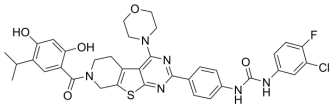
HSP90/mTOR-IN-1

Cat. No.:	HY-151137
Molecular Formula:	$C_{36}H_{34}ClFN_6O_5S$
Molecular Weight:	717.21
Target:	mTOR; HSP; Apoptosis; Autophagy
Pathway:	PI3K/Akt/mTOR; Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Apoptosis; Autophagy
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

HSP90/mTOR-IN-1 is a potent and orally active Hsp90 and mTOR inhibitor with IC_{50} values of 69 nM and 29 nM, respectively. HSP90/mTOR-IN-1 suppresses the proliferation of SW780 cells through the over-activation of the PI3K/AKT/mTOR pathway. HSP90/mTOR-IN-1 induces apoptosis and autophagy via selective Hsp90 and mTOR inhibition. HSP90/mTOR-IN-1 also has considerable in vivo anti-tumor activity. HSP90/mTOR-IN-1 can be used for researching bladder cancer[1].

IC_{50} & Target

mTOR	HSP90
29 nM (IC_{50})	69 nM (IC_{50})

In Vitro

HSP90/mTOR-IN-1 (compound 17o) has antiproliferative activity against J82, T24 and SW780 cells[1].
HSP90/mTOR-IN-1 (0.2 and 0.5 μM; 24 h) induces SW870 apoptosis in a dose-dependent manner, induces the formation of autophagosome[1].
HSP90/mTOR-IN-1 (0.2 and 0.5 μM; 24 h) decreases the expression of several Hsp90 client proteins in SW870[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	J82, T24 and SW780[1]
Concentration:	0-1 μM
Incubation Time:	48 h
Result:	Exhibited antiproliferative activity against J82, T24 and SW780 with IC_{50}s of 0.36 ± 0.03 μM, 0.41 ± 0.06 μM, 0.16 ± 0.03 μM.

Apoptosis Analysis[1]

Cell Line:	SW870
Concentration:	0.2 and 0.5 μM
Incubation Time:	24 h
Result:	Induced apoptosis in a dose-dependent manner (total apoptotic cell percentage was 12.4% and 16.5% at 0.2 and 0.5 μM, respectively).

Cell Autophagy Assay[1]

Cell Line:	SW870 (transfected with GFP-LC3)
Concentration:	0.2 and 0.5 μM
Incubation Time:	24 h
Result:	Induced the formation of autophagosome. The green fluorescent spots were observed to increase in the number and gathered.

Western Blot Analysis[1]

Cell Line:	SW870
Concentration:	0.2 and 0.5 μM
Incubation Time:	24 h
Result:	Significantly decreased the expression of several Hsp90 client proteins, CDK4, C-Raf and CDC2.

In Vivo

HSP90/mTOR-IN-1 (30 mg/kg; PO; for 17 days) exhibits significantly superior tumor growth inhibition in J82 xenograft mice[1].

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

Animal Model:	Balc/c nude mice (6-8 weeks; subcutaneously injected with 1×10^6 cells per 100 μL of J82 cells into the mice's dorsal skin)[1]
Dosage:	30 mg/kg
Administration:	PO; for 17 days
Result:	Exhibited significantly superior tumor growth inhibition, and did not showed remarkable weight decline. Inhibited bladder cancer cell proliferation, induced cell apoptosis, degraded Hsp70, as well as decreased phosphorylation levels of mTOR and increased expression of LC3-II.

REFERENCES

[1]. Pan Z, et al. Design, synthesis, and biological evaluation of novel dual inhibitors of heat shock protein 90/mammalian target of rapamycin (Hsp90/mTOR) against bladder cancer cells. Eur J Med Chem. 2022 Aug 13;242:114674.

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