Fasudil . hydrochloride

Selective Rho-kinase (ROCK) inhibitor

Fasudil . Hydrochloride is a potent, cell-permeable, and selective inhibitor of Rho-associated protein kinase (ROCK), with an IC_{50} of approximately 10.7 μM. It is widely used in research involving vascular biology, neuroprotection, and cytoskeletal dynamics. Fasudil inhibits ROCK-mediated phosphorylation of myosin light chain, leading to smooth muscle relaxation and reduced cellular contractility.

Key features and applications include:

- **Selective ROCK Inhibition:** Targets ROCK1 and ROCK2, key regulators of actin cytoskeleton and cell motility.
- **Neuroprotective Effects:** Reduces axonal degeneration and apoptosis in neuronal models; protects against hypoxia-reoxygenation injury.
- **Anti-Inflammatory Activity:** Inhibits neutrophil transendothelial migration and microglial activation.
- **Vascular Relaxation:** Used in studies of cerebral vasospasm and pulmonary hypertension due to its vasodilatory effects.
- **Bone Regeneration:** Promotes osteoblastic differentiation via BMP-2 signaling.

Research Applications:

- Neurodegeneration and stroke models
- Vascular biology and endothelial function
- Inflammation and immune cell migration
- Bone and cartilage tissue engineering
- Cancer cell invasion and metastasis

Relevant disease states include:

- **Cerebral Vasospasm:** Clinically used in some countries to treat subarachnoid hemorrhage-induced vasospasm.

- **Neurodegenerative Diseases:** Investigated for its ability to protect neurons in models of ALS, Parkinson's, and Alzheimer's disease.
- **Pulmonary Hypertension:** Explored for its role in reducing vascular resistance and remodeling.
- **Osteoporosis and Bone Healing:** Enhances osteoblast activity and bone matrix production.
- **Cancer:** Shown to suppress MMP-2 expression and induce apoptosis in glioblastoma and other tumor models.

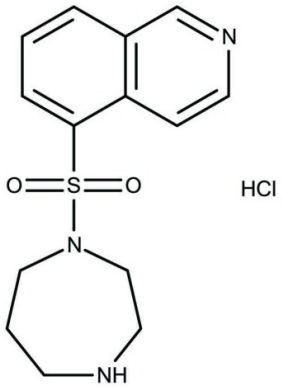
Ordering Information

Order Online »

ENZ-CHM374-0250	250mg

Manuals, SDS & CofA

View Online »


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Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Short Term Storage	Ambient
Long Term Storage	Ambient
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	HA-1077 . hydrochloride, AT-877 . hydrochloride, 5-(1,4-diazepan-1-ylsulfonyl)isoquinoline;hydrochloride
Appearance	White solid.
CAS	105628-07-7
Couple Target	PKA, PKC, PKG, ROCK
Couple Type	Inhibitor
Formula	$C_{14}H_{18}ClN_3O_2S$
Identity	Determined by NMR.
MW	327.84
Purity	≥98% (TLC)
Solubility	Soluble in DMSO (up to 75 mg/mL) or in water (up to 100 mg/mL).

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