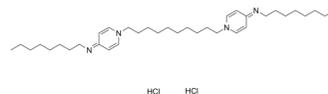


Octenidine dihydrochloride

Cat. No.:	HY-B2170A
CAS No.:	70775-75-6
Molecular Formula:	C ₃₆ H ₆₄ Cl ₂ N ₄
Molecular Weight:	624
Target:	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

H₂O : 33.33 mg/mL (53.41 mM; Need ultrasonic)
DMSO : 5 mg/mL (8.01 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.6026 mL	8.0128 mL	16.0256 mL
	5 mM	0.3205 mL	1.6026 mL	3.2051 mL
	10 mM	0.1603 mL	0.8013 mL	1.6026 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 5 mg/mL (8.01 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 5 mg/mL (8.01 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 5 mg/mL (8.01 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline
Solubility: ≥ 2.5 mg/mL (4.01 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 95% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (4.01 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Octenidine dihydrochloride is an effective antiseptic compound for skin mucous membranes and wounds.

In Vitro

Octenidine concentrations of less than 1.5 μM (0.94 μg/mL) causes a greater than 99% reduction of tested microbial

	<p>population within 15 min. Staphylococcus epidermidis is the most susceptible of the test organisms, and E. coli and C. albicans are the least susceptible^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>The antimicrobial activity of octenidine hydrochloride (OCT) is maintained when applied to the skin of the hands and feet of cynomolgus monkeys. Aqueous octenidine, at a concentration of 0.2 to 1.6% reduces resident microflora populations from 90 to 99.98%^[1]. A significant reduction in plaque score is observed on the buccal tooth surfaces after daily topical application of 1% solutions of octenidine and chlorhexidine for 7 d; octenidine is more effective than chlorhexidine^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

PROTOCOL

Kinase Assay ^[1]	<p>The bactericidal activities of OCT and CHG against Staphylococcus aureus are measured by exposing cultures to several different concentrations of each compound for various lengths of time. OCT is diluted from the 5 mM stock solution and tested in phosphate buffer at levels ranging from 0.5 to 5.0 FsM. The test is begun by adding the bacterial culture to the test solution containing OCT or CHG; samples are taken at 5, 15, 30, and 60 min afterward. The inoculum size is approximately 10⁶ CFU/mL^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
Animal Administration ^[1]	<p>Monkeys: Four solutions of OCT are prepared by dissolving OCT in distilled water to final concentrations (wt/wt) of 0.2, 0.4, 0.8 and 1.6%, equivalent to 3.2, 6.4, 12.8 and 25.6 mM, respectively. Skin-degerming activities of aqueous and formulated octenidine and formulated chlorhexidine are compared in single and multiple applications of these agents to the hand and foot surfaces of monkeys by using a glove-juice extraction procedure to measure the skin microflora^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Sedlock DM, et al. Microbicidal activity of octenidine hydrochloride, a new alkanediylbis[pyridine] germicidal agent. Antimicrob Agents Chemother. 1985 Dec;28(6):786-90.
- [2]. Emilson CG, et al. Effect of the antibacterial agents octenidine and chlorhexidine on the plaque flora in primates. Scand J Dent Res. 1981 Oct;89(5):384-92.

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

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