Small Molecules

Thiazovivin

RHO/ROCK pathway inhibitor; Inhibits ROCK

Catalog # 72252	1 mg
72254	5 mg
100-0247	25 mg

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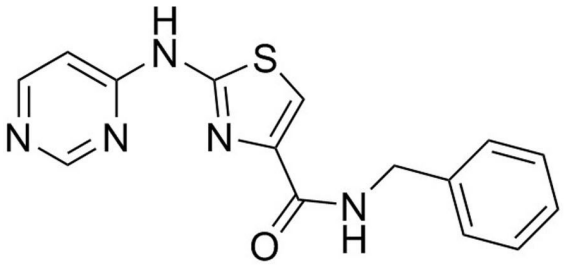
Product Description

Thiazovivin is a selective inhibitor of Rho-associated coiled-coil containing protein kinase (ROCK), a serine/threonine kinase that plays a role in cell polarity, contraction, and actin cytoskeleton reorganization. Thiazovivin is effective at 5-fold-lower concentrations than another common ROCK inhibitor Y-27632 (Catalog #72302; Xu et al.).

Molecular Name:	Thiazovivin
Alternative Names:	Tzv
CAS Number:	1226056-71-8
Chemical Formula:	$C_{15}H_{13}N_5OS$
Molecular Weight:	311.4 g/mol
Purity:	≥ 98%
Chemical Name:	N-(phenylmethyl)-2-(4-pyrimidinylamino)-4-thiazolecarboxamide
Structure:	



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.
Solubility:	· DMSO ≤ 40 mM

For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 321 µL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported; however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

MAINTENANCE AND SELF-RENEWAL

· Promotes survival of human embryonic stem (ES) cells during dissociation by stabilizing E-cadherin and improves cell attachment (Xu et al.).

· Promotes survival of single human induced pluripotent stem (iPS) cells during transfection for TALEN-mediated genome editing (Sun and Zhao).

REPROGRAMMING

· Increases the efficiency of reprogramming human somatic cells to iPS cells, in combination with PD0325091 (Catalog #72182) and SB431542 (Catalog #72232) (Lin et al.).

· Increases the efficiency of reprogramming human cord blood mononuclear cells to iPS cells (Hu et al.). Promotes survival of human embryonic stem (ES) cells during dissociation by stabilizing E-cadherin and improves cell attachment (Xu et al.).

References

Hu K et al. (2011) Efficient generation of transgene-free induced pluripotent stem cells from normal and neoplastic bone marrow and cord blood mononuclear cells. Blood 117(14): e109–19.

Lin T et al. (2009) A chemical platform for improved induction of human iPSCs. Nat Methods 6(11): 805–8.

Sun N & Zhao H. (2014) Seamless correction of the sickle cell disease mutation of the HBB gene in human induced pluripotent stem cells using TALENs. Biotechnol Bioeng 111(5): 1048–53.

Xu Y et al. (2010) Revealing a core signaling regulatory mechanism for pluripotent stem cell survival and self-renewal by small molecules. Proc Natl Acad Sci USA 107(18): 8129–34.

Related Small Molecules

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).