



**Photocatalytic "new coronavirus" (SARS-CoV-2) Infectivity suppression effect
Against the novel coronavirus floating in a fixed space * 1
Confirmed the effect of suppressing infectivity by a disinfectant deodorizer equipped with a
photocatalyst**

Kaltech Corporation (Headquarters: Chuo-ku, Osaka, President: Junichi Somei) , in collaboration with RIKEN, collaborated with Nihon University School of Medicine to test the effectiveness of photocatalysts against the novel coronavirus (SARS-CoV-2). Was carried out at an advanced facility (Biosafety Level 3) in Nihon University, and the infectivity suppression effect was confirmed. In addition, in order to verify the effectiveness of the photocatalyst in real life, we used a commercially available photocatalyst-equipped sterilization deodorizer as a stepping stone to test the effectiveness of the novel coronavirus floating in a given space. As a result, the recovered virus titer was below the detection limit, and the infectivity suppression effect was confirmed. In addition, this experiment is the result of the experiment in a specific given space, which does not represent the effect in other open environment. (* 1: 120 liter closed chamber, width 60 cm, depth 40 cm, height 50 cm)

Overcoming the threat to our society of the new coronavirus is a vital issue, and these tests for infectivity of the new coronavirus are performed in order to realize a society "with corona" – that coexists with the new coronavirus. Therefore it is necessary to accurately verify the technology that will be effective for the suppression of the virus. At our company, it is our mission to establish a collaboration between industry and academia, to make known data obtained in these demonstration experiments using photocatalysts in social situations, and to contribute to the prevention of the spread of infectious diseases in the future through the knowledge gained.

■ Researcher's comment: Yoko Aida

Department of Internal Medicine, Department of Internal Medicine, Nihon University School of Medicine
Senior Visiting Researcher / RIKEN

In a world first, it was demonstrated that photocatalytic technology eliminates the infectivity of "novel coronavirus" floating in the air below the detection limit. By using photocatalytic technology. It is expected to build a safe and clean environmental space to realize a "With Corona" society.

■ Experiment contents and results

< Experiment① >

【Experiment Name】 Efficacy evaluation of new coronavirus by photocatalyst

【Test virus】 coronavirus (SARS-CoV-2 virus) 【Examined Goods】 Photocatalyst (provided by Kaltech)

【Test method】

2 ml of the new coronavirus solution is dropped on a 3 cm square photocatalyst and illuminated with an LED that serves as the excitation light for the photocatalytic reaction. Virus titers were measured for each irradiation time to investigate the effectiveness and time dependence of inactivation.

【Test results】

The infectivity of the virus decreased by the photocatalytic reaction, and after 120 minutes of irradiation, it fell below the detection limit, confirming the inactivation of the virus. The photocatalytic inactivation reaction is time-dependent and has an exponential reaction.

< Experiment② >

【Experiment Name】 Efficacy evaluation of new coronavirus by equipment equipped with photocatalyst

【Test virus】 New coronavirus (SARS-CoV-2 virus) 【Examined Goods】 a disinfectant deodorizer equipped with a photocatalyst (provided by Kaltech)

【Test method】

A new aerosolized coronavirus is sprayed into a 120-liter closed chamber, and a photocatalyst-equipped sterilization deodorizer installed in the chamber is operated. The virus was collected every operating time and the virus infection titer was confirmed.

【Test results】

The virus titer recovered when the sterilization deodorizer was operated for 20 minutes fell below the detection limit. It was confirmed that the effect of suppressing the new coronavirus by a device equipped with a photocatalyst installed in a certain space is effective against the floating new coronavirus.

[Contact info.]

Kaltech Corporation PR ✉ koho.1@kaltec.co.jp