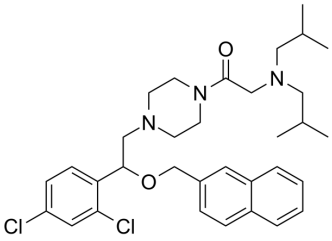
LYN-1604

Cat. No.:	HY-101923
CAS No.:	2088939-99-3
Molecular Formula:	$C_{33}H_{43}Cl_2N_3O_2$
Molecular Weight:	584.62
Target:	ULK; Autophagy; Apoptosis
Pathway:	Autophagy; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (171.05 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7105 mL	8.5526 mL	17.1051 mL
	5 mM	0.3421 mL	1.7105 mL	3.4210 mL
	10 mM	0.1711 mL	0.8553 mL	1.7105 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

LYN-1604 is a potent UNC-51-like kinase 1 (ULK1) activator (EC_{50}=18.94 nM) for the research of triple negative breast cancer (TNBC)[1].

IC_{50} & Target

ULK1
18.94 nM (EC50)

In Vitro

LYN-1604 is a potential ULK1 agonist (enzymatic activity=195.7% at 100 nM and IC_{50}=1.66 μM against MDA-MB-231 cells) [1].
LYN-1604 binds to wild-type ULK1 with a binding affinity in the nanomole range (K_D=291.4 nM) [1].
LYN-1604 (0.5, 1.0 and 2.0 μM) induces cell death via the ULK complex in MDA-MB-231 cells[1].
LYN-1604 (0.5-2 μM, 24 hours) induces remarkable up-regulation of Beclin-1 and degradation of p62, as well as transformation of LC3-I to LC3-II in MDA-MB-231 cells[1].
LYN-1604 induces ATG5-dependent autophagy via the ULK complex[1].
LYN-1604 can also increase cleavage of caspase3 and induce 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 cells
Concentration:	0.5, 1.0 and 2.0 μM
Incubation Time:	
Result:	Induced cell death. Autophagy ratio was increased in a dose-dependent manner.

Western Blot Analysis[1]

Cell Line:	MDA-MB-231 cells
Concentration:	0, 0.5, 1, and 2 μM
Incubation Time:	24 hours
Result:	Induced remarkable up-regulation of Beclin-1 and degradation of p62, as well as transformation of LC3-I to LC3-II.

In Vivo

LYN-1604 (low dose, 25 mg/kg; median dose, 50 mg/kg; high dose, 100 mg/kg; intragastric administration once a day for 14 days) inhibits the growth of xenograft TNBC by targeting ULK1-modulated cell death[1].

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

Animal Model:	24 female nude mice (BALB/c, 6-8 weeks, 20-22 g)[1]
Dosage:	Low dose, 25 mg/kg; median dose, 50 mg/kg; high dose, 100 mg/kg
Administration:	Intragastric administration; once a day for 14 days
Result:	Significantly inhibited the growth of xenograft MDA-MB-231 cells. The body weights of mice were stable. By the end of the experiment, the liver and spleen weight indexes of mice were slightly increased in parts of the groups, while the kidney weight index was not affected in all dose groups.

CUSTOMER VALIDATION

- Oxid Med Cell Longev. 15 Nov 2021.
- Biochem J. 2019 Mar 12;476(5):875-887.

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REFERENCES

[1]. Zhang L, et al. Discovery of a small molecule targeting ULK1-modulated cell death of triple negative breast cancer in vitro and in vivo. Chem Sci. 2017 Apr 1;8(4):2687-2701.

Caution: Product has not been fully validated for medical applications. For research use only.

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