

Benzalkonium Chloride (BZK) Hand Sanitizer COVID-19 Resources

Question: Does the non alcohol-based Benzalkonium Chloride (BZK) or **BKC** Hand and Skin Sanitizer effectively kill SARS-CoV-2 (COVID-19) Human Coronavirus?



The FDA is the governing body for hand sanitizers. The FDA does **NOT** allow **any** company to make Viral claims (claims that their product kills viruses). That is why none of the hand sanitizing companies can claim their product kills SARS-Cov-2 COVID-19. The FDA's rules require the consumer to make the determination if the product kills viruses based on readily available data, such as studies, research papers, and the product's chemistry/ingredients.

Highlights from the information below:

- 1) Since not every testing lab or company in the world has access to SARS-CoV-2 to test with, the Environmental Protection Agency (EPA) and the Australian Government provided guidance that labs and companies should test against other, similarly structured, strains of Human Coronavirus. **Human Coronavirus (229E)** was specifically identified as the only strain of **Human Coronavirus** to be used as a surrogate to COVID-19 by one government agency.
- 2) BioScience Labs tested the non alcohol based **Benzalkonium Chloride** on **Human Coronavirus 229E** and found it eliminated 99.9% of the virus in a 30-second test and found persistent protection at 60-seconds, and 120-seconds according to the report.
- 3) A report in the American Journal of Infection Control studied the efficacy of non alcohol based **Benzalkonium Chloride** sanitizer on human skin at 1, 2, and 4 hours after application. The results were remarkable as the **Benzalkonium Chloride (BK)** test product produced a marked reduction in colony-forming units on *Staphylococcus aureus* at each of the 3 time points (1,2 & 4 hours) tested (3.75-

4.16- \log_{10} reductions), whereas the alcohol based comparator produced less than 1- \log_{10} reduction over the same time. The differences were highly significant.

4) After studying 70,669 reported exposures to alcohol and nonalcohol hand sanitizers in children aged ≤ 12 years reported to the National Poison Data System, the CDC has given a warning that **alcohol based hand sanitizer might be associated with a greater health risks in young children** that similar use of non alcohol based hand sanitizer.



<https://www.cdc.gov/coronavirus/types.html>

Human Coronavirus Types

Coronaviruses are named for the crown-like spikes on their surface. There are four main sub-groupings of coronaviruses, known as alpha, beta, gamma, and delta. The seven coronaviruses that can infect people are:

Common human coronaviruses

1. **229E** (alpha coronavirus)
 2. NL63 (alpha coronavirus)
 3. OC43 (beta coronavirus)
 4. HKU1 (beta coronavirus)
 5. MERS-CoV (the beta coronavirus that causes Middle East Respiratory Syndrome, or MERS)
 6. SARS-CoV (the beta coronavirus that causes severe acute respiratory syndrome, or SARS)
 7. SARS-CoV-2 (the novel coronavirus that causes coronavirus disease 2019, or COVID-19)
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<https://www.epa.gov/coronavirus/i-want-use-product-kill-sars-cov-2-covid-19-it-isnt-list-n-it-effective-against-sars-cov>

EPA Guidance on selecting products that kill COVID-19

“If you would like to use a product that is not on our list, look for an EPA-registered product with “**human coronavirus**” listed as a target pathogen”



Australian Government

Department of Health
Therapeutic Goods Administration

<https://www.tga.gov.au/surrogate-viruses-use-disinfectant-efficacy-tests-justify-claims-against-covid-19>

Surrogate viruses for use in disinfectant efficacy tests to justify claims against COVID-19

For sponsors and manufacturers wishing to make label claims of efficacy against COVID-19 for products that are either hard surface disinfectants or disinfectants that are medical devices, the following surrogate viruses can be used:

- **Human coronavirus 229E**
- Murine hepatitis virus



Bio Science Labs Tested Human Coronavirus 229E on Benzalkonium hand sanitizer.

<https://wjla.com/news/nation-world/exclusive-sanitizer-opposed-by-cdc-kills-coronavirus-surrogate-in-lab-tests>

A virologist named [Dr. Volha Teagle](#), and her team selected a structurally similar strain to COVID-19, known as **Human Coronavirus 229E**, and tested a Benzalkonium hand sanitizer against it.

In the lab, the **benzalkonium hand sanitizer did eliminate 99.9 percent of the virus** in the 30-second test. "We also carried the test out to 60-seconds and 120-seconds of exposure time. All three of the tests showed the same thing." "Since the action of **benzalkonium** is against the envelope of the virus and the envelope does not mutate.



Demonstrating the persistent antibacterial efficacy of a hand sanitizer containing benzalkonium chloride on human skin at 1, 2, and 4 hours after application

[https://www.ajicjournal.org/article/S0196-6553\(19\)30008-2/fulltext](https://www.ajicjournal.org/article/S0196-6553(19)30008-2/fulltext)

Conclusions

These results show a major improvement in persistent antibacterial activity for the BK (**benzalkonium chloride**) formulation compared to the comparator ethanol-based formulation.



Reported Adverse Health Effects in Children from Ingestion of Alcohol-Based Hand Sanitizers

https://www.cdc.gov/mmwr/volumes/66/wr/mm6608a5.htm#T1_down

Summary

Non-recommended use of alcohol-based (alcohol) hand sanitizers, including intentional or unintentional ingestion, **might be associated with greater health risks in young children** than similar use of nonalcohol-based (nonalcohol) hand sanitizers.

Benzalkonium Chloride is an FDA approved non-alcohol-based hand and skin sanitizer.