PR-619

Cat. No.: HY-13814

CAS No.: 2645-32-1

Molecular Formula: $C_7H_5N_5S_2$

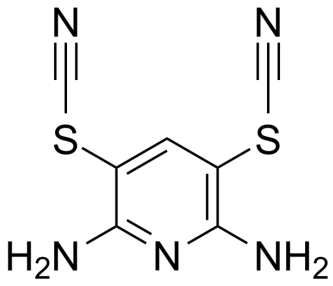
Molecular Weight: 223.28

Target: Deubiquitinase; Autophagy; Apoptosis

Pathway: Cell Cycle/DNA Damage; Autophagy; Apoptosis

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 : ≥ 21 mg/mL (94.05 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.4787 mL	22.3934 mL	44.7868 mL
	5 mM	0.8957 mL	4.4787 mL	8.9574 mL
	10 mM	0.4479 mL	2.2393 mL	4.4787 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 (11.20 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

PR-619 is a broad-range and reversible DUB inhibitor with EC_{50}s of 3.93, 4.9, 6.86, 7.2, and 8.61 μM for USP4, USP8, USP7, USP2, and USP5, respectively. PR-619 induces ER Stress and ER-Stress related apoptosis[1][2][3][4].

IC_{50} & Target

EC50: 3.93 μM (USP4), 4.9 μM (USP8), 6.86 μM (USP7), 7.2 μM (USP2), 8.61 μM (USP5)[1]

In Vitro

PR-619, a deubiquitylase inhibitor, prevents degradation, indicating KCa3.1 is targeted for degradation by ubiquitylation[2].
PR-619 affects the microtubule network and led to the accumulation of small punctuated tau deposits around. PR-619 causes the dephosphorylation of tau[3].
PR-619 (7-12.5 μM) causes an increase in the abundance of ubiquitinated proteins within 24 h. PR-619 leads to the induction of heat shock proteins and to an increase of ubiquitinated proteins[3].
PR-619 (9 μM) affects the organization of the microtubule network in OLN-t40 cells[3].

PR-619 (5, 7.5, and 10 μM) induces ER Stress and ER-Stress related apoptosis on T24 and BFTC-905 cells. PR-619 induces polyubiquitination, Bcl-2 downregulation, and concurrent PARP cleavage in a dose-dependent manner. PR-619 induces G0/G1 arrest in UC cells[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	OLN-t40 cells.
Concentration:	0-10 μM.
Incubation Time:	24 hours.
Result:	Exerted concentration-dependent cytotoxicity in a very narrow concentration range of 7-10 μM.

In Vivo

PR-619 (10 mg/kg/day) enhances the antitumor effect of Cisplatin on a Cisplatin-Naïve and Cisplatin-resistant UC Xenograft of nude mice[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Nude mice[4].
Dosage:	10 mg/kg/day (Cisplatin combined).
Administration:	Intraperitoneally.
Result:	Enhanced the antitumor effect of Cisplatin.

CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 31;13(1):1700.
- J Clin Invest. 2022 Jul 14;e156501.
- Cell Death Differ. 2022 Sep 14.
- J Med Chem. 2022 Oct 11.
- Cell Prolif. 2021 Jan;54(1):e12919.

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REFERENCES

[1]. Altun M, et al. Activity-based chemical proteomics accelerates inhibitor development for deubiquitylating enzymes. Chem Biol. 2011 Nov 23;18(11):1401-12.

[2]. Bertuccio CA, et al. Anterograde trafficking of KCa3.1 in polarized epithelia is Rab1- and Rab8-dependent and recycling endosome-independent. PLoS One. 2014 Mar 14;9(3):e92013.

[3]. Seiberlich V, et al. The small molecule inhibitor PR-619 of deubiquitinating enzymes affects the microtubule network and causes protein aggregate formation in neural cells: implications for neurodegenerative diseases. Biochim Biophys Acta. 2012 Nov;1823(1

[4]. Kuan-Lin Kuo, et al. The Deubiquitinating Enzyme Inhibitor PR-619 Enhances the Cytotoxicity of Cisplatin via the Suppression of Anti-Apoptotic Bcl-2 Protein: In Vitro and In Vivo Study. Cells. 2019 Oct 17;8(10):1268.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA