

Research Publications Related to Virucidal Efficacy of PVP-I

Bactericidal and Virucidal Activity of Povidone-Iodine and Chlorhexidine Gluconate Cleansers in an In Vivo Hand Hygiene Clinical Simulation Study

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5986686/>

Abstract: We investigated the bactericidal and virucidal efficacy of povidone-iodine (PVP-I) 7.5% scalp and skin cleanser, chlorhexidine gluconate (CHG) 4% hand cleanser, and a reference hand wash (soft soap) in 15 healthy volunteers following European Standard EN1499 (hygienic hand wash test method for bacteria), which was adapted for virucidal testing.

Infectious Disease Management and Control with Povidone Iodine

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6856232/>

Abstract: For over 60 years, povidone iodine (PVP-I) formulations have been shown to limit the impact and spread of infectious diseases with potent antiviral, antibacterial and antifungal effects. In addition to a lack of reported resistance, the benefits of PVP-I include an excellent safety profile and a broad spectrum of effect due to its multimodal action. Studies have shown that hand washing with PVP-I-based antiseptics is effective for the decontamination of skin, while PVP-I mouthwashes and gargles significantly reduce viral load in the oral cavity and the oropharynx.

In Vitro Bactericidal and Virucidal Efficacy of Povidone-Iodine Gargle/Mouthwash Against Respiratory and Oral Tract Pathogens

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5986684/pdf/40121_2018_Article_200.pdf

Abstract: Recent virus epidemics and rising antibiotic resistance highlight the importance of hygiene measures to prevent and control outbreaks. We investigated the in vitro bactericidal and virucidal efficacy of povidone-iodine (PVP-I) 7% gargle/mouthwash at defined dilutions against oral and respiratory tract pathogens.

Inactivation of Human Viruses by Povidone-Iodine in Comparison With Other Antiseptics

<https://pubmed.ncbi.nlm.nih.gov/9403252/>

Abstract: Inactivation of a range of viruses, such as adeno-, mumps, rota-, polio- (types 1 and 3), coxsackie-, rhino-, herpes simplex, rubella, measles, influenza and human immunodeficiency viruses, by povidone-iodine (PVP-I) and other commercially available antiseptics in Japan was studied in accordance with the standardized protocol in vitro. In these experiments, antiseptics such as PVP-I solution, PVP-I gargle, PVP-I cream, chlorhexidine gluconate, alkyldiamino-ethyl-glycine hydrochloride, benzalkonium chloride (BAC) and benzethonium chloride (BEC) were used. PVP-I was effective against all the virus species tested.

Inactivation of SARS Coronavirus by Means of Povidone-Iodine, Physical Conditions and Chemical Reagents

<https://www.karger.com/Article/FullText/89211>

Abstract: The efficacy of several povidone-iodine (PVP-I) products, a number of other chemical agents and various physical conditions were evaluated for their ability to inactivate the severe acute respiratory syndrome coronavirus (SARS-CoV). Treatment of SARS-CoV with PVP-I products for 2 min reduced the virus infectivity from 1.17×10^6 TCID₅₀ /ml to below the detectable level. The efficacy of 70% ethanol was equivalent to that of PVP-I products.

Fixation of SARS-CoV-infected Vero E6 cells with a fixative including formalin, glutaraldehyde, methanol and acetone for 5 min or longer eliminated all infectivity. Heating the virus at 56 °C for 60 min or longer reduced the infectivity of the virus from 2.6×10^7 to undetectable levels. Irradiation with ultraviolet light at 134 W/cm² for 15 min reduced the infectivity from 3.8×10^7 to 180 TCID₅₀ /ml; however, prolonged irradiation (60 min) failed to eliminate the remaining virus, leaving 18.8 TCID₅₀ /ml.

Rapid and Effective Virucidal Activity of Povidone-Iodine Products Against Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and Modified Vaccinia Virus Ankara (MVA)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4675768/>

Abstract: Since the first case of Middle East Respiratory Syndrome coronavirus (MERS-CoV) infection was reported in 2012, the virus has infected more than 1300 individuals in 26 countries, and caused more than 480 deaths. Human-to-human transmission requires close contact, and has typically occurred in the healthcare setting. Improved global awareness, together with improved hygiene practices in healthcare facilities, has been highlighted as key

strategies in controlling the spread of MERS-CoV.

