

Manuscripts

Title : Oryza oil & Fat Chemicals Co., Ltd has patented that effect of “Purple Tea Extract” and its main constituents “GHG” on the efficacy of muscle metabolism in the U.S.

In 2013, Oryza Oil and Fat Chemicals Co., Ltd launched the world’s first hit product “Purple Tea Extract” in Japan. Its main constituents 1,2-di-O-galloyl-4,6-O-(S)-hexahydroxydiphenoyl-b-D-glucose (herein after referred to GHG) has been patented in the U.S. for its AMPK activation ability. This patent was granted in Japan in August 2021 and an international application has also been filed in the U.S.

AMPK, also called AMP-activated protein kinase, is an enzyme that exists as an energy sensor in cells and activates energy production in response to a decrease in energy levels. In fact, it has been reported that the administration of AMPK in mice, their running endurance was improved by 44% and the percentage of subcutaneous fat decreased without exercising.

Therefore, our company focused on AMPK, an important factor in determining the quality of exercise (motivation switch). To investigate the mechanism of how “Purple Tea Extract” and its main constituents “GHG” promotes energy production in muscle, we used the mouse myoblast cell line C2C12, which was isolated from mouse skeletal muscle and cultured to examined its AMPK activity. “Myoblasts” are the cells from which muscle is derived, and they become muscle by changing “myoblasts” into “myofibers” (This is called “differentiation”). As a result, we found that “Purple Tea Extract” and its main constituents “GHG” activated AMPK in both (1) cells undergoing differentiation induction (cells in which myoblasts are changing into myofibers (pC2C12) and (2) cells after differentiation induction (myoblasts have already changed into myofibers=dC2C12). The patent was obtained based on this finding. In other words, the efficiency of cell metabolism was found to be improved both ongoing and after muscle formation.

Oryza Oil and Fat Chemicals Co., Ltd has been marketing PurpleForce[®], “Purple Tea Extract” that improves athletic function, not only in Japan but also around the world. In 2020, Dr. Lopez, a leading sports nutrition expert, U.S. clinical institute, the Center for Applied Health Sciences (CAHS), confirmed the effects of intaking PurpleForce[®] on improving exercise performance, promoting recovery from post-workout fatigue, pumping up muscles, reducing fatigue and inflammation.

Since its launch in 2012, this product has been adopted in Japan and around the world. Furthermore, as part of our SDG activities, our company is developing a project to support Africa. Specifically, we donate a portion of the sale of Purple Tea to Plan International, an international NGO. With the acquisition of the patent, this product has further improved its position in the U.S. market, which is a major sports nutrition market, and is also expected to expand globally beyond the U.S.

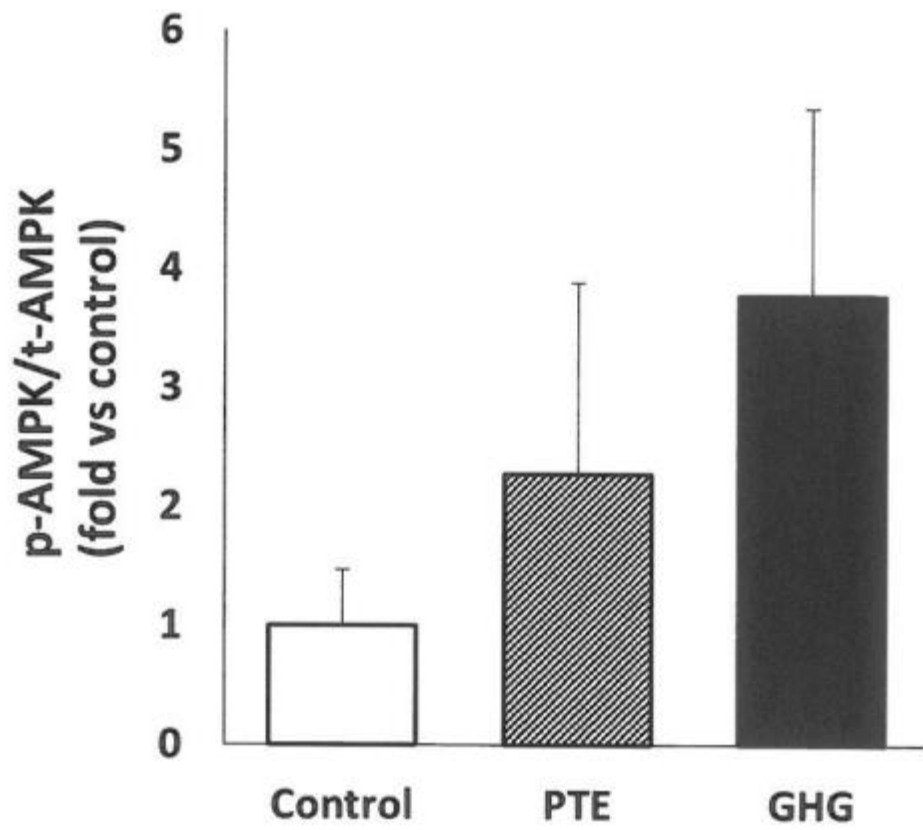


Figure. This graph shows that “Purple Tea Extract” (PTE) and its main component “GHG” activate the AMPK.