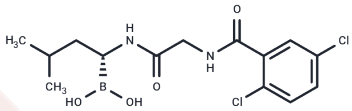
Data Sheet (Cat.No.T2122)

TargetMol

Ixazomib

Chemical Properties



CAS No. : 1072833-77-2

Formula: C14H19BCl2N2O4

Molecular Weight: 361.03

Appearance: no data available

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

Biological Description

Description	Ixazomib (MLN2238) , a second generation, boron-containing peptide proteasome inhibitor (PI), inhibits the chymotrypsin-like proteolytic (β5) site of the 20S proteasome (IC50/Ki: 3.4/0.93 nM, in cell-free assays), also inhibits the caspase-like (β1) and trypsin-like (β2) proteolytic sites (IC50: 31/3500 nM).
Targets(IC50)	Proteasome,Caspase,Autophagy
In vitro	MLN2238 is a biologically active metabolite of MLN9708.MLN2238 and Bortezomib are both time-dependent reversible inhibitors of the proteasome, but the isolated half-life of the proteasomal effect of MLN2238 (18 min) is 6-fold faster compared with that of Bortezomib (110 min).The oncological efficacy of MLN2238 is higher than that of Bortezomib. MLN2238 is a nitrogen-terminally capped dipeptide leucine borate that inhibits the hydrolysis site of chymotrypsin-like enzymes in the 20S proteasome (IC50/Ki: 3.4/0.93 nM). At higher concentrations, MLN2238 also inhibited the caspase-like hydrolysis site (IC50: 31 nM) and the trypsin-like hydrolysis site (IC50: 3.5 μM) of the 20S proteasome.MLN2238 inhibited Calu-6 cells (IC50: 9.7 nM).
In vivo	MLN2238 is a biologically active metabolite of MLN9708.MLN2238 and Bortezomib are both time-dependent reversible inhibitors of the proteasome, but the isolated half-life of the proteasomal effect of MLN2238 (18 min) is 6-fold faster compared with that of Bortezomib (110 min).The oncological efficacy of MLN2238 is higher than that of Bortezomib. MLN2238 is a nitrogen-terminally capped dipeptide leucine borate that inhibits the hydrolysis site of chymotrypsin-like enzymes in the 20S proteasome (IC50/Ki: 3.4/0.93 nM). At higher concentrations, MLN2238 also inhibited the caspase-like hydrolysis site (IC50: 31 nM) and the trypsin-like hydrolysis site (IC50: 3.5 μM) of the 20S proteasome.MLN2238 inhibited Calu-6 cells (IC50: 9.7 nM).
Kinase Assay	Kinase assay : Calu-6 cells are cultured in MEM containing 10% fetal bovine serum and 1% penicillin/streptomycin and plated 1 day before the start of the experiment at 1 × 104 cells per well in a 384-well plate. Proteasome activity is assessed by monitoring hydrolysis of the chymotrypsin-like substrate Suc-LLVY-aminoluciferin in the presence of luciferase using the Proteasome-Glo assay reagents according to the manufacturer's instructions. Luminescence is measured using a LEADseeker instrument.
Cell Research	Calu-6 cells are cultured in MEM containing 10% FBS and 1% penicillin/streptomycin and plated 1 day before the start of the experiment at 1 × 104 cells per well in a 384-well plate. For IC50 determinations, cells are treated with varying concentrations of Bortezomib or MLN2238 in DMSO (0.5% final, v/v) for 1 hour at 37 °C. For reversibility

experiments, cells are treated with either 1 μM Bortezomib or MLN2238 for 30 minutes at 37 °C and then washed thrice in medium to remove the Bortezomib or MLN2238. Cells are incubated for an additional 4 hours at 37 °C, after which the medium is removed and replaced with fresh medium. (Only for Reference)

Solubility Information

Solubility	DMSO: 55 mg/mL (152.34 mM),Sonication is recommended. Ethanol: 9 mg/mL (24.93 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.7699 mL	13.8493 mL	27.6985 mL
5 mM	0.554 mL	2.7699 mL	5.5397 mL
10 mM	0.277 mL	1.3849 mL	2.7699 mL
50 mM	0.0554 mL	0.277 mL	0.554 mL

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.

Reference

Kupperman E, et al. Cancer Res, 2010, 70(5), 1970-80
Chen X, Chen Y, Ou Y, et al. Bortezomib inhibits NLRP3 inflammasome activation and NF-κB pathway to reduce psoriatic inflammation. Biochemical Pharmacology. 2022, 206: 115326.
Lee EC, et al. Clin Cancer Res, 2011, 17(23), 7313-23.