

Covid-19 and the disinfectants “Fungisolve”

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Introduction

The recent rapid outbreak of what appears to be a completely novel strain of coronavirus in Covid-19 in China is causing much concern around the world. This virus has tentatively been called Covid-19 coronavirus, and this terminology will be used in this document. The world just needs to be reminded of the outbreak of *Severe Acute Respiratory Syndrome* (SARS) virus and the devastating consequences that virus caused. The Covid-19 virus, like SARS, are both coronaviruses. Both viruses started off in China. SARS had a human mortality rate of around 15% and increasing to 50% in people older than 60 years of age. What eventually brought the SARS outbreak under control was the fact that infected persons were not infectious until they were showing clinical signs of infection. It was thus possible to control the spread of the disease by isolating people showing clinical signs. This is not the case with Covid-19 coronavirus, as it has been established that a person is infectious without showing clinical signs. This is a similar way in which Influenza virus spreads. This makes the control of this virus very difficult. The world is on the verge of a major and serious pandemic.

Coronavirus

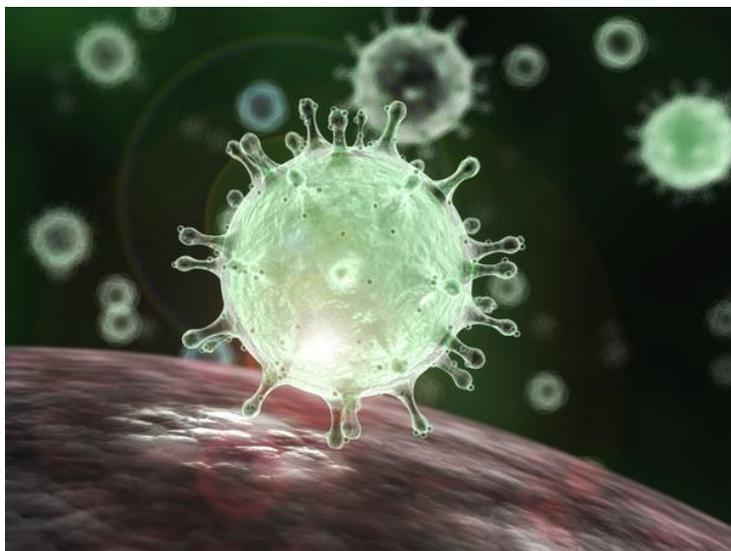
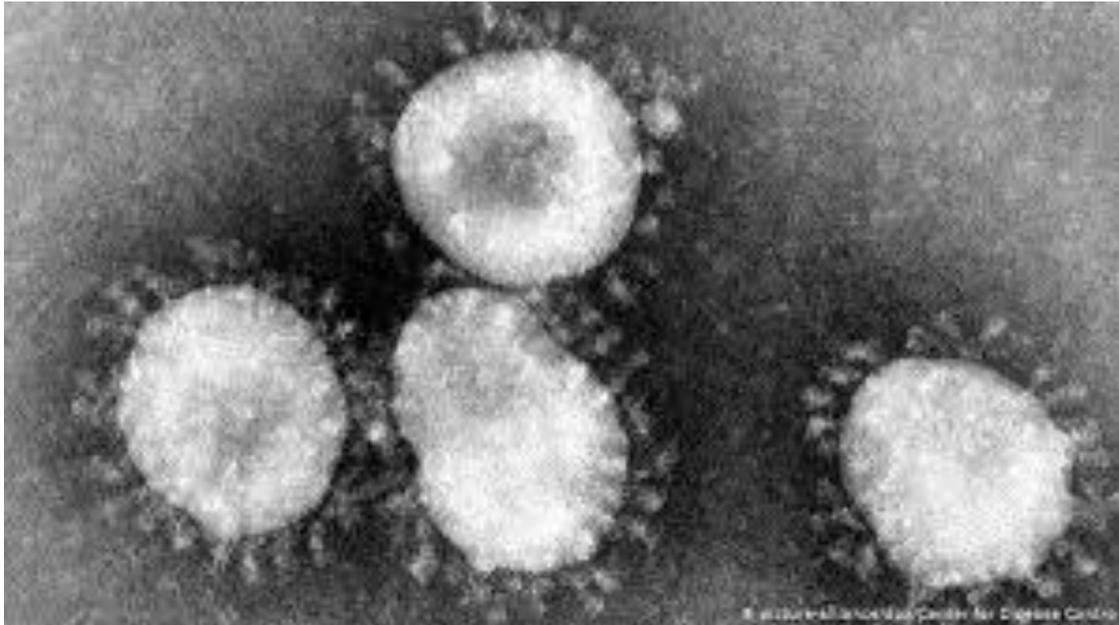


Image from
<https://www.kbia.org/post/how-does-Covid-19-coronavirus-compare-mers-sars-and-common-cold#stream/0>

