Print Date: Jan 23rd 2023

Certificate of Analysis

www.tocris.com

Product Name: **LYN 1604 dihydrochloride** **Catalog No.: 6617** **Batch No.: 1**

CAS Number: 2310109-38-5

IUPAC Name: 2-[Bis(2-methylpropyl)amino]-1-[4-[2-(2,4-dichlorophenyl)-2-(2-naphthalenylmethoxy)ethyl]-1-piperazinyl]ethanone dihydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{33}H_{43}Cl_2N_3O_2.2HCl.2½H_2O$

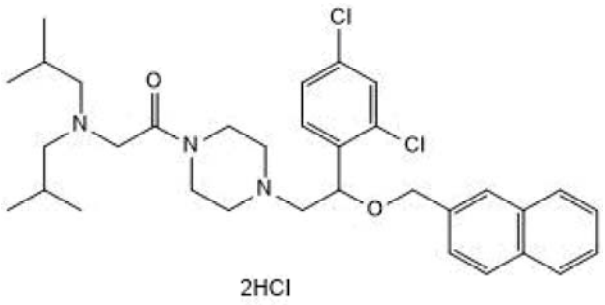
Batch Molecular Weight: 702.58

Physical Appearance: White solid

Solubility: ethanol to 10 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.1% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	56.41	7.17	5.98
Found	55.74	7.12	5.93

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

LYN 1604 dihydrochloride is a potent UNC-51-like kinase 1 (ULK1) agonist (EC_{50} = 18.94 nM). In MDA-MB-231 cells, LYN 1604 induces upregulation of Beclin-1, LC3-I and LC3-II, as well as degradation of p62. LYN 1604 induces cell death (IC_{50} = 1.66 µM) via the ULK complex involving both autophagy and apoptosis pathway effectors (e.g. ATF3, RAD21, and caspase-3); this effect is reversible by the autophagy inhibitor 3-methyladenine (Cat. No. 3977). LYN 1604 inhibits tumor growth in a mouse xenograft model, decreases bone loss in a mouse model of osteoporosis and reduces the formation of TRAP-positive multinucleated cells. Please see product specific page on www.tocris.com for full description.

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Minimum Purity: ≥98%

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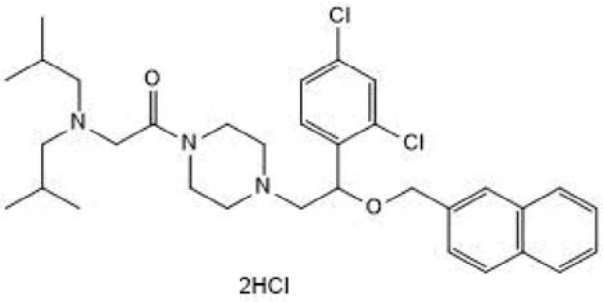

Storage: Store at -20°C

Solubility & Usage Info:

ethanol to 10 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Zhang *et al* (2021) ULK1 suppresses osteoclast differentiation and bone resorption via inhibiting Syk-JNK through DOK3. Oxid.Med.Cell Longev. ***2021*** 2896674. PMID: 34820053.

Zhang *et al* (2018) UNC-51-like Kinase 1: from an autophagic initiator to multifunctional drug target. J.Med.Chem. ***61*** 6491. PMID: 29509411.

Zhang *et al* (2017) Discovery of a small molecule targeting ULK1-modulated cell death of triple negative breast cancer *in vitro* and *in vivo*. Chem.Sci. ***8*** 2687. PMID: 28553505.