This study tested the in vitro efficacy of three formulations of povidone iodine (PVP-I: 4% PVP-I skin cleanser, 7.5% PVP-I surgical scrub, and 1% PVP-I gargle/mouthwash) against a reference virus (Modified vaccinia virus Ankara, MVA) and MERS-CoV.

In Vitro Short-Time Killing Activity of Povidone-Iodine (Isodine Gargle) in the Presence of Oral Organic Matter

<https://pubmed.ncbi.nlm.nih.gov/16490985/>

Abstract: In order to estimate the clinical efficacy of a povidone-iodine oral antiseptic (PVP-I) on oral bacterial infectious diseases, we studied the effect of oral organic matter on the in vitro killing activity of PVP-I. In addition, we compared the in vitro short-time killing activity of PVP-I with those of other oral antiseptics using mouth-washing and gargling samples collected from healthy volunteers. When any of the mouth-washing and gargling samples was used, the standard (0.23-0.47%) or lower concentrations of PVP-I killed methicillin-resistant *Staphylococcus aureus* (MRSA) and *Pseudomonas aeruginosa*, including multidrug-resistant strains, within 15-60 s in the presence of oral organic matter. 0.02% benzethonium chloride (BEC) and 0.002% chlorhexidine gluconate (CHG) did not show effects against MRSA and *P. aeruginosa* (including multidrug-resistant strains) in mouth-washing and gargling samples even after 60 s.

Evaluation of the Bactericidal Activity of Povidone-Iodine and Commercially Available Gargle Preparations

<https://pubmed.ncbi.nlm.nih.gov/12011519/>

Abstract: Encouragement of gargling is important for the control of opportunistic and community-acquired infections. In hospitals, a povidone-iodine (PVP-I) gargle is used frequently. However, at pharmacies in the community a variety of gargles containing various ingredients are now available. In view of this, we conducted a study to compare the bactericidal activities of a PVP-I gargle with those of other commercially available gargles. In addition, we asked about the feeling after use by questionnaire. At middle schools in our city, we investigated whether the encouragement to use the PVP-I gargle had an effect on the absence rate from school due to common cold and influenza.

Virucidal efficacy of povidone-iodine-containing disinfectants

<https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1472-765X.2010.02871.x>

Abstract: The objective of this study was to evaluate virucidal efficacy of the commercially available povidone-iodine formulations Betaisodona® solution and Betaseptic Mundipharma® (Mundipharma).

Prevention of respiratory infections by povidone-iodine gargle

<https://pubmed.ncbi.nlm.nih.gov/12011518/>

Abstract: Bacterial attachment to host cells is the initial step in the pathogenesis of infection. Our studies and those of others also showed that there is a significant correlation between the attachment of bacteria to human pharyngeal epithelial cells and the occurrence of respiratory tract infections. We identified the receptor on human pharyngeal epithelial cells which mediate binding of *Moraxella catarrhalis* and *Haemophilus influenzae*. In an attempt to prevent occurrence of infections, the effects of povidone-iodine gargling on the incidence of respiratory infections were investigated.

Effect of neutral electrolyzed water on lux-tagged *Listeria monocytogenes* EGDe biofilms adhered to stainless steel and visualization with destructive and non-destructive microscopy techniques

<https://www.sciencedirect.com/science/article/abs/pii/S0956713513002703>

Conclusions: The disinfectant effect of NEW may be attributed to the combined antimicrobial effect of available chlorine and high ORP exhibited by its oxidizing compounds. NEW does not promote metal equipment corrosion due to its neutral pH, and is also environmentally friendly.

Prevention of upper respiratory tract infections by gargling: a randomized trial

<https://pubmed.ncbi.nlm.nih.gov/16242593/>

Conclusions: Simple water gargling was effective to prevent URTIs among healthy people. This virtually cost-free modality would appreciably benefit the general population.