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Fingolimod (hydrochloride)

Catalog No: tcsc0114

Available Sizes

Size: 100mg

Size: 200mg

Size: 1g

Size: 5g

Specifications

CAS No:
162359-56-0

Formula:
$C_{19}H_{34}ClNO_2$

Pathway:
GPCR/G Protein

Target:
LPL Receptor

Purity / Grade:
>98%

Solubility:
DMSO : ≥ 100 mg/mL (290.76 mM); H2O : 50 mg/mL (145.38 mM; Need ultrasonic)

Alternative Names:
FTY720

Observed Molecular Weight:
343.93

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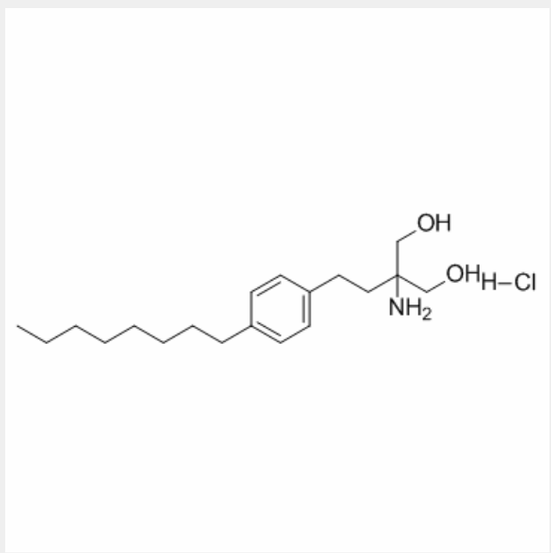
Product Description

Fingolimod hydrochloride is a **sphingosine 1-phosphate** (**S1P**) antagonist with an **IC_{50}** of 0.033 nM in K562 and NK cells.

IC50 & Target: IC50: 0.033 nM (S1P, in K562 and NK cells)[1]

In Vitro: The monocyte-derived immature dendritic cells (iDCs) are pretreated with various concentrations of S1P for various periods of time prior to their incubation with NK cells. Four hours incubation of autologous or allogeneic iDCs with 0.2-20 μM of S1P significantly protectes these cells from NK cell lysis. The IC_{50} values of S1P are calculated at 160 nM for autologous iDCs, and 34 nM for allogeneic iDCs. Next, the inhibitory effect of S1P is revered by various concentrations of Fingolimod hydrochloride (FTY720) or SEW2871, with an IC_{50} effect of 173 or 15 nM, respectively[1]. The immunomodulator Fingolimod hydrochloride (FTY720) is a structural analogue of S1P and acts in its phosphorylated isoform as an unselective agonist on $S1P_1$ and $S1P_{3-5}$ and a selective functional antagonist on $S1P_1$. FTY720 enhances serum S1P levels by inhibiting S1P lyase activity[2]. The number of $Iba1^+$ cells in ipsilateral CA3 is counted, and the corresponding graph shows a significantly lower number of $Iba1^+$ cells in CA3 of the Kainic acid (KA)+FTY720 group than in CA3 of KA group[3].

In Vivo: Administration of the immunomodulator Fingolimod hydrochloride (0.1 mg/kg i.v.) increases serum S1P, improves impaired systolic contractility and activates the PI3K-pathway in the heart. Administration of Fingolimod hydrochloride (FTY720) causes a significant rise in serum S1P levels in both sham-operated animals and animals challenged with LPS/PepG (P[2]. FTY720 attenuates microgliosis, modulates the microglia inflammatory phenotype by reducing LPS-mediated activation of p38 MAPK signalling pathway. Thus, FTY720 shares both direct neuroprotective and anti-inflammatory properties that can contribute to overall neuroprotection. In particular, the potential of FTY720 to switch microglia phenotype from a detrimental to a protective one represents a therapeutic mechanism for attenuating acute and chronic CNS damage[3].



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