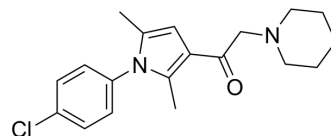


IU1-47

Cat. No.:	HY-122243		
CAS No.:	670270-31-2		
Molecular Formula:	C ₁₉ H ₂₃ ClN ₂ O		
Molecular Weight:	330.85		
Target:	Deubiquitinase		
Pathway:	Cell Cycle/DNA Damage		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 16.67 mg/mL (50.39 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
Preparing Stock Solutions	1 mM	3.0225 mL	15.1126 mL	30.2252 mL
	5 mM	0.6045 mL	3.0225 mL	6.0450 mL
	10 mM	0.3023 mL	1.5113 mL	3.0225 mL
Please refer to the solubility information to select the appropriate solvent.				
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 1.67 mg/mL (5.05 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 1.67 mg/mL (5.05 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 1.67 mg/mL (5.05 mM); Clear solution 			

BIOLOGICAL ACTIVITY

Description	IU1-47 is a potent and specific USP14 inhibitor with an IC ₅₀ of 0.6 μM. IU1-47 inhibits IsoT/USP5 with an IC ₅₀ of 20 μM. IU1-47 induces tau elimination in cultured neurons ^[1] .
IC₅₀ & Target	IC ₅₀ : 0.6 μM (USP14), 20 μM (IsoT/USP5) ^[1]
In Vitro	IU1-47 is essentially inactive on free USP14 (USP14 that is not bound to the proteasome). IU1-47 (25 μM) antagonizes USP14 deubiquitinating activity and stimulates substrate degradation in vitro ^[1] .

IU1-47 stimulates tau degradation principally via the ubiquitin-proteasome system. IU1-47 (3 μ M, 10 and 30 μ M; 48 hours) significantly decreases Tau and phosphotau species Ser-202/Thr-205 levels in murine cortical primary neurons. The level of USP14 itself does not change^[1].

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

Western Blot Analysis^[1]

Cell Line:	Murine cortical primary neurons (DIV5) isolated from APPSwe/P301L transgenic animals
Concentration:	3 μ M, 10 and 30 μ M
Incubation Time:	48 hours
Result:	Significantly decreased Tau and phosphotau species Ser-202/Thr-205 levels. No change in USP14 protein level.

REFERENCES

[1]. Boselli M, et al. An inhibitor of the proteasomal deubiquitinating enzyme USP14 induces tau elimination in cultured neurons. J Biol Chem. 2017 Nov 24;292(47):19209-19225.

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

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