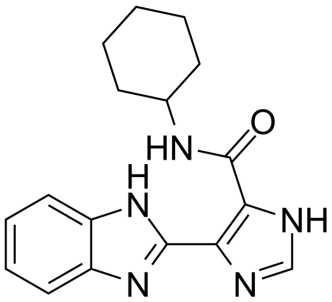
Autophagy-IN-2

Cat. No.:	HY-150757
CAS No.:	2755454-90-9
Molecular Formula:	$C_{17}H_{19}N_5O$
Molecular Weight:	309.37
Target:	Autophagy; Apoptosis
Pathway:	Autophagy; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Autophagy-IN-2 (Compound 7h) is an autophagic flux inhibitor. Autophagy-IN-2 induces cancer cell apoptosis and can be used for triple-negative breast cancer research[1].

In Vitro

Autophagy-IN-2 (Compound 7h) (0-200 μM, 48 h) shows anti-viability activities against various cancer cells[1].
Autophagy-IN-2 (0-20 μM, 0-48 h) suppresses autophagic flux and impairs DNA repair through down-regulating chromatin ubiquitination in a p62-dependent manner[1].
Autophagy-IN-2 (0-20 μM, 48 h) induces cell cycle arrest at S-phase and mitochondria-dependent intrinsic apoptosis[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	MDA-MB-231, MDA-MB-468, SCC25, HSC-3, HCT116, SW620, PC3, Aspc, PNAC, U87, U251 and LN229
Concentration:	0-200 μM
Incubation Time:	48 h
Result:	Showed anti-viability activities with IC_{50} values of 8.31 ± 1.05, 6.03 ± 0.82, 18.64 ± 2.92, 24.03 ± 3.75, 35.53 ± 7.52, 25.43 ± 2.42, 17.48 ± 1.27, 26.89 ± 5.23, 19.25 ± 3.96, 15.37 ± 1.78, 12.92 ± 2.38 and 61.35 ± 11.61 μM against MDA-MB-231, MDA-MB-468, SCC25, HSC-3, HCT116, SW620, PC3, Aspc, PNAC, U87, U251 and LN229 cells, respectively.

Western Blot Analysis[1]

Cell Line:	MDA-MB-231 and MDA-MB-468
Concentration:	5, 10 and 20 μM
Incubation Time:	0, 6, 12, 24, 36 and 48 h
Result:	Significantly induced to LC3B-II in a dose - and time-dependent manner, resulted in a p62 accumulation in TNBC cells, increased γH2AX in a dose and time-dependent manner, activated the phosphorylation of ATM, NBS1 and SMC1, increased p62 in the nucleus and cytoplasm in a dose-dependent manner, and significantly reduced DNA-damage-induced formation of H2A poly-ubiquitin chains.

	Decreased the cellular levels of Cyclin A, Cyclin B, CDK1 and CDK2, increased P21 and the phosphorylation levels of CHK1 (Serine 345) and CHK2 (Threonine 68), and increased cytochrome c, cleaved caspase-3, cleaved caspase-9 and cleaved PAPR in a dose-dependent manner.

Cell Cycle Analysis[1]

Cell Line:	MDA-MB-231 and MDA-MB-468
Concentration:	5, 10 and 20 μM
Incubation Time:	48 h
Result:	Induced cell cycle arrest at S-phase.

Apoptosis Analysis[1]

Cell Line:	MDA-MB-231 and MDA-MB-468
Concentration:	5, 10 and 20 μM
Incubation Time:	48 h
Result:	Dramatically induced cell apoptosis in TNBC cells and obviously increase the proportion of late-phase apoptosis in a dose-dependent manner.

In Vivo

Autophagy-IN-2 (Compound 7h) (5 and 15 mg/kg; i.p.; every 3 days for 3 weeks) suppresses tumor growth in a dose-dependent manner[1].

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

Animal Model:	Six-week-old female NOD/SCID mice, MDA-MB-231 xenograft[1]
Dosage:	5 mg/kg, 15 mg/kg
Administration:	Intraperitoneal injection, every 3 days for 3 weeks
Result:	Suppressed human TNBC tumor growth in a dose-dependent manner and resulted in a concentration-dependent upregulation of LC3B-II, p62, γH2AX and PARP.

REFERENCES

[1]. Yang DL, et al. Discovery of fused benzimidazole-imidazole autophagic flux inhibitors for treatment of triple-negative breast cancer. Eur J Med Chem. 2022 Jun 26;240:114565.

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