

#13624 Store at -20°C

Y-27632

1 mg



Cell Signaling
TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Background

Y-27632 is a potent and selective ATP-competitive inhibitor of Rho-associated kinases (ROCK), with K_i values of 0.22 μM and 0.30 μM for ROCK1 and ROCK2, respectively. *In vitro* kinase assays demonstrate that Y-27632 exhibits a 20-fold greater preference for ROCK when compared to citron kinase and protein kinase N (1). Research studies show that Y-27632 treatment of cells leads to inhibition of ROCK phosphorylation of myosin phosphatase subunit 1 (MYPT1) at both Thr853 and Thr696, with a much greater inhibition of Thr853 phosphorylation (2,3). Y-27632 selectively inhibits smooth-muscle contraction by inhibiting Ca^{2+} sensitization (4). Additional research indicates that Y-27632 inhibits dissociation-induced apoptosis of cultured human embryonic stem cells over numerous passages and increases cloning efficiency (5).

Molecular Formula

$\text{C}_{14}\text{H}_{21}\text{N}_3\text{O} \cdot 2\text{HCl}$

Molecular Weight

320.3 g/mol

Purity

>98%

CAS

129830-38-2

Solubility

Soluble in DMSO at 20mg/ml and H₂O at 14mg/ml.

Storage

Store lyophilized or in solution at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

Directions for Use:

Y-27632 is supplied as a lyophilized powder. For a 10 mM stock, reconstitute the 1 mg in 312.2 μl DMSO. Working concentrations and length of treatment can vary depending on the desired effect, but it is typically used at 1-10 μM for 15 min-4 hr.

Background References

1. Ishizaki, T. et al. (2000) *Mol Pharmacol* 57, 976-83.
2. Garton, A.J. et al. (2008) *Methods Enzymol* 439, 491-500.
3. Ramachandran, C. et al. (2011) *Mol Vis* 17, 1877-90.
4. Uehata, M. et al. (1997) *Nature* 389, 990-4.
5. Watanabe, K. et al. (2007) *Nat Biotechnol* 25, 681-6.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.
All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial

purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.