

## The new horizon of Vitamin C

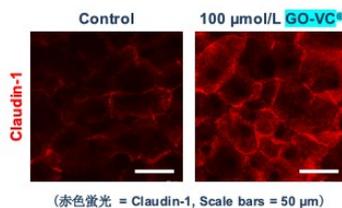
We are pleased to announce that a new effect has been discovered on a stable amphipathic vitamin C derivative (GO-VC) developed by us and sold as a raw material since 2015.

Vitamin C (ascorbic acid) is one of the essential nutrients for humans, and is an essential nutrient for the synthesis of collagen and neurotransmitters etc.. Dr. Linus Pauling, a Nobel Prize-winning chemist in the United States, published a book that vitamin C is effective against influenza and cancer, and its books became a hot topic all over the world. Furthermore, scientists in the United States published a treatise that high-concentration infusion of ascorbic acid kills cancer cells, and that the mechanism is due to hydrogen peroxide generated by ascorbic acid in cancer cells. In recent years, Vitamin C has been announced that it can be a signal factor for various protein synthesis in the living body, and new discoveries are being made one after another.

We are pleased to announce that we have discovered a new phenomenon that has not been discovered so far in a study using stable amphipathic vitamin C derivatives (GO-VC).

1) Increases the production of tight-junction-related proteins that play an important role in the skin barrier and moisturizing function, promotes the rise of skin water content, and suppresses water evaporation from the skin.

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2) Increases the production of related proteins involved in the differentiation of epidermal keratinocytes into corneocytes, which is important for the moisturizing function of the skin, and strengthens the barrier function of the skin.

3) Shows high antiviral activity (95% or more) at low concentration (0.3%) against coronavirus that infects animals and causes disease.

It was thought that the fact that vitamin C enhances the moisturizing effect of the skin is due to the fact that vitamin C enhances collagen, hyaluronic acid, and ceramide synthesis. However, our researchers are the first in the world to discover a new phenomenon that has been unknown until now that stable amphipathic vitamin C derivatives (GO-VC) are involved in tight junctions and stratum corneum differentiation-related proteins. As a result, we have presented a completely new mechanism of action for the moisturizing function of vitamin C.

It's been thirty years since Dr. Linus Pauling said that vitamin C is effective against colds, and this discovery of GO-VC is a direct and clarified proof of the antiviral effect on coronavirus.

We will do our utmost to develop products and formulations that can effectively demonstrate these discoveries, and will continue to strive to deliver them to everyone as soon as possible.

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