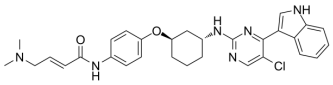
BSJ-01-175

Cat. No.:	HY-145072
CAS No.:	2227392-55-2
Molecular Formula:	$C_{30}H_{33}ClN_6O_2$
Molecular Weight:	545.08
Target:	CDK
Pathway:	Cell Cycle/DNA Damage
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (183.46 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8346 mL	9.1730 mL	18.3459 mL
	5 mM	0.3669 mL	1.8346 mL	3.6692 mL
	10 mM	0.1835 mL	0.9173 mL	1.8346 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.5 mg/mL (4.59 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: 2.5 mg/mL (4.59 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

BSJ-01-175 is a potent and selective CDK12/13 covalent inhibitor. BSJ-01-175 demonstrates exquisite selectivity, potent inhibition of RNA polymerase II phosphorylation, and downregulation of CDK12-targeted genes in cancer cells[1].

IC_{50} & Target		
	CDK12	CDK13

In Vitro

BSJ-01–175 (0-10 μM; 72 hours) causes a 5-fold increase in cell viability compared to the wild type (WT), indicating strong dependence on covalent bond formation with Cys1039[1].
BSJ-01–175 (0-10 μM; 72 hours) slightly decreases the activity of TC71 Ewing sarcoma cells compared to THZ531[1].
BSJ-01–175 (0-5 μM) specifically targets CDK12/13 and suppresses the transcription of BRAC1 and BRAC2[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	Kelly wild type or CDK12C1039F cells
Concentration:	0-10 μM
Incubation Time:	72 hours
Result:	Observed a 5-fold increase in cell viability compared to the wild type (WT), indicating strong dependence on covalent bond formation with Cys1039.

Cell Proliferation Assay[1]

Cell Line:	TC71 Ewing sarcoma cells
Concentration:	0-10 μM
Incubation Time:	72 hours
Result:	Slightly decreased the activity compared to THZ531.

In Vivo

BSJ-01–175 (10 mg/kg; i.p.; daily for 3 weeks) leads to a significant suppression of tumor growth throughout 3 weeks of drug treatment period[1].

Assessment of Pharmacokinetics (PK) profile of BSJ-01-175 in mouse[1].

Route	Dose (mg/kg)	T_{max} (h)	C_{max} (ng/mL)	AUC_{last} (h•ng/mL)	$T_{1/2}$ (h)	CL (mL/min/kg)	V_{SS} (L/kg)	F (%)
IV	3		1511	1832	2.2	24.9	3.9	
PO	10	2	272	1043				17

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Animal Model:	Female nude mice (BALB/c, 7-8 weeks) bearing TC71 Ewing sarcoma cells[1]
Dosage:	10 mg/kg
Administration:	i.p.; daily for 3 weeks
Result:	Led to a significant suppression of tumor growth throughout 3 weeks of drug treatment period.

REFERENCES

[1]. Jiang B, et al. Structure-activity relationship study of THZ531 derivatives enables the discovery of BSJ-01-175 as a dual CDK12/13 covalent inhibitor with efficacy in Ewing sarcoma. Eur J Med Chem. 2021;221:113481.

Caution: Product has not been fully validated for medical applications. For research use only.

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