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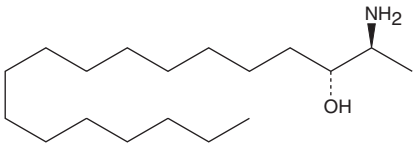
PRODUCT INFORMATION

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: $C_{18}H_{39}NO$
FW: 285.5
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 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. 1-Deoxysphinganine (m18:0) is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. 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.[1] 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).[2,3] 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.[4] It also accumulates in LLC-PK1 cells and in mouse liver and kidney following application or administration, respectively, of the ceramide synthase inhibitor fumonisin B_1 (Item No. 62580).[1] 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.[2] It is cytotoxic to DU145 cells (IC_{50} = ~2 µM) but stimulates DNA synthesis in Swiss 3T3 cells when used at a concentration of 1 µM.[1,5]

References

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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).

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