

Introduction:

There are currently no antiviral drugs approved to treat SARS-CoV-2 or any human CoV. Three new human coronaviruses have emerged in the past 20 years: SARS-CoV in 2002, MERS-CoV in 2012, and SARS-CoV-2 in 2019. In fact, all human coronaviruses are thought to have emerged as zoonoses, the researchers pointed out. Zoonotic diseases are those that have made the species jump from animals into humans. Given the diversity of CoV strains in zoonotic reservoirs, an effective broad spectrum antiviral treatment is clearly needed for rapid response to new CoV outbreaks in humans and domesticated animals.

Our antiviral **food supplement** is a composition of natural substances which disrupts the interplay between the Coronavirus and host (human macrophage) interaction and breaks coronavirus activity against human network.

Other than a vaccination or potential other viral drugs currently tested for application against COVID-19, our food supplement is available in an orally available form and could not only be used to limit the spread of SARS-CoV-2, but could also control future outbreaks of other versions of coronaviruses. Moreover, our food supplement has shown promise in reducing lung damage in animal models (pigs and calves).

Basis/composition of the food supplement:

The basis for our food supplement is:

1. Specific Yeast Killer Protein
2. Specific Hydrolases and Effector
3. Specific Immunomodulator

Specific Yeast Killer Proteins are orally bioavailable proteins that have been shown to have a broad-spectrum antiviral activity against various unrelated RNA viruses. The Specific Yeast Killer protein are isolated by first fermenting specific yeasts and then isolating the Yeast Killer protein by centrifugation and ultrafiltration.

Available test/study results:

We tested the in-vivo efficacy of the orally bioavailable food supplement with the Specific Yeast Killer Protein in 4,000 young pigs. Our results in young ill pigs (mix of Coronavirus & Rotavirus) showed that when given as a treatment 12 or 24 hours after the start of infection, the Specific Yeast Killer Proteins reduced the degree of death infected animals for 80 % and after 2-3 days they were healthy. The mortality decreased by far more than 95%. It is expected, that while the therapeutic window of opportunity for treatment in young pigs was quite narrow, that this treatment window will be longer in humans - possibly spanning the first week of symptoms - because it takes longer for the disease to progress in humans than it does in animals.

Together, our data support the continued development of our food supplement as a potent broad spectrum antiviral that could be useful in treating contemporary, newly emerged, and emerging coronavirus infections of the future.

Competitive Advantages

Compared with other potential COVID-19 treatments or vaccines that must be administered intravenously, it is inherent to the nature of a food supplement that it can be delivered orally. In addition to ease of treatment, this offers a potential advantage for treating patients who are less unwell, or potentially for prophylaxis, for example, in a nursing home where many people have been exposed but are not yet sick. Furthermore, we will be able to supply a cure at much lower cost as

compared to a vaccine. As there are no side effects, the food supplement can furthermore be applied preventive.

Summary:

With three novel human coronaviruses emerging in the past 20 years, it is likely that we will continue to see more. Our food supplement holds promise to not only treat COVID-19 patients today, but to treat new coronaviruses that may emerge in the future.