

Small Molecules

Torin 1

mTOR pathway inhibitor; Inhibits mTORC1 and mTORC2 complexes

Catalog # 73492
73494

10 mg
50 mg



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

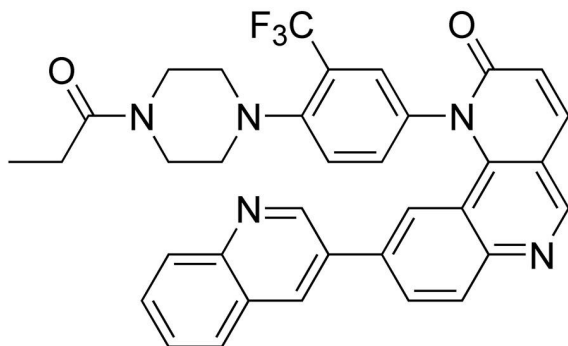
FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

Product Description

Torin 1 is an ATP-competitive inhibitor of the mammalian target of rapamycin (mTOR), inhibiting the mTOR complexes mTORC1 and mTORC2 with IC_{50} values of 2 and 10 nM, respectively. It is selective for mTOR versus a panel of over 400 other kinases screened at 10 μ M (Thoreen et al.; Liu et al.).

Molecular Name: Torin 1
Alternative Names: Not applicable
CAS Number: 1222998-36-8
Chemical Formula: $C_{35}H_{28}F_3N_5O_2$
Molecular Weight: 607.6 g/mol
Purity: $\geq 95\%$
Chemical Name: 1-[4-[4-(1-oxopropyl)-1-piperazinyl]-3-(trifluoromethyl)phenyl]-9-(3-quinoliny)-benzo[h]-1,6-naphthyridin-2(1H)-one

Structure:



Properties

Physical Appearance: A crystalline solid
Storage: Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility: · N-methyl-2-pyrrolidine (NMP) ≤ 40 mM
For example, to prepare a 10 mM stock solution in NMP, resuspend 10 mg in 1.65 mL of NMP.

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 NMP 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 NMP concentration above 0.1% due to potential cell toxicity.

Published Applications

CANCER RESEARCH

- Inhibits tumor growth, likely through a cytostatic rather than cytotoxic mechanism, in a U87MG PTEN-null glioblastoma mouse xenograft model (Liu et al.).
- Hinders growth, motility, invasion, and survival of primary colon cancer stem-like cells in vitro, and suppresses tumor growth but does not affect normal colon stem cells in xenografts (Francipane & Lagasse).

References

Francipane MG & Lagasse E. (2013) Selective targeting of human colon cancer stem-like cells by the mTOR inhibitor Torin-1. *Oncotarget* 4(11): 1948–62.

Liu Q et al. (2010) Discovery of 1-(4-(4-propionylpiperazin-1-yl)-3-(trifluoromethyl)phenyl)-9-(quinolin-3-yl)benzo[h][1,6]naphthyridin-2(1H)-one as a highly potent, selective mammalian target of rapamycin (mTOR) inhibitor for the treatment of cancer. *J Med Chem* 53(19): 7146–55.

Thoreen CC et al. (2009) An ATP-competitive mammalian target of rapamycin inhibitor reveals rapamycin-resistant functions of mTORC1. *J Biol Chem* 284(12): 8023–32.

Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, please visit our website at www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2017 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.