Product Data Sheet

Product Name: Povidone iodine (iodopovidone)
Cat. No.: GC32325

Chemical Properties

Cas. No.	25655-41-8		
SMILES	O=C1N(C(C)CC)CCC1.I[F,Cl,Br,I]I.[n].[n:x].[=].[10:1]		
Formula		M.Wt	
Solubility	DMSO : 15 mg/mL (Need ultrasonic); H_2O : 2.4 mg/mL (Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Protocol

Cell experiment:

Each bacterial isolate is washed twice with phosphate-buffered saline (PBS, pH 7.2), centrifuged for 10 min at 1932xg at 20°C, and suspended in 3 mL of nutrient broth, adjusted to a turbidity equivalent of 0.5 McFarland standard. The bacterial suspension is diluted 1:100 with MHB to a final inoculum of 106 colony-forming units (cfu)/mL. For each bacterial strain, two rows of a 96-well microtitre plate are filled with the final bacterial inoculum (50 µL per well) and 50 µL of each serial dilution of ILαD. The procedure is repeated for the Povidone iodine (PVP-I) serial dilutions[1].

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Animal experiment:

The mice are divided into 6 groups as follows: 1) saline+vehicle (control group), 2) Dp+vehicle, 3) Dp+BZK, 4) Dp+Povidone iodine (PVP-I), 5) Dp+Et-OH, and 6) Dp+CHG. Animals in the experimental groups are exposed to the allergen through the subcutaneous injection of 5 μg of Dp dissolving in 10 μL of saline in the ventral side of the right ear 2 to 3 days a week (a total of 8 times) under anesthesia with 4% halothane. Animals in the control group are not sensitized, receiving a subcutaneous injection of 10 μL of saline in the ventral side of the right ear. Animals receive an application of antiseptic agent are exposed to the allergen and treated with 0.2% (w/v) benzalkonium chloride (Dp+BZK), 10% (w/v) povidone-iodine (Dp+PVP-I), 80% (v/v) ethanol (Dp+Et-OH) or 0.5% (v/v) chlorhexidine gluconate (Dp+CHG). These agents are applied a total of 15 times during the experimental period. The BZK, Povidone iodine (PVP-I), Et-OH, and CHG are dissolved in 25 μL of injection water and applied gently to the dorsal side of the right ear using a micropipette with a fine plastic tip. The animals in the Dp+vehicle and control groups receive 25 μL of injection water. All animals are sacrificed on the last day of the experiment (day 18)[2].

References:

[1]. Zisi AP, et al. Iodine-lithium-alpha-dextrin (ILαD) against Staphylococcus aureus skin infections: a comparative study of in-vitro bactericidal activity and

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cytotoxicity between ILαD and povidone-iodine. J Hosp Infect. 2017 Jul 20. pii: S0195-6701(17)30395-X.
[2]. Kaori Sadakane, et al. Effect of the Hand Antiseptic Agents Benzalkonium Chloride, Povidone-Iodine, Ethanol, and Chlorhexidine Gluconate on Atopic Dermatitis in NC/Nga Mice. Int J Med Sci. 2015; 12(2): 116–125.

Background

Povidone-iodine is a microcide with broad-spectrum activity against bacteria, fungi, viruses, and protozoans.[1] It reduces total anaerobic and aerobic bacterial counts *in vitro* in dog feces when applied topically as a 10% solution.[2] Povidone-iodine decreases bacterial counts and the occurrence of anastomotic leaks in a dog model of emergent resection and anastomosis of the sigmoid colon when applied *in situ* at a concentration of 10% v/v. Topical administration of povidone-iodine (10% v/v) also reduces bacterial

counts on the skin of cynomolgus monkeys.[3] Formulations containing povidone-iodine have been used to disinfect skin before and after surgery.

1.Eggers, M., Eickmann, M., Kowalski, K., et al.Povidone-iodine hand wash and hand rub products demonstrated excellent in vitro virucidal efficacy against Ebola virus and modified vaccinia virus Ankara, the new European test virus for enveloped virusesBMC Infect. Dis.15:375(2015) 2.Jones, F.E., DeCosse, J.J., and Condon, R.E.Evaluation of "instant" preparation of the colon with povidone-iodineAnn. Surg.184(1)74-79(1976) 3.Nakata, H., Tsubotani, Y., Nii, T., et al.Effects of olanexidine gluconate on preoperative skin preparation: An experimental study in cynomolgus monkeysJ. Med. Microbiol.66(5)678-685(2017)

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