Chlorhexidine dihydrochloride

Cat. No.: HY-B1145

CAS No.: 3697-42-5

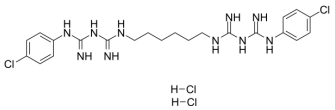
Molecular Formula: $C_{22}H_{32}Cl_4N_{10}$

Molecular Weight: 578.37

Target: Bacterial; Antibiotic

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 : 20.83 mg/mL (36.02 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7290 mL	8.6450 mL	17.2900 mL
	5 mM	0.3458 mL	1.7290 mL	3.4580 mL
	10 mM	0.1729 mL	0.8645 mL	1.7290 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: ≥ 2.08 mg/mL (3.60 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (3.60 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (3.60 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Chlorhexidine dihydrochloride is an orally active antimicrobial agent. Chlorhexidine dihydrochloride can damage the bacteria cell wall, inhibit proliferation of S. sobrinus and induce DNA damage[1][2][3].

In Vitro

Chlorhexidine dihydrochloride (100-200 μM, 15-240 min) causes clear dose-dependent reduction of S. aureus viability[1].
Chlorhexidine dihydrochloride (1.25-20 μM, 24 h) inhibites the growth of human gingival fibroblast[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	S. aureus
Concentration:	100 μM, 200 μM
Incubation Time:	15min, 30 min, 15 min, 60 min, 120 min, 240 min
Result:	Showed a slow decrease during the first two hours and a sharp drop between 2 and 4 h of incubation at 200 μM.

In Vivo

Chlorhexidine dihydrochloride (0.5 ml of 0.12% chlorhexidine digluconate, orally, twice daily for 8 days) caused DNA damage in rats[1].

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

Animal Model:	Wistar rats[1]
Dosage:	0.5 ml of 0.12% chlorhexidine digluconate
Administration:	Oral
Result:	Observed significant increase of DNA damage in leukocytes and oral mucosal cells.

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.
- Cell Signal. 2021 Apr 3;110002.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Grigor'eva A, et al. Changes in the Ultrastructure of Staphylococcus aureus Treated with Cationic Peptides and Chlorhexidine. Microorganisms. 2020 Dec 14;8(12):1991.

[2]. Dogan S, et al. Effects of low-concentrated chlorhexidine on growth of Streptococcus sobrinus and primary human gingival fibroblasts. Clin Oral Investig. 2003 Dec;7(4):212-6.

[3]. Ribeiro DA, et al. Chlorhexidine induces DNA damage in rat peripheral leukocytes and oral mucosal cells. J Periodontal Res. 2004 Oct;39(5):358-61.

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