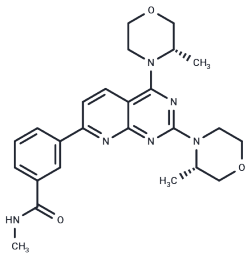
Data Sheet (Cat.No.T1961)

TargetMol

Vistusertib

Chemical Properties



CAS No. : 1009298-59-2

Formula: C25H30N6O3

Molecular Weight: 462.54

Storage: Store at low temperature
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	Vistusertib (AZD2014) is an orally bioavailable inhibitor of the mammalian target of rapamycin (mTOR) with potential antineoplastic activity.
Targets(IC50)	Apoptosis,Akt,Autophagy,mTOR,PI3K,S6 Kinase
In vitro	In the human ER+ breast cancer xenograft model, AZD2014 inhibits tumor growth by regulating the substrates of mTORC1 and mTORC2.
In vivo	In hormone therapy-responsive ER+ breast cancer cell lines, AZD2014 inhibits cellular growth and promotes apoptosis. It effectively suppresses the biomarkers of mTORC2, namely pAKTSer473 and pNDRG1Thr346.
Kinase Assay	Recombinant truncated FLAG-tagged mTOR expressed in HEK 293 cells is used in biochemical assays, together with a biotinylated p70S6K peptide substrate. Streptavidin donor and protein A acceptor beads are used to assemble the capture complex for generation of the assay signal. The activity of the lipid kinases, PI3K alpha, beta, delta, and gamma are measured using recombinant proteins and the lipid PIP2 as substrate. Assays for ATM and DNA-PK activity are performed. The mTOR cellular activity is measured in MDAMB468 cells, using an Acumen laser scanning cytometer to analyze the levels of phosphorylation of S6 (Ser235/236) and AKT (Ser473)[1].
Cell Research	AZD2014 is prepared in DMSO (10 mM) and stored under nitrogen, and then diluted with appropriate media before use[1]. Cells are plated in 96-well plates for the indicated time. For CellTiterGlo assays: CellTiterGlo is mixed with the cells. Cells are normalized to day 0 control and net growth is determined using the following formula: ((x?y)/(z?y)) =net growth, where x=reading of treated sample at end of study, y=average reading on day 0, and z=reading of DMSO-treated sample at end of study. The concentration of DMSO does not exceed 0.03% for any experiment. For MTS assays: adherent cell lines are grown in 96-well plates. MTS reagent is added on day 0 and on day 3 post-AZD2014 addition. Suspension lines are assayed using the Alamar Blue reagent, 72 hours after AZD2014 addition[1].

Solubility Information

Solubility	DMSO: 50 mg/mL (108.1 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.32 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.162 mL	10.8099 mL	21.6198 mL
5 mM	0.4324 mL	2.162 mL	4.324 mL
10 mM	0.2162 mL	1.081 mL	2.162 mL
50 mM	0.0432 mL	0.2162 mL	0.4324 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.

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

Sylvie M, et al, AACR Annual Meeting, 2012, Abst 917.
He W, Liu S, Wei W, et al.mTOR inhibition by AZD2014 alleviates BCR:: ABL1 independent imatinib resistance through enhancing autophagy in CML resistant cells.American Journal of Cancer Research.2024, 14(6): 2770.
Guichard SM, et al. Mol Cancer Ther. 2015, 14(11):2508-18.