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

A-443654

Catalog No: tcsc0405

Available Sizes

Size: 1mg

Size: 5mg

Size: 10mg

Specifications

CAS No:
552325-16-3

Formula:
$C_{24}H_{23}N_5O$

Pathway:
PI3K/Akt/mTOR

Target:
Akt

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Observed Molecular Weight:
397.47

Product Description

A-443654 is a potent small-molecule inhibitor of all three **Akt serine/threonine kinases**, with **K_i** of 160 pM for Akt1.

IC50 & Target: Ki: 160 pM (Akt1)

In Vitro:

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

A-443654 exhibits a K_i of 160 pM, a 30,000-fold improvement in potency versus the initial lead molecule. A-443654 is 40-fold selective for Akt over PKA. A-443654 inhibits Akt1, Akt2, or Akt3 equally within cells. A-443654 reduces the P-GSK3 in a dose-responsive manner in all three cell lines. A-443654 inhibits the proliferation of tumor cells with EC_{50} of 0.1 μM[1]. A-443654-induced morphological changes occur very rapidly (within 2 to 4 h) in both 10A and 10CA1a cells, with 10CA1a cells more sensitive to A-443654 than the 10A cells. A-443654 alone at 2 μM causes the 10CA1a cells, but not the 10A cells, to detach from the plate after 12 h, whereas 1 μM of A-443654 causes 10CA1a cells to detach from the plate after 12 h. FACScan Analysis of rapamycin and A-443654 effects on DNA content in 10A and 10CA1a cells. In contrast, A-443654 at 2 and 5 μM decreases Bcl-2 levels by 30 to 40% in the 10CA1a cells at 8h. The combination of rapamycin with 2 or 5 μM A-443654, however, markedly decreases Bcl-2 protein levels by appr 40 to 50% in the 10A cells and by appr 70% in the 10CA1a cells, respectively[2]. A-443654 demonstrates the greatest selective effect on the mutant cells compared to the WT cells with greater than 3.5 fold relative growth inhibition of the mutant cells[3].

In Vivo: A-443654 (7.5 mg/kg/d, s.c.) inhibits tumor growth in the 3T3-Akt1 flank tumor model. A-443654 (50 mg/kg, s.c.) induces apoptosis in 3T3-Akt1 flank tumors. A-443654 (30 mg/kg, s.c.) leads to increased levels of phosphorylated Akt1 in MiaPaCa-2 tumors [1].