Product Data Sheet

Product Name: ML241
Cat. No.: GC11749

Chemical Properties

Cas. No.	1346528-06-0		
Chemical Name	2-(2H-benzo[b][1,4]oxazin-4(3H)-yl)-N-benzyl-5,6,7,8-tetrahydroquinazolin-4-amine		
SMILES	C1(CNC2=NC(N3CCOC4=CC=CC=C43)=NC5=C2CCCC5)=CC=CC=C1		
Formula	$C_{23}H_{24}N_4O$	M.Wt	372.46
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	ML241		

Background

IC50: 100 nM

ML241 is identified as a potent and selective inhibitors of p97 ATPase.

The p97 AAA (ATPase associated with diverse cellular activities), also called VCP (valosin-containing protein), is an critical therapeutic target for cancer and neurodegenerative diseases. p97 plays important roles in a broad array of cellular processes, such as degradation of misfolded membrane and secretory proteins, homotypic fusion of endoplasmic reticulum and Golgi membranes, membrane transport, Golgi membrane reassembly, cell division, regulation of myofibril assembly, regulation of protein aggregates, as well as autophagosome maturation.

In vitro: Previous study showed that both ML241 and its analog ML240 were able to inhibit p97 ATPase with IC(50) values of around 100 nM. Both ML241 and ML240 could inhibit degradation of a p97-dependent but not a p97-independent proteasome

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substrate in a dual-reporter cell line. In addition, both ML241 and ML240 could impair the endoplasmic-reticulum-associated degradation (ERAD) pathway. Unexpectedly, ML240 could potently stimulate the accumulation of LC3-II within minutes, inhibit cancer cell growth, and mobilize the executioner caspases 3 and 7 rapidly, whereas ML241 could not [1].

In vivo: Currently, there is no animal in vivo data published.

Clinical trial: Up to now, ML241 is still in the preclinical development stage.

Reference:
[1] Chou TF, et al. Structure-activity relationship study reveals ML240 and ML241 as potent and selective inhibitors of p97 ATPase. ChemMedChem. 2013 Feb;8(2):297-312.