al.* *Mol. Genet. Metab.* **S1096-S7192**(18), 30328-30327 (2018).
4. Alecu, I., Tedeschi, A., Behler, N., *et al.* *J. Lipid. Res.* **58**(1), 42-59 (2017).
5. Schroeder, J.J., Crane, H.M., Xia, J., *et al.* *J. Biol. Chem.* **269**(5), 3475-3481 (1994).

#### 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