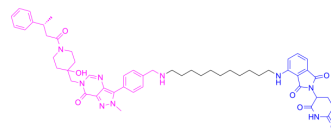


U7D-1

Cat. No.:	HY-148369		
Molecular Formula:	C ₅₃ H ₆₅ N ₉ O ₇		
Molecular Weight:	940.14		
Target:	PROTACs; Deubiquitinase; Apoptosis; MDM-2/p53		
Pathway:	PROTAC; Cell Cycle/DNA Damage; 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 : 100 mg/mL (106.37 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.0637 mL	5.3184 mL	10.6367 mL
	5 mM	0.2127 mL	1.0637 mL	2.1273 mL
	10 mM	0.1064 mL	0.5318 mL	1.0637 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (2.66 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (2.66 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

U7D-1 is a first-in-class potent and selective USP7 (ubiquitin-specific protease 7) PROTAC degrader, with a DC₅₀ of 33 nM in RS4;11 cells. U7D-1 shows anticancer activity. U7D-1 induces apoptosis in Jeko-1 cells^[1].

IC₅₀ & Target

DC₅₀: 33 nM (USP7 in RS4;11 cells)^[1]

In Vitro

U7D-1 (0-1 μM, 0-24 h) induced USP7 degradation in RS4;11 cell, reducing the USP7 protein level by 83.2% at 1 μM^[1].
 U7D-1 (0-20 μM, 3 days) shows anti-proliferative activity in p53 wild-type cell lines, and maintains potent cell growth inhibition in p53 mutant cancer cells^[1].
 U7D-1 (1 μM, 0-24 h) upregulates the level of p53 and p21 proteins in a time-dependent manner, and induces cleavage of caspase-3 in the Jeko-1 cell line in a time dependent manner^[1].
 U7D-1 (1 μM, 24 h) up-regulates the expression of apoptotic related genes and down-regulates the expression of E2F related

genes in Jeko-1 cells^[1].

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

Western Blot Analysis^[1]

Cell Line:	RS4;11 cells
Concentration:	0, 5, 20, 50, 100, and 500 nM
Incubation Time:	24 h
Result:	Induced USP7 degradation in RS4;11 cell in a dose dependent manner, with a DC ₅₀ (half-maximal degradation) value of 33 nM.

Cell Proliferation Assay^[1]

Cell Line:	p53 wild-type cell lines (RS4;11, OCI-ly10, MV4;11, Reh and MOLT4 cell lines); p53 mutant cell lines (Jeko-1 cells, Mino, RPMI-8226, Jurkat, SU-DHL-6, CCRF-CEM)
Concentration:	0-20 μ M
Incubation Time:	3 days
Result:	Showed antiproliferative activity in p53 wild-type cell lines (RS4;11, OCI-ly10, MV4;11, Reh and MOLT4 cell lines), and p53 mutant cell lines (Jeko-1 cells, Mino, RPMI-8226, Jurkat, SU-DHL-6, CCRF-CEM), with IC ₅₀ values for 3 days of 79.4, 227.0, 830.3, 1367.2, 4948.0, 1034.9, 1175.3, 1860.6, 6077.6, 9078.0, and 10675.0, respectively. Had an antiproliferative activity with an IC ₅₀ value of 53.5 nM in Jeko-1 cells for 7 days but exhibited a 13-fold loss in antiproliferative activity with an IC ₅₀ value of 727 nM in Jeko-1 CRBN KO cells.

Western Blot Analysis^[1]

Cell Line:	RS4;11 cells, Jeko-1 and Mino cell
Concentration:	1 μ M
Incubation Time:	0, 2, 4, 6, 8, 10, 12, 20, 24, 36, 48, 60, and 72 h
Result:	USP7 degradation in RS4;11 cells induced by U7D-1 started after 4 h of exposure and more effective degradation was observed after 8 h of exposure. Up-regulated the level of p53 and p21 proteins in RS4;11 cells in a time-dependent manner. Had no effect on the level of p53 protein in p53-mutant cell lines. Induced cleavage of caspase-3 in the Jeko-1 cell line in a time dependent manner.

REFERENCES

[1]. Pei Y, et al. Discovery of a Potent and Selective Degradator for USP7. *Angew Chem Int Ed Engl.* 2022 Aug 15;61(33):e202204395.

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