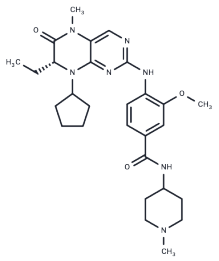
Data Sheet (Cat.No.T6173)

TargetMol

BI 2536

Chemical Properties



CAS No. : 755038-02-9

Formula: C28H39N7O3

Molecular Weight: 521.65

Storage: 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	BI2536 is an effective Plk1 inhibitor (IC50: 0.83 nM). It has 4- and 11-fold greater selectivity than Plk2 and Plk3.
Targets(IC50)	Apoptosis,Epigenetic Reader Domain,PLK
In vitro	BI 2536 inhibits Plk1 enzyme activity at low nanomolar concentrations. The compound potently causes a mitotic arrest and induces apoptosis in human cancer cell lines of diverse tissue origin and oncogenome signature [1]. On treatment with nanomolar doses of BI 2536, ATC cells progressed normally through S phase but died thereafter, directly from mitotic arrest. Nontransformed thyroid cells were 3.2- to 18.4-fold less susceptible to BI 2536-induced cell cycle effects compared with ATC cells [2].
In vivo	BI 2536 inhibits growth of human tumor xenografts in nude mice and induces regression of large tumors with well-tolerated intravenous dose regimens. In treated tumors, cells arrest in prometaphase, accumulate phosphohistone H3, and contain aberrant mitotic spindles [1].
Kinase Assay	Recombinant human Plk1 (residues 1-603) was expressed as N-terminal, GST-tagged fusion protein with a baculoviral expression system and purified by affinity chromatography with Glutathione-agarose. Enzyme activity assays for Plk1, Plk2, and Plk3 were performed in the presence of serially diluted inhibitor with 20 ng of recombinant kinase and 10 μg casein from bovine milk as the substrate. Kinase reactions were performed in a final volume of 60 μl for 45 min at 30C (15 mM MgCl2, 25 mM MOPS [pH 7.0], 1 mM DTT, 1% DMSO, 7.5 μM ATP, 0.3 μCi g-P33-ATP). Reactions were terminated by the addition of 125 μl of ice-cold 5% TCA. After transfer of the precipitates to MultiScreen mixed ester cellulose filter plates, plates were washed with 1% TCA and quantified radiometrically. Dose-response curves were used for calculating IC50 values [1].
Cell Research	Cell proliferation assays were performed by incubation in the presence of various concentrations of BI 2536 for 72 hr, and cell growth was assessed by the measurement of Alamar Blue dye conversion in a fluorescence spectrophotometer. Effective concentrations at which cellular growth was inhibited by 50% (EC50) were extrapolated from the dose-response curve fit [1].
Animal Research	Female BomTac:NMRI-Foxn1nu mice were grafted subcutaneously with HCT 116 colon-carcinoma, NCI-H460, or A549 lung carcinoma cells by subcutaneous injection, respectively, of 2 × 10^6, 1 × 10^6, and 1 × 10^7 cells into the flank of each mouse. When

Animal Research	tumors reached a volume of approximately 50 mm^3, animals were pair-matched into treatment and control groups of ten mice each. In regression experiments, treatment was not initiated until the mean tumor volume reached 500 mm^3. BI 2536 was formulated in hydrochloric acid (0.1 N), diluted with 0.9% NaCl, and injected intravenously into the tail vein at the indicated dose and schedule. The administration volume was 10 ml per kg body weight. Tumor volumes were determined three times a week with a caliper. The results were converted to tumor volume (mm^3) by the following formula: length × width2 × π/6. The weight of the mice was determined as an indicator of tolerability on the same days. For statistical analysis, the treatment group was compared with the vehicle control group in a one-sided (decreasing) exact Wilcoxon test [1].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 93 mg/mL (178.28 mM),Sonication is recommended. DMSO: 13.33 mg/mL (25.55 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: 2.5 mg/mL (4.79 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	1.917 mL	9.585 mL	19.1699 mL
5 mM	0.3834 mL	1.917 mL	3.834 mL
10 mM	0.1917 mL	0.9585 mL	1.917 mL
50 mM	0.0383 mL	0.1917 mL	0.3834 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

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