IU1

Cat. No.: HY-13817

CAS No.: 314245-33-5

Molecular Formula: $C_{18}H_{21}FN_2O$

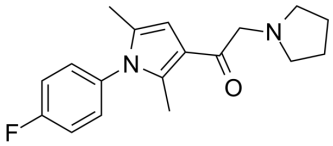
Molecular Weight: 300.37

Target: Deubiquitinase; Autophagy

Pathway: Cell Cycle/DNA Damage; Autophagy

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 : 41.67 mg/mL (138.73 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.3292 mL	16.6461 mL	33.2923 mL
5 mM	0.6658 mL	3.3292 mL	6.6585 mL
10 mM	0.3329 mL	1.6646 mL	3.3292 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: ≥ 1.67 mg/mL (5.56 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.67 mg/mL (5.56 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (5.56 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

IU1 is a special Usp14 inhibitor with an IC_{50} of 4-5 μM.

IC_{50} & Target

IC50: 4-5 μM (Usp14)[1]

In Vitro

Usp14, a proteasome-associated deubiquitinating enzyme, can inhibit the degradation of ubiquitin-protein conjugates, in vivo and in vitro. IU1inhibits the catalytic activity of proteasome associated Usp14 in vitro. The IC_{50} of IU1 for Usp14 is 4-5 μM. IU1 binds specifically to the activated form of Usp14. IU1 can potentially inhibit Usp14 by preventing its docking on the

proteasome, but direct tests of this scenario proved negative. Usp14 inhibition is rapidly established upon addition of IU1 and rapidly reversed upon its removal. IU1 also promotes degradation of Sic1, a CDK inhibitor from S. cerevisiae[1].

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

CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 31;13(1):1700.
- Cell Death Differ. 2022 Jul 29.
- EMBO J. 2022 Jul 11;e108791.
- Pharmacol Res. 8 October 2021, 105933.
- Front Oncol. 2021 Feb 23;11:615568.

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REFERENCES

[1]. Lee BH, et al. Enhancement of proteasome activity by a small-molecule inhibitor of USP14. Nature. 2010 Sep 9;467(7312):179-84.

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