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

CHIR-124

Catalog No: tcsc0482

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Size: 100mg

Specifications

CAS No:
405168-58-3

Formula:
$C_{23}H_{22}ClN_5O$

Pathway:
Protein Tyrosine Kinase/RTK;Protein Tyrosine Kinase/RTK;Cell Cycle/DNA Damage

Target:
FLT3;PDGFR;Checkpoint Kinase (Chk)

Purity / Grade:
>98%

Solubility:
DMSO : 14 mg/mL (33.34 mM; Need ultrasonic and warming)

Observed Molecular Weight:
419.91

Product Description

CHIR-124 is a potent and selective **Chk1** inhibitor with **IC_{50}** of 0.3 nM, and also potently targets **PDGFR** and **FLT3** with **IC_{50}**s of 6.6

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nM and 5.8 nM.

IC50 & Target: IC50: 0.3 nM (Chk1), 5.8 nM (FLT3), 6.6 nM (PDGFR)[1]

In Vitro: CHIR-124 is 500- to 5,000-fold less active against other cell cycle kinases, such as cyclin-dependent kinase 2/cyclin A (0.19 μM), cdc2/cyclin B (0.51 μM), and cyclin-dependent kinase 4/cyclin D (2.1 μM). CHIR-124 (≥0.9 nM) in combination with SN-38 (≥0.42 nM) causes significant synergy or >10% deviation from additivity in human cancer cell lines expressing mutant p53, and these values overlap and fall below the IC_{50}s for SN-38 (1.2×10^{-7} M) and CHIR-124 (2.2×10^{-7} M), respectively. Moreover, CHIR-124 (100 nM) abrogates the SN-38-induced S and G2-M phase cell cycle checkpoints. CHIR-124 (200 nM) leads to a 2.5-fold elevated level of cdc25A above that of the untreated HCT116 $p53^{-/-}$ cells. The down-regulation of cdc25A induced by SN-38 is completely restored by concurrent or sequential treatment with CHIR-124, proving that CHIR-124 inhibits the Chk1-mediated destruction of cdc25A in whole cells[1]. CHIR-124 occupies the ATP-binding site, inhibits Chk1 (IC_{50}, 0.3 nM) 2,000-fold more potently than Chk2 (IC_{50}, 0.7 μM)[2].

In Vivo: CHIR-124 (10 or 20 mg/kg, p.o.) does not have a significant effect on tumor growth when compared with the vehicle-treated group, but it potentiates the growth inhibitory effect of CPT-11 in a human breast carcinoma xenograft model. The potentiation of the tumor growth inhibitory effect of CPT-11 by CHIR-124 is associated with an increase in apoptosis induction in the tumors. CHIR-124 reverses the suppression of phospho-H3 staining induced by CPT-11, indicating abrogation of the G2-M checkpoint by CHIR-124[1].