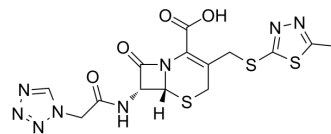


Cefazolin

Cat. No.:	HY-B1892
CAS No.:	25953-19-9
Molecular Formula:	C ₁₄ H ₁₄ N ₈ O ₄ S ₃
Molecular Weight:	454.51
Target:	Antibiotic; Bacterial
Pathway:	Anti-infection
Storage:	4°C, sealed storage, away from moisture * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 250 mg/mL (550.04 mM; Need ultrasonic)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.2002 mL	11.0009 mL	22.0017 mL	
		5 mM	0.4400 mL	2.2002 mL	4.4003 mL	
		10 mM	0.2200 mL	1.1001 mL	2.2002 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: ≥ 2.08 mg/mL (4.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (4.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (4.58 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Cefazolin is an antibiotic used for the research of a number of anti-bacterial infections. Cefazolin can be used for the prophylaxis of surgical antimicrobial. Cefazolin has anti-inflammatory effect and can attenuate post-operative cognitive dysfunction (POCD) ^[1] .
IC₅₀ & Target	Antibiotic ^[1]
In Vitro	Cefazolin (50-300 µg/mL; 6 or 24 hours) has a direct anti-inflammatory effect on C8-B4 cells stimulated by LPS (1 µg/mL) ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Viability Assay ^[1]

Cell Line:	Mouse C8-B4 microglial cells
Concentration:	50, 100, 150, 200, 250, and 300 µg/mL
Incubation Time:	6 or 24 hours
Result:	Inhibited proinflammatory cytokine production. Inhibited IL-6 production at 50 and 100 µg/mL.

In Vivo

Cefazolin (300 mg/kg; injected intraperitoneally 1 h before surgery and then once per day for 5 days after surgery) can attenuate surgery-induced post-operative memory and learning impairment in mice. Cefazolin alone may induce cognitive dysfunction possibly by transient gut dysbiosis in mice without surgery^[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Six- to 8-week-old CD-1 male mice (weighing 31-36 g) ^[1]
Dosage:	300-500 mg/kg
Administration:	10 mg in 0.1 mL was intraperitoneally injected 30 min before surgery and then once every day for 5 days.
Result:	Improved learning and memory after surgery and might impair learning and memory in mice without surgery.

CUSTOMER VALIDATION

- Nat Commun. 2022 Mar 2;13(1):1116.
- iScience. 5 January 2022, 103731.
- Front Aging Neurosci. 2021 Oct 13;13:748637.
- Front Aging Neurosci. Oct 13, 2021.
- ACS Omega. March 3, 2022.

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REFERENCES

[1]. Peng Liang, et al. Perioperative use of cefazolin ameliorates postoperative cognitive dysfunction but induces gut inflammation in mice. J Neuroinflammation. 2018 Aug 22;15(1):235.

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

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