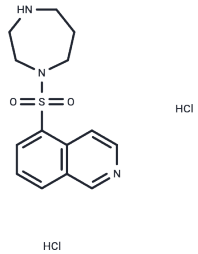
Data Sheet (Cat.No.T61382)

TargetMol

Fasudil dihydrochloride

Chemical Properties



CAS No. :	203911-27-7
Formula:	C14H19Cl2N3O2S
Molecular Weight:	364.29
Storage:	Store at low temperature Powder: -20°C for 3 years | In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	Fasudil dihydrochloride, also known as HA-1077 and AT877, is a nonspecific inhibitor of RhoA/ROCK. Fasudil dihydrochloride exhibits inhibitory effects on protein kinases including ROCK1 (Ki = 0.33 μM), ROCK2 (IC50 = 0.158 μM), PKA (IC50 = 4.58 μM), PKC (IC50 = 12.30 μM), and PKG (IC50 = 1.650 μM), while also acting as a potent Ca2+ channel blocker and vasodilator, providing a multifunctional pharmacological tool for vascular, cardiovascular, and cellular signaling research.
Targets(IC50)	Rho,PKA,PKC,ROCK
In vitro	Fasudil dihydrochloride (100 μM) can inhibit cell spreading, stress fiber formation, and α-SMA expression in rat hepatic stellate cells (HSCs) and human HSC-derived TWNT-4 cells, while also significantly suppressing the proliferation of these two cell types [4]. Fasudil dihydrochloride (50-100 μM) can inhibit lysophosphatidic acid (LPA)-induced phosphorylation levels of ERK1/2, JNK, and p38 in rat hepatic stellate cells and human HSC-derived TWNT-4 cells [4]. Fasudil dihydrochloride (25-100 μM, 24 h) can suppress the transcription of collagen and tissue inhibitor of metalloproteinases (TIMP), and simultaneously promote the transcription of matrix metalloproteinase-1 (MMP-1) in human HSC-derived TWNT-4 cells [4].
In vivo	Fasudil dihydrochloride (10 mg/kg, i.v., administered 1 hour before surgery) exhibits protective effects on the cardiovascular system under ischemic injury conditions, reduces the activation level of JNK, and attenuates the mitochondrial-nuclear translocation of AIF [5]. Fasudil dihydrochloride (50 mg/kg/day, i.p.) can suppress acute and recurrent EAE induced by proteolipid protein PLP p139-151, inhibit lymphocyte proliferation, downregulate the expression of IL-17, and significantly reduce the IFN-γ/IL-4 ratio [6]. Fasudil dihydrochloride (100 mg/kg/day, p.o.) significantly decreases the incidence and pathological scores of EAE in SJL/J mice, while alleviating inflammatory responses, demyelination, axonal loss in spinal cord tissues, and reducing the accumulation of APP-positive signals in the spinal cord [6].

Solubility Information

Solubility	H2O: ≥ 80 mg/mL,Sonication is recommeded. DMSO: 16 mg/mL (43.92 mM),Sonication is recommeded. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7451 mL	13.7253 mL	27.4507 mL
5 mM	0.549 mL	2.7451 mL	5.4901 mL
10 mM	0.2745 mL	1.3725 mL	2.7451 mL
50 mM	0.0549 mL	0.2745 mL	0.549 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Chen M, et al. Fasudil and its analogs: a new powerful weapon in the long war against central nervous system disorders? Expert Opin Investig Drugs. 2013 Apr;22(4):537-50.
Huang XN, et al. The effects of fasudil on the permeability of the rat blood-brain barrier and blood-spinal cordbarrier following experimental autoimmune encephalomyelitis. J Neuroimmunol. 2011 Oct 28;239(1-2):61-7.
Uehata M, et al. Calcium sensitization of smooth muscle mediated by a Rho-associated protein kinase in hypertension. Nature. 1997 Oct 30;389(6654):990-4.
Fukushima M, et al. Fasudil hydrochloride hydrate, a Rho-kinase (ROCK) inhibitor, suppresses collagen production and enhances collagenase activity in hepatic stellate cells. Liver Int. 2005 Aug;25(4):829-38.
Zhang J, et al. Inhibition of the activity of Rho-kinase reduces cardiomyocyte apoptosis in heart ischemia/reperfusion via suppressing JNK-mediated AIF translocation. Clin Chim Acta. 2009 Mar;401(1-2):76-80.
Sun X, et al. The selective Rho-kinase inhibitor Fasudil is protective and therapeutic in experimental autoimmune encephalomyelitis. J Neuroimmunol. 2006 Nov;180(1-2):126-34. Epub 2006 Sep 22.