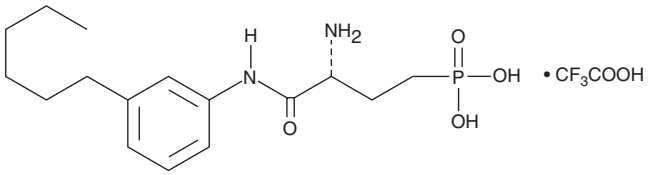
PRODUCT INFORMATION

W146 (trifluoroacetate salt)

Item No. 10009109

CAS Registry No.: 909725-62-8
Formal Name: [3R-amino-4-[(3-hexylphenyl) amino]-4-oxobutyl]-phosphonic acid, mono(trifluoroacetate)
MF: $C_{16}H_{27}N_2O_4P \bullet CF_3COOH$
FW: 456.4
Purity: ≥95%
UV/Vis.: λ_{max}: 245 nm
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

W146 (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the W146 (trifluoroacetate salt) in the solvent of choice, which should be purged with an inert gas. W146 (trifluoroacetate salt) is soluble in the organic solvent methanol at a concentration of approximately 0.1 mg/ml.

Description

W146 is a sphingosine-1-phosphate receptor 1 ($S1P_1$) antagonist (K_i = 77 nM).[1] It is selective for $S1P_1$ over $S1P_2$, $S1P_3$, and $S1P_5$ receptors (K_is = >10 µM for all). W146 prevents ligand-induced receptor internalization in CHO cells and inhibits the phosphorylation of ERK1 and Akt when used at a concentration of 10 µM. W146 (5 mg/kg) increases AMD3100-induced $Kit^+/Sca\text{-}1^+/Lin^-$ hematopoietic stem progenitor cell (KSL-HSPC) entrance into mouse blood circulation from the bone marrow when administered in combination with the chemokine (C-X-C motif) receptor 4 (CXCR4) antagonist and stem cell-mobilizer AMD3100.[2] Intranasal or intradermal administration of W146 (10 µg) also disrupts the endothelial barrier and induces the infiltration of polymorphonuclear (PMN) neutrophils into the lungs and skin in an ovalbumin-induced mouse model of immune cell-mediated vascular injury.[3]

References

1. Sanna, M.G., Wang, S.-K., Gonzalez-Cabrera, P.J., *et al.* Enhancement of capillary leakage and restoration of lymphocyte egress by a chiral $S1P_1$ antagonist *in vivo*. *Nat. Chem. Bio.* **2(8)**, 434-441 (2006).
2. Liu, J., Zhao, J., Lee, J.-F., *et al.* 3-Amino-4-(3-hexylphenylamino)-4-oxobutyl phosphonic acid (W146), a selective antagonist of sphingosine-1-phospahte receptor subtype 1, enhances AMD3100-stimulated mobilization of hematopoietic stem progenitor cells in animals. *J. Biochem. Pharmacol. Res.* **1(4)**, 197-203 (2013).
3. Burg, N., Swendeman, S., Worgall, S., *et al.* Sphingosine 1-phosphate receptor 1 signaling maintains endothelial cell barrier function and protects against immune complex-induced vascular injury. *Arthritis Rheumatol.* **70(11)**, 1879-1889 (2018).

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