

Small Molecules

Torin 1

mTOR pathway inhibitor; Inhibits mTORC1 and mTORC2 complexes

Catalog # 73492
73494

10 mg
50 mg



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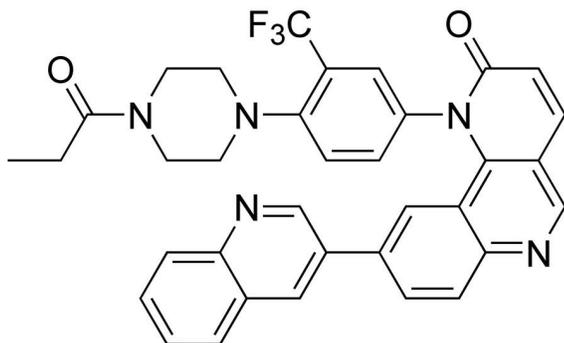
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Product Description

Torin 1 is an ATP-competitive inhibitor of the mammalian target of rapamycin (mTOR), inhibiting the mTOR complexes mTORC1 and mTORC2 with IC₅₀ values of 2 and 10 nM, respectively. It is selective for mTOR versus a panel of over 400 other kinases screened at 10 μM (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 ₃ N ₅ O ₂
Molecular Weight:	607.6 g/mol
Purity:	≥ 95%
Chemical Name:	1-[4-[4-(1-oxopropyl)-1-piperazinyl]-3-(trifluoromethyl)phenyl]-9-(3-quinolinyl)-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. Stable as supplied for 12 months from date of receipt.
Solubility:	· N-methyl-2-pyrrolidone (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 a 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.

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