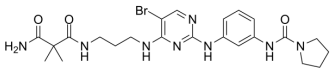
BX-320

Cat. No.:	HY-10515
CAS No.:	702676-93-5
Molecular Formula:	$C_{23}H_{31}BrN_8O_3$
Molecular Weight:	547.45
Target:	PDK-1
Pathway:	PI3K/Akt/mTOR
Storage:	-20°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



BIOLOGICAL ACTIVITY

Description

BX-320 is a selective, ATP-competitive, orally acitive, and direct PDK1 inhibitor with an IC_{50} of 30 nM in a direct kinase assay format. BX-320 also induces apoptosis. Anticancer effect[1].

In Vitro

BX-320 binds to the ATP binding site of PDK1. BX-320 also inhibits Chck1, c-Kit, KDR, PKA, CDK2b/cyclin E, GSK3β, PKC with IC_{50}s of 0.82, 0.89, 1.4, 1.4, 1.5, 4.0, and 5.7 μM, respectively[1].

BX-320 blocks PDK1/Akt signaling in tumor cells and inhibits the anchorage-dependent growth of a variety of tumor cell lines in culture or induces apoptosis[1].

BX-320 inhibits the growth of MDA-468 breast cancer cells (IC_{50}=0.6 μM) and induces apoptosis. BX-320 promotes a 12-fold induction of caspase-3/7 activity after 48 h of treatment (IC_{50}=0.5 μm), indicating a strong proapoptotic response[1].

BX-320 (0.3-10 μM; for 18 hours) greatly reduces the amount of both p-Thr308-Akt and p-Thr386-S6K1[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	MDA-468 breast cancer cells
Concentration:	31.6 nM, 100 nM, 316.22 nM, 1 μM, 3.162 μM, 10 μM, and 31.6 μM
Incubation Time:	72 hours
Result:	Blocked the growth of MDA-468 cells (IC_{50}=0.6 μM), which are PTEN-negative breast tumor cells expressing high levels of activated Akt.

Western Blot Analysis[1]

Cell Line:	PC-3 cells
Concentration:	0, 0.3, 1, 3, 10 μM
Incubation Time:	18 hours
Result:	Reduced the amount of both phospho-Thr^{308}-Akt and phospho-Thr^{386}-S6K1.

In Vivo

BX-320 (oral dosing with 200 mg/kg, twice a day for 21 days) shows efficacy in a blood-borne metastasis model. BX-320 inhibits the growth of LOX melanoma tumors in the lungs of nude mice after injection of tumor cells into the tail vein. BX-320 has efficacy in an in vivo tumor model, which may reflect an inhibition of productive implantation of tumor cells in the lung

or an inhibition of subsequent tumor growth[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Athymic (nu/nu) female mice, 6-8 weeks old[1]
Dosage:	200 mg/kg; dose volume was 10 mL/kg
Administration:	Oral gavage twice daily (12 h apart)
Result:	Significantly inhibited the growth of lung tumors in this model.

REFERENCES

[1]. Richard I Feldman, et al. Novel small molecule inhibitors of 3-phosphoinositide-dependent kinase-1. J Biol Chem. 2005 May 20;280(20):19867-74.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA