

## LYN-1604 hydrochloride

## Chemical Properties

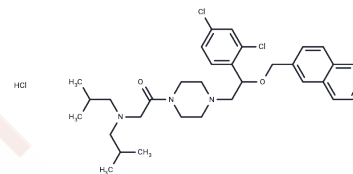
CAS No. : 2216753-86-3

Formula: C33H44Cl3N3O2

Molecular Weight: 621.08

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	LYN-1604 hydrochloride, a powerful activator of UNC-51-like kinase 1 (ULK1) with an EC50 value of 18.94 nM, has significant implications in the study of triple-negative breast cancer (TNBC).
Targets(IC50)	Apoptosis,Others,Autophagy
In vitro	LYN-1604, identified as a potential ULK1 agonist, demonstrates enhanced enzymatic activity (195.7% at 100 nM) and exhibits a half-maximal inhibitory concentration (IC50) of 1.66 μM against MDA-MB-231 cells. It binds to the wild-type ULK1 with a nanomolar affinity (KD = 291.4 nM). At varying concentrations (0.5, 1.0, and 2.0 μM), LYN-1604 triggers cell death through the ULK complex in MDA-MB-231 cells and induces dose-dependent autophagy, evidenced by a notable increase in Beclin-1 expression, p62 degradation, and conversion of LC3-I to LC3-II. Additionally, it promotes ATG5-dependent autophagy via the ULK complex and facilitates apoptosis through increased caspase-3 cleavage. Cell viability assays and Western blot analyses further confirm these effects, showing dose-dependent induced cell death and autophagy, alongside the up-regulation of Beclin-1, degradation of p62, and LC3-I to LC3-II transformation, after a 24-hour incubation with LYN-1604.
In vivo	LYN-1604, administered intragastrically at various doses (low dose, 25 mg/kg; median dose, 50 mg/kg; high dose, 100 mg/kg) once daily for 14 days, significantly inhibits the growth of xenograft triple-negative breast cancer (TNBC) by targeting ULK1-modulated cell death, as demonstrated in an animal model using 24 female nude mice (BALB/c, 6-8 weeks, 20-22 g). The study reports no change in the body weights of mice across all doses, indicating a lack of systemic toxicity. However, a slight increase in liver and spleen weight indexes was observed in some groups, while the kidney weight index remained unaffected across all dose groups.

### Preparing Stock Solutions

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	1mg	5mg	10mg
1 mM	1.6101 mL	8.0505 mL	16.101 mL
5 mM	0.322 mL	1.6101 mL	3.2202 mL
10 mM	0.161 mL	0.805 mL	1.6101 mL
50 mM	0.0322 mL	0.161 mL	0.322 mL

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Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

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.

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