



Viruses

PPS0929091

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| Advisory Committee: | Science & Technology / Infection Control |
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Overview

It is often asked if compounds found in Kleenhanz® are effective against viruses, and if so, why such claims are not found on product packaging. It is important to note that while Kleenhanz® is effective against many viruses, the FDA (Food & Drug Administration) does not allow products of this type (hand hygiene products) to make claims against viruses as it relates to usage on the hands due to the numerous factors/variances involved with treating/testing hands. While surface wipes often make such claims, they are regulated by the EPA (Environmental Protection Agency) and with proper testing are allowed to make claims against viruses. In times such as these with rising concerns over viruses, it is important to use a product that can be an effective and non-invasive solution to help fight viruses.

POSITION

Belec et al.¹ have clearly shown benzalkonium chloride to be very effective against enveloped viruses (herpes simplex virus hominus type 2, cytomegalovirus, and respiratory syncytial virus). Germane to this discussion is the fact that respiratory syncytial virus is an enveloped (RNA genome) virus similar to that of the influenza virus. Although these investigators did not specifically test the efficacy of benzalkonium chloride on influenza virus infectivity, they did demonstrate benzalkonium chloride was very effective (3 log reduction of viral infectivity following a 5 min exposure) against respiratory syncytial virus at considerably lower (0.1) concentration, i.e., 0.0125 % (w/v) than that concentration (0.125 %, w/v) of benzalkonium chloride used on the Kleenhanz® towel. A 3 log reduction in virus infectivity is considered an acceptable criterion of virucidal efficacy. Thus, we can logically extrapolate and conclude that the active ingredient at higher concentration would be more effective (greater than 3 log reduction) reducing further (>3 logs) respiratory syncytial virus infectivity as well as other membrane enveloped RNA viruses such as influenza. Benzalkonium chloride has been used extensively for years as an effective spermicidal due to its membrane disruption, i.e., detergent properties. Membrane enveloped viruses, e.g., influenza obtain their membrane components from the host cell via a budding process. Like spermatozoa, membrane enveloped influenza virus which derives its membrane components from the host cell should be very sensitive (in similar fashion to that of the membrane enveloped respiratory syncytial virus).

References

- ¹Journal of Antimicrobial Chemotherapy (2000) 46, 685-693

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