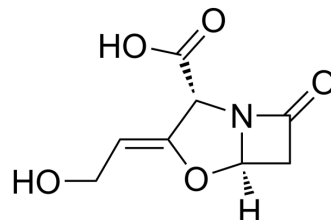


## Clavulanic acid

<b>Cat. No.:</b>	HY-A0256
<b>CAS No.:</b>	58001-44-8
<b>Molecular Formula:</b>	C <sub>8</sub> H <sub>9</sub> NO <sub>5</sub>
<b>Molecular Weight:</b>	199.16
<b>Target:</b>	Antibiotic; Bacterial; Beta-lactamase
<b>Pathway:</b>	Anti-infection
<b>Storage:</b>	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 13.89 mg/mL (69.74 mM); ultrasonic and warming and heat to 60°C)				
		<b>Solvent</b>	<b>Mass</b>		
		<b>Concentration</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
	<b>Preparing Stock Solutions</b>	<b>1 mM</b>	5.0211 mL	25.1054 mL	50.2109 mL
		<b>5 mM</b>	1.0042 mL	5.0211 mL	10.0422 mL
<b>10 mM</b>		0.5021 mL	2.5105 mL	5.0211 mL	
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: PBS Solubility: 6.25 mg/mL (31.38 mM); Clear 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 (12.55 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (12.55 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Clavulanic acid is a naturally occurring powerful bacterial β-lactamases inhibitor for research of infections caused by bacteria, including infections of the ears. Clavulanic acid is active against a wide spectrum of gram-positive and gram-negative bacterias <sup>[1]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	β-lactam
<b>In Vitro</b>	Clavulanic acid shows a synergistic antibacterial action (against β-lactamase-producing organisms) with Ampicillin <sup>[2]</sup> . Clavulanic acid inhibits Ab11 and Ab51 strain with MICs of 2-8 μg/mL <sup>[3]</sup> .

---

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

#### In Vivo

Clavulanic acid (13 mg/kg, i.p.) decreases the bacterial load in the lung of an *A. baumannii* infected C57BL/6 mice pneumonia model<sup>[3]</sup>.

Clavulanic acid (13 mg/kg, i.p.) shows a  $t_{1/2}$  of 6.69 h, AUC of 4.03 mg·h/L in Ab51 infected C57BL/6 mice pneumonia model<sup>[3]</sup>.

Clavulanic acid (100-300 mg/kg, i.p.) shows anti-inflammatory effects on Carrageenan (HY-125474)-induced paw edema rats model<sup>[4]</sup>.

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

## CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 2;13(1):1116.
- Int J Mol Sci. 2023 Oct 27, 24(21), 15657.
- Genomics. 2022: 110527.
- Biomed Res Int. 2018 Jul 2;2018:3579832.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Parag S Saudagar, et al. Clavulanic acid: a review. *Biotechnol Adv.* Jul-Aug 2008;26(4):335-51

[2]. Neu HC, et al. Clavulanic acid, a novel inhibitor of beta-lactamases. *Antimicrob Agents Chemother.* 1978 Nov;14(5):650-5.

[3]. Beceiro A, et al. In vitro activity and in vivo efficacy of clavulanic acid against *Acinetobacter baumannii*. *Antimicrob Agents Chemother.* 2009 Oct;53(10):4298-304.

[4]. Soyocak A, et al. Tannic acid exhibits anti-inflammatory effects on formalin-induced paw edema model of inflammation in rats. *Hum Exp Toxicol.* 2019 Nov;38(11):1296-1301.

---

**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](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA