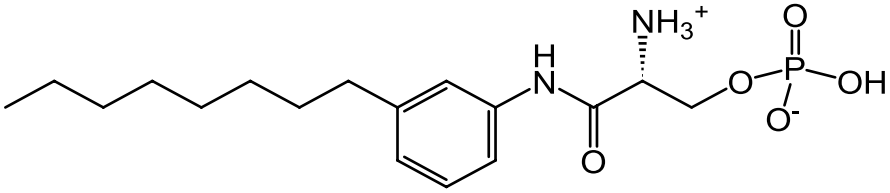
Technical Data Sheet

(R)-Phosphoric acid mono-[2-amino-2-(3-octyl-phenylcarbamoyl)-ethyl] ester (VPC 23019)

Catalog Number	857360	**Physical state**	Powder
Purity	> 99%	**Transition temp.**	No data
CAS	449173-19-7	**CMC**	No data
Synonyms	$S1P_1/S1P_3$ receptor antagonist; $S1P_4/S1P_5$ agonist; VPC 23019	**pK_a**	No data
Molec. Formula	$C_{17}H_{32}N_3O_5P$	**TLC mobile phase**	C:M:W*, 65:35:8, v/v
MW	389.396	**Exact Mass**	389.181
Percent composition	C 54.83% H 7.85% N 7.52% O 21.48% P 8.32%		
Stability	Store in <-20°C freezer for up to 6 months.		
Solubility	Dissolve to 20mM in DMSO/1N HCl (95:5 v/v). Dilute (1:20) immediately into 3% aqueous fatty acid free BSA. Final stock is 1mM lipid, 95 parts BSA, 5 parts acidified DMSO. Aliquot and store at < -20°C; avoid freeze/thaw		
Web link	**857360**		

*chloroform:methanol:water



Description:

Sphingosine-1-phosphate (S1P) is a lysophospholipid mediator that evokes a variety of cellular responses by stimulation of five members of the endothelial cell differentiation gene receptor family. The endothelial cell differentiation gene receptors are G-protein coupled receptors that, upon stimulation, propagate second messenger signals via activation of heterotrimeric G-protein subunits and dimers. Ultimately, this S1P-driven signaling results in cell survival, increased cell migration, and, often, mitogenesis. (Davis *et al*, 2005)

VPC23019 is an analog of S1P. It is a competitive antagonist at mouse and human (and presumably other mammalian) $S1P_1$ and $S1P_3$ receptors (or, more precisely, an inverse agonist at these receptor types), inactive at $S1P_2$, and an agonist at $S1P_4$ and $S1P_5$. At $S1P_1$, VPC23019 competes ^{32}P-S1P binding and shifts concentration-effect curves in a parallel, rightward fashion. Analyses of these data predict a Ki value of 30 nM for VPC23019 at $S1P_1$, and suggest that VPC23019 is a competitive antagonist at $S1P_1$. VPC23019 is clearly less potent (about 10-fold less) at $S1P_3$. (Davis *et al*, 2005)

How to use:

Antagonism at the $S1P_1$ and $S1P_3$ receptors was shown in the range of 10-10,000 nM (Davis *et al*, 2005).
Please use the following web links for **TLC** or **liposome preparation**

References:

- Skoura A, Hla T (2009) Lysophospholipid receptors in vertebrate development, physiology, and pathology. J Lipid Res. 2009 Apr;50 Suppl:S293-8
- Gardell SE, Dubin AE, Chun J (2006) Emerging medicinal roles for lysophospholipid signaling. Trends Molec Med 12(2): 65-75
- Davis MD *et al* (2005) Spingosine-1-phosphate analogs as receptor antagonists. J Biol Chem 280(11): 9833-9841
- Santos WL *et al* (2004) Synthesis and biological evaluation of phosphonic and thiophosphoric acid derivatives of lysophosphatidic acid. Bioorg Med Chem Lett 14:3473-3476.

Related products: Receptor Agonist/Antagonist

MSDS: Available at www.avantilipids.com for Product Number 857360

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