

PROTECT - PREMISES - PEOPLE

VIRO CUBE

Air and Surfaces Decontamination Unit

Viro Cube is an air and surface Ozone contact killer for bacteria, viruses and spores. It destroys all odours, filters and purifies the air, so is ideal for allergy sufferers such as hay fever.

DESTROYS

- Coronavirus
- Influenza
- Norovirus
- Salmonella
- E.coli
- MRSA



Kills a range of bacteria, viruses and spores and distributes ozone effectively everywhere air can reach ozone can too



Uses no chemicals



Ozone degrades back to pure oxygen leaving no harmful by-products or residues (Is currently safely used in the food industry).



Attacks hard to reach areas



Eliminates Odours



Integrated ozone sensor monitors levels during the treatment cycle to comply with Health & Safety monitoring requirements



MEDICAL UNIVERSITY STUDY CONFIRMS THAT OZONE INACTIVATES COVID-19

Air Purification, Airzone, COVID19

Nara Medical University (Professor Toshikazu Yano, Director of Infectious Diseases, Takashi Kasahara, Director of Infectious Diseases) and MBT Consortium (members of the Subcommittee on Infectious Diseases: Quorl Holdings Co., Ltd., Sanyu Shoji Co., Ltd., Tamuratec Co., Ltd., Marusan Pharmaceutical Biotech Co., Ltd.)

The company's research team was the first in the world to confirm the inactivation of the new coronavirus by exposure to ozone gas.

“We also demonstrated academic practicality by experimentally clarifying the inactivation conditions”

The need to sterilize environments and equipment as a consequence of COVID-19 involves a lot of effort and time for manual cleaning.

One of the tools available to solve this problem was sterilization with ozone gas, but without clear scientific evidence, it was not possible to certify its use.

A research team led by Nara Medical University has been able to inactivate new coronaviruses through exposure to ozone gas.

In this report, we report that ozone inactivation of the new coronavirus has been conducted and the relationship between ozone concentration and exposure time and ozone inactivation has been clarified experimentally.

Ozone (chemical formula: O₃) is an allotropic form of oxygen, with a characteristic garlic-like odor. Its molecules are made up of three oxygen atoms.

It has the strongest oxidative power close to fluoride and destroys cells like bacteria and decomposes the chemical bonds between substances.

It is effective in deodorization, sterilization and cleaning and is used in various fields such as medical care, nursing care, breeding and in the food sector.

As for the effectiveness of ozone, the bactericidal power of 7 times that of chlorine and has been considered “particularly effective” for the control of infectious diseases.

In Japan, the fire department of the Ministry of Internal Affairs and Communications introduced it to Japan for the first time in 2008, when it identified it as part of the measures to prevent the new flu infection and authorized its use in main airports.

Since then, application on medical sites has progressed and the number of medical institutions introducing ozone generators for the purpose of preventing the spread of healthcare associated infections has been increasing.

The bactericidal ozone-based approach has also been accepted as a measure against new coronavirus infection (COVID-19).

Since January of this year, when COVID-19 infection was spreading around the world, not only medical institutions, but also ambulances, hospitals, hotels, etc. have adopted ozone generators. Ozone has definitely gained widespread use as an effective sterilization method comparable to manual alcohol cleaning.

Experiment content and procedure

- Cultivate a new cell line of coronavirus,
- Place a stainless steel plate in an ozone-proof hermetic box installed in a safety cabinet
- Apply the new coronavirus to be tested.
- Use an ozonator (medical device certified by PMDA: ozone generator) installed in the ozone-proof hermetic box, the ozone concentration in the ozone-proof hermetic box is controlled and maintained from 1.0 to 6.0 ppm. The amount of ozone exposure is set by the CT value. (The CT 330 value is used, which is a verification test value for the certification of medical devices by the PMDA of the Ministry of Health, Labor and Wellness).
- After exposure, inoculate the cells with the virus,
- determine if the virus has infected the cells and calculate the amount of virus.

This experiment was possible because the University has a biosecurity level 3 laboratory and virus culture technology.

With a CT value of 330 (55 minute exposure to an ozone concentration of 6 ppm), it was inactivated from 1 / 1,000 to 1 / 10,000.

1. At a CT value of 60 (60 minutes of exposure to an ozone concentration of 1 ppm), it was inactivated from 1/10 to 1/100.

Experimental device

In this study, we confirmed that ozone can inactivate up to 1 / 10,000.

This shows that in real conditions and using ozone, the new coronavirus can be inactivated on all