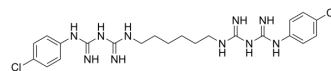


Chlorhexidine

Cat. No.:	HY-B1248
CAS No.:	55-56-1
Molecular Formula:	C ₂₂ H ₃₀ Cl ₂ N ₁₀
Molecular Weight:	505.45
Target:	Bacterial; Antibiotic
Pathway:	Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 25 mg/mL (49.46 mM; Need ultrasonic)						
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg	
				1 mM	1.9784 mL	9.8922 mL	19.7843 mL
				5 mM	0.3957 mL	1.9784 mL	3.9569 mL
				10 mM	0.1978 mL	0.9892 mL	1.9784 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: ≥ 2.5 mg/mL (4.95 mM); Clear solution						
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (4.95 mM); Clear solution						
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (4.95 mM); Clear solution						

BIOLOGICAL ACTIVITY

Description	Chlorhexidine is an antibacterial used as an antiseptic and for other applications. Chlorhexidine is used to clean the skin after an injury, before surgery, or before an injection. Chlorhexidine is also used to clean the hands before a procedure ^[1] .	
In Vivo	Chlorhexidine gluconate (ip) reduces postoperative intra-abdominal infection in mice at the end of colon surgery ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	One hundred and eighty male Imprinting Control Region (ICR) mice at 6 to 8-wk-old (body weight, 25 ± 3 g) were randomized to six groups ^[1] .

Dosage:	Chlorhexidine gluconate 0.05%, and Chlorhexidine gluconate 0.025%.
Administration:	One-time intraperitoneal injection.
Result:	A total of 48 mice (26.7%) developed postoperative intra-abdominal abscesses. Mice that had Chlorhexidine gluconate 0.05% lavage had significantly lower incidence of postoperative intra-abdominal abscesses compared with that of group D mice that had saline lavage only (P = 0.0113). Microscopic peritoneal fibrosis occurred significantly more among group E mice that had Chlorhexidine gluconate 0.05% lavage compared with group D mice that had saline lavage only (P = < 0.005).

CUSTOMER VALIDATION

- Nat Commun. 2021 Mar 29;12(1):1940.
- Cell Death Dis. 2022 Apr 22;13(4):396.
- Mol Oncol. 2020 Feb;14(2):373-386.
- Front Cell Dev Biol. 30 March 2021.
- Transl Oncol. 2024 Apr 24;45:101958.

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REFERENCES

- [1]. Yi-Ching Li, et al. Assessment of the cytotoxicity of chlorhexidine by employing an in vitro mammalian test system. Journal of Dental Sciences. Volume 9, Issue 2, June 2014, Pages 130-135.
- [2]. Hon-Yeung Cheung, et al. Differential actions of chlorhexidine on the cell wall of Bacillus subtilis and Escherichia coli. PLoS One. 2012;7(5):e36659.
- [3]. Wael E Shams, et al. Peritoneal Lavage Using Chlorhexidine Gluconate at the End of Colon Surgery Reduces Postoperative Intra-Abdominal Infection in Mice. J Surg Res. 2015 May 1;195(1):121-7.

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

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