

PRODUCT INFORMATION



Y-27632 (hydrochloride)

Item No. 10005583

CAS Registry No.: 129830-38-2

Formal Name: *trans*-4-[(1*R*)-1-aminoethyl]-*N*-4-pyridinyl-Cyclohexanecarboxamide, dihydrochloride

MF: C₁₄H₂₁N₃O • 2HCl

FW: 320.3

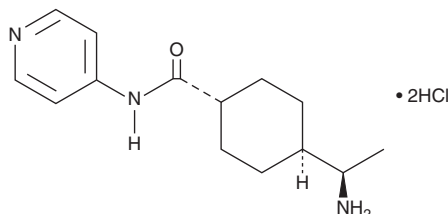
Purity: ≥98%

UV/Vis.: λ_{max}: 270 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Y-27632 (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the Y-27632 (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Y-27632 (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of Y-27632 (hydrochloride) in DMSO is approximately 30 mg/ml and approximately 1 mg/ml in ethanol and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of Y-27632 (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of Y-27632 (hydrochloride) in PBS (pH 7.2) is approximately 100 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The ROCK family of Rho-associated serine-threonine protein kinases is known to play an important role in Rho-mediated cell adhesion and smooth muscle contraction. Y-27632 is a potent, ATP-competitive inhibitor of ROCKs including p160ROCK (K_i = 140 nM) and ROCK2 (IC_{50} = 800 nM). It also inhibits PRK2 with an IC_{50} value of 600 nM.^{1,2} One-hour treatment with 10 μM Y-27632 blocks apoptosis of dissociated cultured human embryonic stem cells, increasing cloning efficiency by 25% and sustaining survival up to 30 passages.³

References

1. Davis, S.P., Reddy, H., Caivano, M., *et al.* Specificity and mechanism of action of some commonly used protein kinase inhibitors. *Biochem J.* **351**, 95-105 (2000).
2. Uehata, M., Ishizaki, T., Satoh, H., *et al.* Calcium sensitization of smooth muscle mediated by a Rho-associated protein kinase in hypertension. *Nature* **389**, 990-994 (1997).
3. Watanabe, K., Ueno, M., Kamiya, D., *et al.* A ROCK inhibitor permits survival of dissociated human embryonic stem cells. *Nature Biotechnology* **25**(6), 681-686 (2007).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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