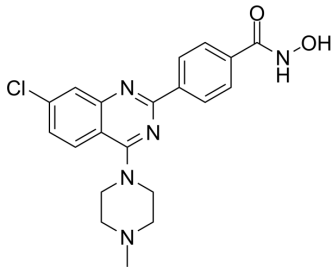
mTOR/HDAC6-IN-1

Cat. No.:	HY-144449
CAS No.:	2986747-52-6
Molecular Formula:	$C_{20}H_{20}ClN_5O_2$
Molecular Weight:	397.86
Target:	mTOR; HDAC; Apoptosis; Autophagy
Pathway:	PI3K/Akt/mTOR; Cell Cycle/DNA Damage; Epigenetics; Apoptosis; Autophagy
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

mTOR/HDAC6-IN-1 is a potent mTOR and HDAC6 dual inhibitor (IC_{50}s of 133.7 nM and 56 nM for mTOR and HDAC6, respectively). mTOR/HDAC6-IN-1 can induce significant autophagy, apoptosis and suppress migration. mTOR/HDAC6-IN-1 has potential to research Triple-negative breast cancer (TNBC)[1].

IC_{50} & Target

mTOR	HDAC6
133.7 nM (IC_{50})	56 nM (IC_{50})

In Vitro

mTOR/HDAC6-IN-1 (compound 10g) (0-100 μM; 48 hours) has a medium anti-proliferation activity with IC_{50} of 8.4 μM, 10.6 μM and 14.3 μM in MDA-MB-231, MDA-MB-436 and MDA-MB-468 cells at 48h[1].

mTOR/HDAC6-IN-1 (10 μM; 6 hours) can significantly improve the thermal stability of HDAC6 in MDA-MB-231 cells, which indicates that mTOR/HDAC6-IN-1 has a selective inhibitory effect on HDAC6[1].

mTOR/HDAC6-IN-1 (2.5, 5, 10 μM; 2 weeks) inhibits MDA-MB-231 cells form the clone[1].

mTOR/HDAC6-IN-1 (2.5, 5, 10 μM; 48 hours) induces obvious autophagy with the accumulation of LC3 puncta in MDA-MB-231 cells[1].

mTOR/HDAC6-IN-1 (5, 10, 20 μM) induces significant MDA-MB-231 apoptosis in a dose-dependent manner, also up-regulates the expression of Bax, down-regulates bcl-2, and promotes the cleavage of PARP and apoptotic executive protein caspase8 and caspase3[1].

mTOR/HDAC6-IN-1 (5, 10, 20 μM; 48 hours) inhibited MDA-MB-231 cells migration in a dose-dependent manner, and decreases the expression of MMP-2 as well as increases the expression of E-cadherin[1].

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

Cell Viability Assay

Cell Line:	MDA-MB-231, MDA-MB-436 and MDA-MB-468 cells[1]
Concentration:	0, 20, 40, 60, 80 and 100 μM
Incubation Time:	48 hours
Result:	Had a medium anti-proliferation activity with IC_{50} of 8.4 μM, 10.6 μM and 14.3 μM in MDA-MB-231, MDA-MB-436 and MDA-MB-468 cells at 48h.

Apoptosis Analysis

Cell Line:	MDA-MB-231[1]

Concentration:	5, 10, 20 μM
Incubation Time:	
Result:	Induced significant MDA-MB-231 apoptosis in a dose-dependent manner, also up-regulates the expression of Bax, down-regulates bcl-2, and promotes the cleavage of PARP and apoptotic executive protein caspase8 and caspase3.

Cell Autophagy Assay

Cell Line:	MDA-MB-231[1]
Concentration:	2.5, 5, 10 μM
Incubation Time:	48 hours
Result:	Induced obvious autophagy with the accumulation of LC3 puncta in MDA-MB-231 cells

REFERENCES

[1]. Yao D, et al. Design, synthesis and biological evaluation of dual mTOR/HDAC6 inhibitors in MDA-MB-231 cells. Bioorg Med Chem Lett. 2021;47:128204.

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