India Contact:
Life Technologies (India) Pvt. Ltd.
Mobile: +91-9810521400, Ph: +91-11-42208000
Email: customerservice@lifetechindia.com
Web: www.lifetechindia.com

# Y27632

## Product Description

Y27632 is a cell-permeable small molecule Rho-associated kinase (ROCK) inhibitor [1]. Y27632 has been found to prevent apoptosis as well as enhance the survival and cloning efficiency of dissociated human embryonic stem (ES) cells without affecting their self-renewal properties or pluripotency [2]. This molecule has also been shown to enhance survival during the transplantation of ES cell-derived neural precursors [3]. Y27632 in combination with Pifithrin-μ significantly improves cell recovery after cryopreservation [4].

**Catalog No.:** MD-0025

**Quantity:** 2mg (10mM in 624.4μl DMSO)

**Alternate Name:** (1R,4r)-4-((R)-1-aminoethyl)-N-(pyridine-4-yl)cyclohexanecarboxamide dihydrochloride

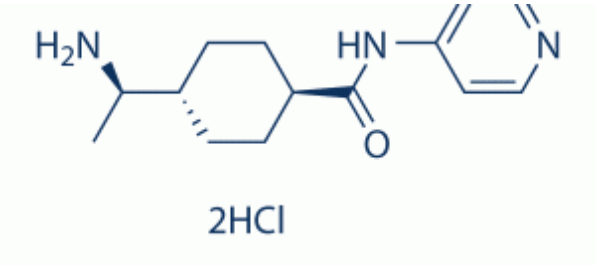
**CAS Number:** 146986-50-7

**Chemical Formula:** $C_{14}H_{23}Cl_2N_3O$

**Molecular Weight:** 320.3 g/mol

**Purity:** >Greater than 98% by HPLC analysis

**Structure:**




**Applications:** MAINTENANCE AND SELF-RENEWAL

- Enhances survival of human embryonic stem (ES) cells when they are dissociated to single cells by preventing dissociation-induced apoptosis (anoikis), thus increasing their cloning efficiency.
- Improves embryoid body formation using forced-aggregation protocols.
- Increases the survival of cryopreserved single human ES cells after thawing.
- Blocks apoptosis of mouse ES-derived neural precursors after dissociation and transplantation.

REPROGRAMMING

- Direct lineage reprogramming of fibroblasts to mature neurons, in combination with CHIR99021, RepSox, Forskolin, SP600125, Gö6983 and Valproic Acid.

DIFFERENTIATION

- Improves survival of human ES cell monolayers at the initiation of differentiation protocols

**Product Use:** Y27632 is for research use only. It is not approved for human or animal use, or for application in *in vitro* diagnostic procedures.

**Storage & stability:** Store aliquots at -20°C. Stock solutions are stable for 6 months when stored as directed.

## References


[1] Ishizaki, T., Uehata, M., Tamechika, I., Keel, J., Nonomura, K., Maekawa, M., and Narumiya, S. (2000) Pharmacological properties of Y-27632, a specific inhibitor of rho-associated kinases. Mol Pharmacol 57: 976-983.

[2] Watanabe, K., Ueno, M., Kamiya, D., Nishiyama, A., Matsumura, M., Wataya, T., Takahashi, J.B., Nishikawa, S., Nishikawa, S., Muguruma, K., and Sasai, Y. (2007) A ROCK inhibitor permits survival of dissociated human embryonic stem cells.Nat Biotechnol 25: 681-686.

[3] Koyanagi, M., Takahashi, J., Arakawa, Y., Doi, D., Fukuda, H., Hayashi, H., Narumiya, S., and Hashimoto, N. (2008) Inhibition of the Rho/ROCK pathway reduces apoptosis during transplantation of embryonic stem cell-derived neural precursors.J. Neurosci Res. 86: 270-280.

[4] Xu, X., Cowley, S., Flaim, C.J., James, W., Seymour, L.W., Cui, Z. (2010) Enhancement of cell recovery for dissociated human embryonic stem cells after cryopreservation. Biotechnol Prog. 26: 781-788.


### Disclaimers