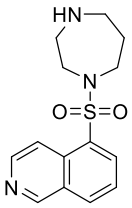
Product data sheet

MedKoo Cat#: 584417 Name: Fasudil CAS#: 103745-39-7 Chemical Formula: $C_{14}H_{17}N_3O_2S$ Exact Mass: 291.1041 Molecular Weight: 291.369	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Fasudil, a Rho-kinase inhibitor, has been shown to reduce portal venous pressure in cirrhotic rats.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.43 mL	17.16 mL	34.32 mL
5 mM	0.69 mL	3.43 mL	6.86 mL
10 mM	0.34 mL	1.72 mL	3.43 mL
50 mM	0.07 mL	0.34 mL	0.69 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Fukushima M, Nakamuta M, Kohjima M, Kotoh K, Enjoji M, Kobayashi N, Nawata H. 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. doi: 10.1111/j.1478-3231.2005.01142.x. PMID: 15998434.

In vivo study

1. Zhang J, Li XX, Bian HJ, Liu XB, Ji XP, Zhang Y. 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. doi: 10.1016/j.cca.2008.11.016. Epub 2008 Nov 24. PMID: 19061880.

7. Bioactivity
Biological target:

Fasudil (HA-1077; AT877), is a nonspecific RhoA/ROCK inhibitor and also has inhibitory effect on protein kinases, with an Ki of 0.33 μM for ROCK1, IC50s of 0.158 μM and 4.58 μM, 12.30 μM, 1.650 μM for ROCK2 and PKA, PKC, PKG, respectively

In vitro activity

Fasudil (100 microM) inhibited cell spreading, the formation of stress fibers, and expression of alpha-SMA with concomitant suppression of cell growth, although it did not induce apoptosis. Fasudil inhibited phosphorylation of ERK1/2, JNK, and p38.

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Treatment with fasudil suppressed the production and transcription of collagen and TIMP, stimulated the production and transcription of MMP-1, and enhanced collagenase activity.

Reference: Liver Int. 2005 Aug;25(4):829-38. https://doi.org/10.1111/j.1478-3231.2005.01142.x

In vivo activity

Ischemia followed by reperfusion caused a significant increase in Rho-kinase, c-Jun NH2-terminal kinase (JNK) and apoptosis-inducing factor (AIF) activity. Administration of fasudil, an inhibitor of Rho-kinase, decreased myocardial infarction size from 59.89+/-3.83% to 38.62+/-2.66% (P<0.05) and cell apoptosis from 32.78+/-5.1% to 17.05+/-4.2% (P<0.05). Western blot analysis showed that administration of fasudil reduced the activation of JNK and attenuated mitochondrial-nuclear translocation of AIF.

Reference: Clin Chim Acta. 2009 Mar;401(1-2):76-80. https://linkinghub.elsevier.com/retrieve/pii/S0009-8981(08)00560-3