Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Torin 2

Catalog No: tcsc0236

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Size: 200mg

Specifications

CAS No:
1223001-51-1

Formula:
$C_{24}H_{15}F_3N_4O$

Pathway:
PI3K/Akt/mTOR;Cell Cycle/DNA Damage;PI3K/Akt/mTOR;Autophagy

Target:
DNA-PK;DNA-PK;mTOR;Autophagy

Purity / Grade:
>98%

Solubility:
DMSO : 25 mg/mL (57.82 mM; Need ultrasonic)

Observed Molecular Weight:
432.4

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Product Description

Torin 2 is an **mTOR** inhibitor with **EC_{50}** of 0.25 nM for inhibiting cellular mTOR activity, and exhibits 800-fold selectivity over PI3K (EC $_{50}$: 200 nM). Torin 2 also inhibits **DNA-PK** with an **IC_{50}** of 0.5 nM in the cell free assay. Torin 2 can suppress both **mTORC1** and **mTORC2**.

IC50 & Target: EC50: 0.25 nM (cellular mTOR), 200 nM (cellular PI3K)[1]

IC50: 2.81 nM (mTOR), 0.5 nM (DNA-pK), 5.67 nM (p110γ), 8.58 nM (hVPS34), 18.3 nM (PI4Kβ), 24.5 nM (PI3K-C2β), 28.1 nM (PI3K-C2α)[1]

mTORC1, mTORC2[4]

In Vitro: Torin 2 is subject to further profiling against a panel of lipid kinases with IC_{50}s of 2.81 nM, 0.5 nM, 5.67 nM, 8.58 nM, 18.3 nM, 24.5 nM and 28.1 nM for mTOR, DNA-pK, p110γ, hVPS34, PI4Kβ, PI3K-C2β and PI3K-C2α, respectively. Torin 2 (Torin2) possesses a 250 pM EC_{50} for inhibiting mTOR in cells while maintaining 800-fold cellular selectivity relative to inhibition of PI3K and most other protein kinases[1]. Torin 2 (Torin2) exhibits potent biochemical and cellular activity against PIKK family kinases including ATM (EC_{50} 28 nM), ATR (EC_{50} 35 nM) and DNA-PK (EC_{50} 118 nM). Torin 2 potently inhibits T308 of Akt, a direct substrate of PDK1 and an indirect substrate of PI3Ks, with an EC_{50} of less than 10 nM[2]. Torin-2 can suppress both

mTORC1 and mTORC2[4].

In Vivo: Torin 2 (Torin2) exhibits good bioavailability and exposure and can maintain strong inhibition of mTOR activity in lung and liver to at least six hours after a single dose of 20 mg/kg. Torin 2 is easier to produce on scale and exhibits improved pharmacokinetic properties which should enable it use in vivo experiments[1]. Torin 2 (Torin2) strongly suppresses pS6K(T389) and p4EBP1(T37/46) and partly suppresses pAkt(T308). Treatment of mice with AZD6244 at 25 mg/kg results in a profound inhibition of pERK. Combined administration of Torin 2 (40 mg/kg) and AZD6244 (25 mg/kg) demonstrates strong inhibition of all pharmacodynamics markers[2]. Treatment with Torin 2 (Torin2) and Rapamycin induces IL-6 secretion by astrocytes and may contribute to the reduction of mechanical hypersensitivity after SCI. Torin1 and Torin 2 treatment increases IL-6 mRNA, suggesting that the PI3K-mTOR pathway is a negative regulator of IL-6 expression in astrocytes. Importantly, Torin 2 treatment does not show any cell toxicity, as no signs of cell death are observed by TUNEL assay or by detection of cleaved-caspase 3 by western blotting[3].