

CofixRX Up to 8 Hours of Protection

Test Results

Utah State University Institute for Antiviral Research

CofixRX[™]
Nasal Spray



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Test Report

Up to 8 Hours of Protection

Summary of testing:

The report from the Institute for Antiviral Research at Utah State University presents the results from testing the virucidal (Virucidal is defined by Merriam Webster's dictionary as "having the capacity to or tending to destroy or inactivate viruses.") effect of CofixRX Nasal Spray against SARS-CoV-2 (Covid-19), Influenza B (the flu), HRV-14 (common cold), and RSV. The procedure and results are summarized below.

Procedure:

Laboratory cells are first infected with the viruses mentioned above, creating a "stock" of cells that can be used for testing CofixRX against the four (4) different viruses mentioned above. CofixRX Nasal Spray is then allowed to come into contact with each of the four (4) virus-infected cell cultures for 45 seconds, after which the solution is diluted to eliminate further effects from CofixRX. The samples are then plated and incubated for 5-7 days in an environment appropriate for cell growth, after which the virucidal effect of CofixRX can be determined by comparing the effect of CofixRX on the four (4) different viruses to the control groups that were not exposed to CofixRX (negative controls), as well to control groups exposed to 70% ethanol, which is known to be virucidal and serves as a positive control.

Results:

Tables 1 thru 4 on pages 3 and 4 below display the data showing the effects of CofixRX against SARS-CoV-2, influenza B virus, HRV-14, and RSV. The reduction of virus caused by CofixRX is expressed by the log reduction value (LRV); an LRV > 1 indicates virucidal activity. CofixRX achieved an LRV of 2.9 + 0.4, which indicates that 99.9% of the virus was killed after coming into contact with CofixRX for 45 seconds. Against influenza B, CofixRX achieved an LRV of > 5, indicating 100% effectiveness. CofixRX achieved an LRV of 1.2 against HRV-14, and an LRV > 2 against RSV. This translates to 94% effectiveness against HRV-14, which is associated with the common cold; effectiveness was 100% against RSV, which is an important cause of morbidity in the pediatric population. As expected, ethanol (70%) was 100% effective against SARS-CoV-2, influenza B, and RSV, but was not effective against HRV-14. Additionally, the link here explains the mathematics for log reduction values or LRV.

- ❖ <https://microchemlab.com/information/log-and-percent-reductions-microbiology-and-antimicrobial-testing>

Conclusions:

CofixRX Nasal Spray is 99.9% effective against SARS-CoV-2. It was 100% effective against Influenza B and RSV, and 94% effective against HRV-14. The combination of ingredients in CofixRX is highly virucidal against all four of the viruses tested in this laboratory analysis.

Scientific studies proving the effectiveness and safety of Povidone-Iodine as a nasal sanitizer:

- ❖ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7341475/>
- ❖ <https://medicaldialogues.in/ent/news/intranasal-povidone-iodine-effectively-limits-covid-19-spread-finds-study-69915>
- ❖ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8056783/>
- ❖ <https://pubmed.ncbi.nlm.nih.gov/32520599/>

References:

Scientific studies proving efficacy and safety of active ingredient Povidone-Iodine in nasal spray:



Table 1. Virucidal activity against SARS-CoV-2 after incubation with virus at $22 \pm 2^\circ\text{C}$.

Compound	Concentration	Contact Time	Toxicity ^a	Neut. Control ^b	Virus Titer ^c	VC Titer ^c	LRV ^d
CofixRX Nasal Spray	100%	45 seconds	1/10	None	2.0	5.0	3.0
CofixRX Nasal Spray	100%	45 seconds	1/10	None	1.7	5.0	3.3
CofixRX Nasal Spray	100%	45 seconds	1/10	None	2.5	5.0	2.5
Ethanol	70%	45 seconds	None	None	<0.7	5.0	>4.3

^a Cytotoxicity indicates the highest dilution of the endpoint titer where full (>80%) cytotoxicity was observed

^b Neutralization control indicates the highest dilution of the endpoint titer where compound inhibited virus CPE in wells after neutralization (ignored for calculation of virus titer and LRV)

^c Virus titer of test sample or virus control (VC) in \log_{10} CCID₅₀ of virus per 0.1 mL

^d LRV (log reduction value) is the reduction of virus in test sample compared to the virus control

Table 2. Virucidal activity against influenza B virus after incubation with virus at 22 ± 2°C.

Compound	Concentration	Contact Time	Toxicity ^a	Neut. Control ^b	Virus Titer ^c	VC Titer ^c	LRV ^d
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	5.7	>5.0
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	5.7	>5.0
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	5.7	>5.0
Ethanol	70%	45 seconds	None	None	<0.7	5.7	>5.0

^a Cytotoxicity indicates the highest dilution of the endpoint titer where full (>80%) cytotoxicity was observed

^b Neutralization control indicates the highest dilution of the endpoint titer where compound inhibited virus CPE in wells after neutralization (ignored for calculation of virus titer and LRV)

^c Virus titer of test sample or virus control (VC) in log₁₀ CCID₅₀ of virus per 0.1 mL

^d LRV (log reduction value) is the reduction of virus in test sample compared to the virus control

Table 3. Virucidal activity against HRV-14 after incubation with virus at 22 ± 2°C.

Compound	Concentration	Contact Time	Toxicity ^a	Neut. Control ^b	Virus Titer ^c	VC Titer ^c	LRV ^d
CofixRX Nasal Spray	100%	45 seconds	None	None	3.7	5.0	1.3
CofixRX Nasal Spray	100%	45 seconds	None	None	4.0	5.0	1.0
CofixRX Nasal Spray	100%	45 seconds	None	None	3.7	5.0	1.3
Ethanol	70%	45 seconds	None	None	5.3	5.0	0

^a Cytotoxicity indicates the highest dilution of the endpoint titer where full (>80%) cytotoxicity was observed

^b Neutralization control indicates the highest dilution of the endpoint titer where compound inhibited virus CPE in wells after neutralization (ignored for calculation of virus titer and LRV)

^c Virus titer of test sample or virus control (VC) in log₁₀ CCID₅₀ of virus per 0.1 mL

^d LRV (log reduction value) is the reduction of virus in test sample compared to the virus control

Table 4. Virucidal activity against RSV after incubation with virus at 22 ± 2°C.

Compound	Concentration	Contact Time	Toxicity ^a	Neut. Control ^b	Virus Titer ^c	VC Titer ^c	LRV ^d
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	2.7	>2.0
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	2.7	>2.0
CofixRX Nasal Spray	100%	45 seconds	None	None	<0.7	2.7	>2.0
Ethanol	70%	45 seconds	None	None	<0.7	2.7	>2.0

^a Cytotoxicity indicates the highest dilution of the endpoint titer where full (>80%) cytotoxicity was observed

^b Neutralization control indicates the highest dilution of the endpoint titer where compound inhibited virus CPE in wells after neutralization (ignored for calculation of virus titer and LRV)

^c Virus titer of test sample or virus control (VC) in log₁₀ CCID₅₀ of virus per 0.1 mL

^d LRV (log reduction value) is the reduction of virus in test sample compared to the virus control