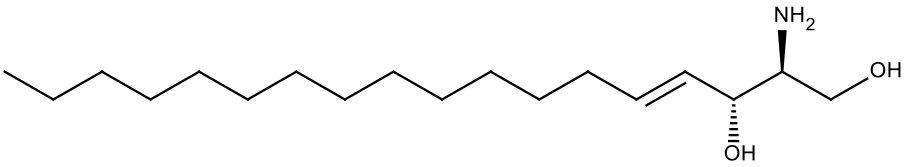
Catalog # 10-2287

Sphingosine

CAS# 123-78-4

(2S,3R,4E)-2-Amino-4-octadecene-1,3-diol

Lot # X101777



Sphingosine is an inhibitor of protein kinase C (IC50 = 1-3 µM).1 It is abundant in cell membranes and is an important mediator in various biochemical pathways.[2-4]

1) Merrill et al., (1989) *Structural requirements for long-chain (sphingoid) base inhibition of protein kinase C in vitro and for the cellular effects of these compounds* Biochemistry **28** 3138
2) Ohanian and Ohanian (2001) *Sphingolipids in mammalian cell signaling* Cell.Mol.Life Science **58** 2053
3) Ruvolo (2003) *Intracellular signal transduction pathways activated by ceramide and its metabolites* Pharm.Res. **47** 383
4) Olivier (2002) *Sphingosine in apoptosis signaling* Biochim.Biophys.Acta **1585** 153

PHYSICAL DATA

Molecular Weight:	299.49
Molecular Formula:	$C_{18}H_{37}NO_2$
Purity:	>98% by TLC (10% Methanol/$CHCl_3$ + 0.1% NH_4OH; Rf = 0.40) NMR: (Conforms)
Solubility:	Ethanol (up to 15 mg/ml); DMSO (up to 5 mg/mL with warming); for aqueous solutions see attached protocol
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 3 months.

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Solubilizing Sphingosine

To use sphingosine in cell culture or aqueous based enzymatic experiments, we recommend using BSA to facilitate solubilization in water.

Prepare a 125μM stock in 4mg/ml BSA as follows: Initially suspend the sphingosine in 100% anhydrous methanol (~ 1 mg/ml). This may require boiling (65°C), with occasional replacement of evaporated methanol. Crushing of solid prior to addition of methanol and crushing and stirring during heating is helpful. (Note: this process takes time, but will eventually produce a true clear stock solution.)

If you do not intend to use the all of the sphingosine in one working day, aliquot desired amounts of methanol solution to tubes. Evaporate the solvent with a stream of nitrogen, swirling to deposit a thin film on the inside of the tube. Aliquots may be stored at -20 °C at this point.

When ready to use the aliquots can be re-suspended with water containing 4mg/ml of fatty acid free BSA. Warm to 37°C, with repeated vortexing or shaking until all the solid has been dissolved and no crystals remain. This may take 30-60 minutes or longer depending upon the amount of sphingosine per tube, and the crystal size etc. Be patient, and allow plenty of time for prep before samples are needed. Sphingosine samples can be re-suspended the day before they are needed and stored in the freezer overnight. Some precipitate may be observed as the samples thaw, but these should re-dissolved after warming to 37°C for a few minutes.