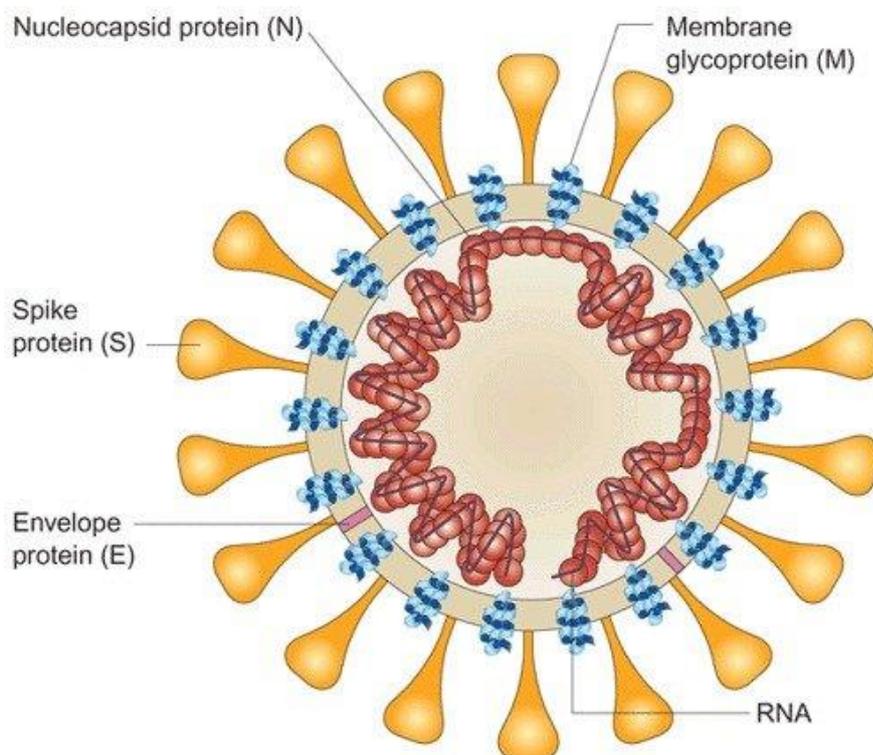
The family of viruses known as coronavirus have been known for a long time. Characteristics of this virus, and the main characteristic which gives this group of family its name, is the crown like structures which are found on the surface of the

virus, known as the spike protein. The genome of this virus is made up of RNA. This means that the virus is highly likely to evolve and change. In many of the known coronaviruses, there are hypervariable regions in the spike protein which can result in the virus changing serologically. This can make vaccine development difficult.



Electron microscope image of a coronavirus <https://www.dw.com/en/everything-you-need-to-know-about-the-new-coronavirus/a-52102486>

Coronaviruses are enveloped viruses. The enveloped viruses are generally much more susceptible to the action of disinfectants than the highly resistant naked viruses. If the viral envelope can be disrupted, the virus can no longer infect the host cell and the virus is effectively neutralized.



One of the major diseases in poultry, called infectious bronchitis is caused by a coronavirus called *Infectious bronchitis virus*.

The disinfectant “**Fungisolve**”

Fungisolve is a novel disinfectant. What makes **Fungisolve** novel is that it is a highly effective disinfectant, yet it has a very low toxicity. It is the least toxic disinfectant in the market. This combination of very high efficacy and very low toxicity makes **Fungisolve** a unique product. There is substantial scientific information to support the claims of low toxicity, and efficacy of **Fungisolve** against a wide range of viruses and other pathogens.

Fungisolve has been extensively tested against a wide range of naked viruses. The naked viruses, such as Parvovirus, circoviruses, Reoviruses, Adenoviruses and Birnaviruses (*Infectious bursal disease virus*), are widely regarded as the most difficult viruses to kill. **Fungisolve** has been tested and has been found to be effective against all of these viruses. The inactivation of enveloped virus is much easier to achieve and **Fungisolve** has been found to be highly effective against all enveloped viruses which have been tested, including coronavirus, orthomyxoviruses (*Influenza virus*) and paramyxovirus (*Newcastle disease virus*)

Efficacy of Fungisolve against coronaviruses

It will be very difficult to get any tests done on any disinfectant against the new Covid-19 coronavirus. All indications are that this is a novel virus and any tests on the efficacy of a disinfectant can only be performed once it has been established if this virus can be grown in a culture system such as a cell line or in embryonated chicken eggs. Because of the human health risks, working with this virus would need to be done in at least a Biological Safety level 3 (BSL-3) laboratory but preferably a BSL 4 laboratory. There are a limited number of BSL 4 laboratories in the world. Any work which will be currently undertaken in such high security laboratories would be focused on understanding the virus. The procedures to test a disinfectant against a virus is straight forward. Option 1 is to perform titrations of the virus with and without exposure to the disinfectant under test. Because most disinfectant are toxic to the culture system in which the virus is grown, a 4 log reduction in virus titer is regarded as sufficient to pass a product. The other option is to mix the virus with the recommended dilution of product under test and then test for survival of virus. This is only possible if the disinfectant under test proven to be non-toxic to the culture system used for the virus. Full protocols can be supplied if a laboratory can be found where this virus can be tested.

So the likelihood of getting test data on the efficacy of any disinfectant against the Covid-19 coronavirus is very small. Thus, when deciding what disinfectant to use to combat the virus, authorities will have no option but to look at efficacy data on other coronaviruses.

Fungisolve has been extensively tested against the avian coronavirus (*Infectious bronchitis virus*). Test results obtained against IB Virus have been included.

The “go-to” disinfectant in the case of a serious disease outbreak is often Virkon S. The efficacy of **Fungisolve** has been compared to that of Virkon S in various tests. The efficacy of the two products are very similar against all pathogens tested. Pathogens tested include the very difficult to kill naked viruses, enveloped viruses, bacterial endospores, Gram negative bacteria, Gram positive bacteria, yeast species and fungal species.

Fungisolve has two main advantages over Virkon S. **Fungisolve** is highly stable when diluted. Tests were performed up to nine months. Virkon S is not stable when diluted. **Fungisolve** is non-corrosive, where Virkon S is highly corrosive.

Conclusion

Fungisolve has been shown to be highly effective against coronaviruses. **Fungisolve** has also been shown to be highly effective against the significantly more difficult to inactivate naked viruses.

Fungisolve is the least toxic, highly effective disinfectant currently available.

Fungisolve is non-corrosive and highly stable when diluted. Fungisolve is not pH dependent and is not temperature sensitive.

Fungisolve would be the best disinfectant to use for the disinfection of all surfaces for the control of this virus.