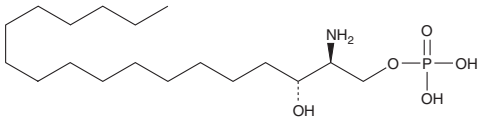
PRODUCT INFORMATION

Sphinganine-1-phosphate (d18:0)

Item No. 22500

CAS Registry No.: 19794-97-9
Formal Name: 2(S)-amino-1,3(R)-octadecanediol, 1-(dihydrogen phosphate)
Synonyms: C18-dihydro Sphingosine-1-phosphate, D-*erythro*-Sphinganine-1-phosphate, dihydro-D-*erythro*-Sphingosine-1-phosphate
MF: $C_{18}H_{40}NO_5P$
FW: 381.5
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

Sphinganine-1-phosphate (d18:0) is supplied as a crystalline solid. Sphinganine-1-phosphate (d18:0) is soluble in ethanol, DMSO, and dimethyl ester. The solubility in these solvents is approximately 50 µg/ml.

Sphinganine-1-phosphate (d18:0) is also soluble in 0.3 M NaOH at approximately 4 mg/ml, but will precipitate at pH less than 7.5. The reconstituted material will be stable for 24 hours if stored at 4C.

Description

Sphinganine-1-phosphate is an intermediate in the metabolism of glycosphingolipids and sphingolipids. It acts as an antagonist at the sphingosine-1-phosphate ($S1P_1$/EDG-1) receptor (K_i = 15 nM).[1] Sphinganine-1-phosphate prevents liver and kidney damage following hepatic ischemia and reperfusion injury in mice at doses lower than 0.1 and 0.2 mg/kg when administered prior to or following reperfusion, respectively.[2] It has antifibrotic effects in scleroderma fibroblasts through normalization of PTEN protein levels, collagen and matrix metalloproteinase-1 (MMP-1) expression, and Smad3 phosphorylation.[3,4]

References

1. Van Brocklyn, J.R., Lee, M.-J., Menzeleev, R., *et al.* Dual actions of sphingosine-1-phosphate: Extracellular through the G_i-coupled receptor Edg-1 and intracellular to regulate proliferation and survival. *J. Cell. Biol.* **142(1)**, 229-240 (1998).
2. Park, S.W., Kim, M., Chen, S.W.C., *et al.* Sphinganine-1-phosphate attenuates both hepatic and renal injury induced by hepatic ischemia and reperfusion in mice. *Shock* **33(1)**, 31-42 (2010).
3. Bu, S., Asano, Y., Bujor, A., *et al.* Dihydrosphingosine 1-phosphate has a potent antifibrotic effect in scleroderma fibroblasts via normalization of phosphatase and tensin homolog levels. *Arthrtis Rheum.* **62(7)**, 2117-2126 (2010).
4. Bu, S., Kapanadze, B., Hsu, T., *et al.* Opposite effects of dihydrosphingosine 1-phosphate and sphingosine 1-phosphate on transforming growth factor-β/Smad signaling are mediated through the PTEN/PPM1A-dependent pathway. *J. Biol. Chem.* **283(28)**, 19593-19602 (2008).

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.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/24/2018

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