

# Y-27632

**Catalog No: tcsc0131**



## Available Sizes

**Size:** 5mg

**Size:** 10mg

**Size:** 50mg

**Size:** 100mg



## Specifications

**CAS No:**

146986-50-7

**Formula:**

$C_{14}H_{21}N_3O$

**Pathway:**

Apoptosis; Cell Cycle/DNA Damage; Cytoskeleton; Stem Cell/Wnt; TGF-beta/Smad

**Target:**

Apoptosis; ROCK

**Form:**

White to off-white (Solid)

**Purity / Grade:**

99.89%

**Solubility:**

DMSO : 50 mg/mL (202.15 mM; Need ultrasonic);

H2O : 1 mg/mL (4.04 mM; ultrasonic and warming and heat to 60°C)

**Storage Instruction:**

-20°C, protect from light, stored under nitrogen

**Alternative Names:**

Cyclohexanecarboxamide, 4-[(1R)-1-aminoethyl]-N-4-pyridinyl-, trans

**Observed Molecular Weight:**

247.34

**References**

[1]. Ishizaki T, et al. Pharmacological properties of Y-27632, a specific inhibitor of rho-associated kinases. Mol Pharmacol. 2000 May;57(5):976-83. [2]. Xue ZW, et al. Rho-associated coiled kinase inhibitor Y-27632 promotes neuronal-like differentiation of adult human adipose tissue-derived stem cells. Chin Med J (Engl). 2012 Sep;125(18):3332-5. [3]. Inan S, et al. Antiepileptic effects of two Rho-kinase inhibitors, Y-27632 and fasudil, in mice. Br J Pharmacol. 2008 Sep;155(1):44-51. [4]. Tada S, et al. A selective ROCK inhibitor, Y27632, prevents dimethylnitrosamine-induced hepatic fibrosis in rats. J Hepatol. 2001 Apr;34(4):529-36. [5]. Maldonado M, et al. ROCK inhibitor primes human induced pluripotent stem cells to selectively differentiate towards mesodermal lineage via epithelial-mesenchymal transition-like modulation. Stem Cell Res. 2016 Sep;17(2):222-227. [6]. Kan L, et al. Rho-Associated Kinase Inhibitor (Y-27632) Attenuates Doxorubicin-Induced Apoptosis of Human Cardiac Stem Cells. PLoS One. 2015;10(12):e0144513. Published 2015 Dec 8. [7]. Zhang L, et al. ROCK inhibitor Y-27632 suppresses dissociation-induced apoptosis of murine prostate stem/progenitor cells and increases their cloning efficiency. PLoS One. 2011;6(3):e18271. Published 2011 Mar 28. [8]. Svoboda KK, et al. ROCK inhibitor (Y27632) increases apoptosis and disrupts the actin cortical mat in embryonic avian corneal epithelium. Dev Dyn. 2004;229(3):579-590.

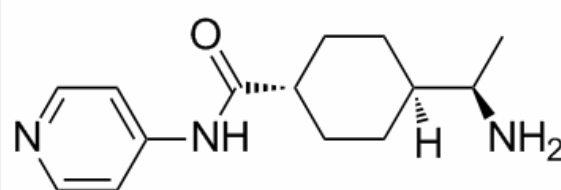
**Product Description**

Y-27632 is an ATP-competitive inhibitor of **ROCK-I** and **ROCK-II**, with  $K_i$  of 220 nM and 300 nM for **ROCK-I** and **ROCK-II**, respectively.

IC50 & Target:  $K_i$ : 220/300 nM (ROCK-I/II)<sup>[1]</sup>

**In Vitro:** Y-27632 inhibits the ROCK family of kinases 100 times more potently than other kinases including protein kinase C, cAMP-dependent kinase and myosin light chain kinase. Y-27632 prolongs the lag time and delays the appearance of BrdU-labeled cells in a concentration-dependent manner, delays of about 1 and 4 h are noticed in the Swiss 3T3 cells treated with 10 and 100  $\mu$ M Y-27632, respectively<sup>[1]</sup>. Y-27632 promotes neuronal differentiation of adipose tissue-derived stem cells (ADSCs). Compared to 1.0 and 2.5  $\mu$ M Y-27632 induced groups, percentages of neuronal-like cells achieved a peak in the 5.0  $\mu$ M Y-27632 induced group<sup>[2]</sup>.

**In Vivo:** Y-27632 (5 and 10 mg/kg) significantly prolongs the onset time of myoclonic jerks when compared with saline group. Y-27632 (5 and 10 mg/kg) significantly prolongs the onset time of clonic convulsions when compared with saline group<sup>[3]</sup>. Treatment with Dimethylnitrosamine (DMN) causes a significant decrease in rat body and liver weight (DMN-S group) compared with control animals (S-S group). Oral Y27632 (30 mg/kg) essentially prevents this DMN-induced rat body and liver weight loss (DMN-Y group)<sup>[4]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!