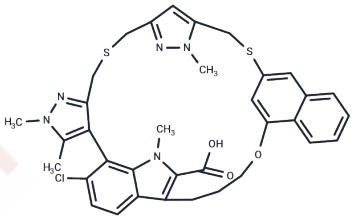
Data Sheet (Cat.No.T10434)

TargetMol

AZD-5991

Chemical Properties



CAS No. : 2143061-81-6

Formula: C35H34ClN5O3S2

Molecular Weight: 672.26

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	AZD-5991, an antitumor compound, is a highly selective, potent and direct MCL-1 inhibitor that induces rapid apoptosis in cancer cells by activating the Bak-dependent mitochondrial apoptotic pathway, used for multiple myeloma, acute myeloid leukemia, and triple-negative inflammatory breast cancer.
Targets(IC50)	Bcl-2 Family
In vitro	**Methods**: A panel of MCL cell lines were treated with AZD-5991 (10-1000 nM, 24 hours) and cell viability was measured using the CellTiter-Glo cell viability assay (Promega). **Results**: MCL cell lines that were sensitive or resistant to ibrutinib or venetoclax were sensitive to AZD-5991 (IC50 values ranged from 69.3 to 523.5 nM), with Mino showing particularly high sensitivity to AZD-5991. [2]
In vivo	**Methods**: MOLP-8 tumor model mice were treated with AZD-5991 (10-100 mg/kg, intravenous injection) and the efficacy of AZD-5991 on MOLP-8 tumor growth in vivo was evaluated. **Results**: AZD-5991 produced dose-dependent antitumor effects ranging from tumor growth inhibition (TGI) to tumor regression (TR). After ten days of treatment, AZD-5991 showed a TGI of 52% and 93% at 10 and 30 mg/kg, respectively ($p < 0.0001$). [1]

Solubility Information

Solubility	H2O: < 0.1 mg/mL (insoluble) DMSO: 150 mg/mL (223.13 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (14.88 mM),Solution. 10% DMSO+90% Saline: < 10 mg/mL (14.88 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. *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	1.4875 mL	7.4376 mL	14.8752 mL
5 mM	0.2975 mL	1.4875 mL	2.975 mL
10 mM	0.1488 mL	0.7438 mL	1.4875 mL
50 mM	0.0298 mL	0.1488 mL	0.2975 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

Tron AE, et al. Discovery of Mcl-1-specific inhibitor AZD5991 and preclinical activity in multiple myeloma and acute myeloid leukemia. Nat Commun. 2018 Dec 17;9(1):5341.
Li Y,et al. Potentiation of apoptosis in drug-resistant mantle cell lymphoma cells by MCL-1 inhibitor involves downregulation of inhibitor of apoptosis proteins. Cell Death Dis. 2023 Nov 2;14(11):714.