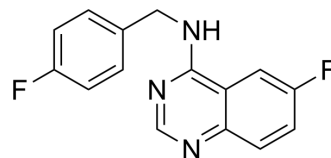


## Spautin-1

<b>Cat. No.:</b>	HY-12990
<b>CAS No.:</b>	1262888-28-7
<b>Molecular Formula:</b>	C <sub>15</sub> H <sub>11</sub> F <sub>2</sub> N <sub>3</sub>
<b>Molecular Weight:</b>	271.26
<b>Target:</b>	Autophagy; Apoptosis; Deubiquitinase
<b>Pathway:</b>	Autophagy; Apoptosis; Cell Cycle/DNA Damage
<b>Storage:</b>	Powder    -20°C    3 years 4°C        2 years In solvent   -80°C    2 years -20°C    1 year



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 50 mg/mL (184.32 mM; Need ultrasonic)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>3.6865 mL</td> <td>18.4325 mL</td> <td>36.8650 mL</td> </tr> <tr> <td>5 mM</td> <td>0.7373 mL</td> <td>3.6865 mL</td> <td>7.3730 mL</td> </tr> <tr> <td>10 mM</td> <td>0.3687 mL</td> <td>1.8433 mL</td> <td>3.6865 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	3.6865 mL	18.4325 mL	36.8650 mL	5 mM	0.7373 mL	3.6865 mL	7.3730 mL	10 mM	0.3687 mL	1.8433 mL	3.6865 mL
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	Please refer to the solubility information to select the appropriate solvent.																					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 50% PEG300 &gt;&gt; 50% PBS Solubility: 10 mg/mL (36.86 mM); Suspended solution; Need ultrasonic</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (9.22 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (9.22 mM); Clear solution</li> </ol>																					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Spautin-1 is a specific and potent autophagy inhibitor which inhibits ubiquitin-specific peptidases, USP10 and USP13 with IC <sub>50</sub> s of 0.6-0.7 μM.
<b>In Vitro</b>	Spautin-1 enhances imatinib mesylate (IM)-induced Cml cell apoptosis by reducing the expression of the anti-apoptotic proteins Mcl-1 and Bcl-2. The pro-apoptotic activity of spautin-1 is associated with activation of GSK3β, an important downstream effector of PI3K/AKT. Spautin-1 enhances IM-induced cytotoxicity in Cml cell line K562, decreasing the IC <sub>50</sub> from 1 to 0.5 μM <sup>[1]</sup> . The mechanism of spautin-1 acting on acute pancreatitis is associated with impaired autophagy

	inhibition <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	Spautin-1 ameliorates the pathogenesis of acute pancreatitis induced by cerulein or L-arginine. Spautin-1 pretreatment significantly diminishes the elevation of serum amylase and lipase levels, which are indicative of trypsin activity. Increasing levels of serum TNF $\alpha$ caused by cerulein are inhibited in the presence of spautin-1. Spautin-1 treatment can ameliorate the inflammation damage induced by cerulein, such as edema, degeneration, coagulative necrosis and infiltration of inflammatory cells <sup>[2]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

<b>Cell Assay</b> <sup>[1]</sup>	Spautin-1 is dissolved in DMSO. Cell proliferation is evaluated using CCK-8 kit. K562 cells (1x10 <sup>5</sup> /mL) are seeded into 96-well plates in triplicate and then treated with 125 to 4,000 nM IM alone or in combination with spautin-1 (10 $\mu$ M). After 48 h of incubation, 10 $\mu$ L of CCK-8 reagent is added to each well. Four hours later, the absorbance is read at 450 nm using a microplate reader <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>Animal Administration</b> <sup>[2]</sup>	Mice: In this study, mice models with acute pancreatitis, including cerulein- and L-arginine-induced models, are constructed. For the cerulein-induced model, four intraperitoneal injections of cerulein (50 $\mu$ g/kg body weight) are given consecutively at hourly intervals; The L-arginine-induced model received hourly intraperitoneal injections of 1.4 g/kg (optimal dosage for this study) L-arginine three times <sup>[2]</sup> . 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 Dec 16.
- J Cell Mol Med. 2021 May 2.
- Microbiol Spectr. 2023 Jun 6;e0474522.
- Cancer Res Commun. 2024 Mar 11.

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## REFERENCES

- [1]. Shao S, et al. Spautin-1, a novel autophagy inhibitor, enhances imatinib-induced apoptosis in chronic myeloid leukemia. Int J Oncol. 2014 May;44(5):1661-1668.
- [2]. Xiao J, et al. Spautin-1 Ameliorates Acute Pancreatitis via Inhibiting Impaired Autophagy and Alleviating Calcium Overload. Mol Med. 2016 Aug 18;22.

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

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