

**Product Name:** Y-27632 dihydrochloride

**Catalog No.:** 1254

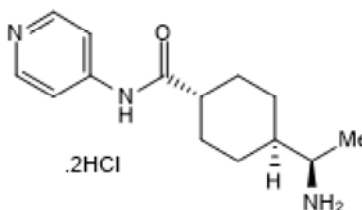
**Batch No.:** 43

CAS Number: 129830-38-2

IUPAC Name: *trans*-4-[(1*R*)-1-Aminoethyl]-*N*-4-pyridinylcyclohexanecarboxamide dihydrochloride

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>14</sub>H<sub>21</sub>N<sub>3</sub>O.2HCl.¾H<sub>2</sub>O  
**Batch Molecular Weight:** 333.77  
**Physical Appearance:** White solid  
**Solubility:** phosphate buffered saline to 100 mM  
water to 100 mM  
**Storage:** Desiccate at RT  
**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**HPLC:** Shows 99.8% purity  
**Chiral HPLC:** Shows 99.8% purity  
<sup>1</sup>H NMR: Consistent with structure  
**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	50.38	7.4	12.59
Found	50.2	7.4	12.42

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Description:**

Selective ROCK inhibitor ( $K_i$  values are 0.14-0.22, 0.3, 25, 26 and > 250  $\mu$ M for ROCK1 (p160 ROCK), ROCK2, PKA, PKC and MLCK respectively). Also inhibits PRK2 ( $IC_{50}$  = 600 nM). Increases survival rate of human embryonic stem (hES) cells and iPSC undergoing cryopreservation. Used in combination with CHIR99021, RepSox, Forskolin, SP 600125, Go 6983 and Valproic Acid to reprogram fibroblasts to mature neurons. Also optimizes naïve human pluripotent stem cell growth and viability following naïve cell derivation from primed ESCs and iPSCs using naïve human stem cell medium (NHSM). Cell-permeable, orally bioavailable and active in vivo. ... Please see product datasheet on www.tocris.com for full description.

**Physical and Chemical Properties:**

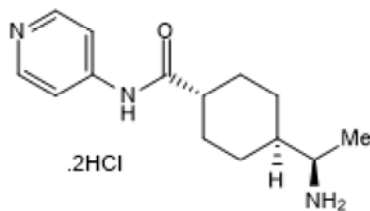
Batch Molecular Formula:  $C_{14}H_{21}N_3O \cdot 2HCl \cdot \frac{3}{4}H_2O$

Batch Molecular Weight: 333.77

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**References:**

**Wimmer et al** (2019) Human blood vessel organoids as a model of diabetic vasculopathy. *Nature* **565** 505. PMID: 30651639.

**Wilson et al** (2016) Cryopreservation of brain endothelial cells derived from human induced pluripotent stem cells is enhanced by Rho-associated coiled coil-containing kinase inhibition. *Tissue.Eng.Part C.Methods* **22** 1085. PMID: 27846787.

**Bartfeld et al** (2015) *In vitro* expansion of human gastric epithelial stem cells and their responses to bacterial infection. *Gastroenterology* **148** 126. PMID: 25307862.

**Hu et al** (2015) Direct conversion of normal and Alzheimer's Disease human fibroblasts into neuronal cells by small molecules. *Cell Stem Cell* **17** 204. PMID: 26253202.

**Lancaster et al** (2015) Generation of Cerebral Organoids from Human Pluripotent Stem Cells *Nat. Protoc.* **9** 2329. PMID: 25188634.

**Sato et al** (2015) SnapShot: Growing Organoids from Stem Cells. *Cell* **161** 1700. PMID: 26091044.

**Mahe et al** (2014) Establishment of gastrointestinal epithelial organoids *Curr.Protoc.Mouse.Biol* **3** 217. PMID: 25105065.

**Gafni et al** (2013) Derivation of novel human ground state naïve pluripotent stem cells. *Nature* **504** 282. PMID: 24172903.

**Ichikawa et al** (2011) Freeze-thawing single human embryonic stem cells induce e-cadherin and actin filament network disruption via g13 signaling. *Cryo Letters.* **32** 516. PMID: 22227712.

**Jung et al** (2011) Isolation and *in vitro* expansion of human colonic stem cells. *Nat.Med.* **17** 1225. PMID: 21892181.

**Ishizaki et al** (2000) Pharmacological properties of Y-27632, a specific inhibitor of rho-associated kinases. *Mol.Pharmacol.* **57** 976. PMID: 10779382.

**Narumiya et al** (2000) Use and properties of ROCK-specific inhibitor Y-27632. *Methods Enzymol.* **325** 273. PMID: 11036610.

**Dinh et al** (1997) Calcium smooth muscle mediated by **Europe Middle East Africa Res Ref No 990**. PMID: 9256125

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**Storage:** Desiccate at RT

**Solubility & Usage Info:**

phosphate buffered saline to 100 mM  
water to 100 mM

When purchased as a 1mg unit, this product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.