Molecular Hydrogen: Attenuates progression of Chronic Heart Failure (CHF)

KYK Hydrogen Water | 1,500 PPB of DH | KYK Co., Ltd. (South Korea)

- Chronic heart failure (CHF)

Chronic heart failure (CHF), the end-stage of various heart diseases, continues to cause substantial morbidity and mortality, ideally treatment for CHF needs to improve. CHF is a complex syndrome characterized by defecting bioenergetics, altering signal transduction pathways, and abnormal calcium homeostasis. In addition, apoptosis serves as another mechanism for the aggravation of CHF. Acute oxidative stress causes severe injury to tissues, and continuous oxidative stress is one of the reasons of abundant chronic diseases, tumor and senility. A majority of intracellular reactive oxygen species (ROS) are by-products of mitochondrial metabolism. Bioenergetic activity and mitochondrial dysfunctions result in the generation of excess amounts of oxidant stress and further enhance cardiomyocytes apoptosis.

-How Molecular Hydrogen Works?

Molecular hydrogen (H_2) has many potential therapeutic applications as a novel antioxidant. H_2 keeps tissues and cells safe from oxidative stress injury by eliminating ROS. As regulatory signaling molecules, ROS plays an important role in a mass of signal transduction cascades and also modulates bioprocess apoptosis. Continuous damage from oxidative stress is an important mechanism that facilitates CHF. H_2 protects cardiomyocytes and myocardial tissues of the failing heart against apoptosis by inhibiting oxidative stress. This process is carried out by inhibiting phosphorylation and transcription of p53 to Bax. H_2 decreases p53 protein by targeting apoptosis in the treatment of CHF. H_2 may protect CHF from progressing in apoptosis pathway much more completely than other antioxidants. The anti-fibrosis effect of H_2 may decrease the area of fibrosis in isoprenaline induced CHF. Inhalation of H_2 is not only harmless to myocardium but also helpful for diastolic function.