

First demonstration ! A clinical trial show that milk-derived β -lactolin boosts attention

— Finding has major potential for health science business —

The Kirin Central Research Institute (General Manager: Keiji Deuchi), part of Kirin Holdings Company, Limited (President and CEO: Yoshinori Isozaki) recently released the findings of a first study showing that the milk-derived peptide, β -lactolin, can enhance the cognitive function known as attention—the concentration of emotional energy on an object or idea. Kirin Holdings made the announcement at the 2020 conference of the Japan Society for Bioscience, Biotechnology and Agrochemistry (JSBBA) in March.

The research findings were presented by Dr. Yasuhisa Ano from the Kirin Central Research Institute. His research was recognized with the JSBBA Award for Corporate Researchers.

■ Title of presentation:

Supplementation with milk-derived β -lactolin enhances attention in healthy adults

● Background

With the steady aging of the Japanese population, the incidence of dementia and decline in cognitive function has become a major social issue. In the absence of effective therapeutic treatments for dementia, preventative measures in daily life have been increasing attention. Recent epidemiological studies reported that consumption with dairy products can help prevent dementia^{*1}. In 2015, Kirin Holdings and the University of Tokyo showed that camembert cheese can prevent Alzheimer's disease in a preclinical study. Kirin Holdings has identified the milk-derived peptide, β -lactolin, as a responsible ingredient for cognitive functioning, and developed a food material rich in β -lactolin.

Subsequent human clinical trials conducted by Kirin Holdings in 2019 demonstrated that β -lactolin can enhance memory and recall function in healthy adult.

● About the research

The effects of β -lactolin on cognitive function was investigated using a double blind randomized comparative trial with healthy participants in middle age and above. The β -lactolin group showed a statistically significant improvement in attention compared with the placebo group. The study is the first clinical trial to demonstrate that milk-derived β -lactolin can improve attention. Taken together with the previous report the cognitive performance improvement by β -lactolin may be associated with the frontal lobe dorsolateral prefrontal cortex^{*2}.

• Method

114 healthy participants between 50 and 75-year-old were randomly allocated into two groups. One group was given the β -lactolin supplement for 12 weeks while the other was given a placebo over the same period. The cognitive functioning of all subjects was evaluated via neuropsychological testing at zero, six and 12 weeks.

•Results

At six weeks of the intervention, the β -lactolin group showed statistically significant improvement on a visual cancellation task*⁴ from the Clinical Assessment for Attention (CAT)*³ test compared with the placebo group (see Figure 1).

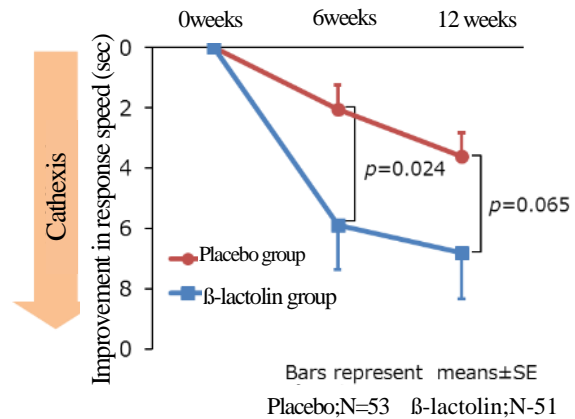


Figure 1 Results of visual cancellation task

● Future outlook

Kirin Group Vision 2027 (KV2027), the long-term management vision from the Kirin group, sets out the broad aims of creating value across our Food & Beverages to Pharmaceuticals and becoming a global leader in CSV*⁵. KV2027 also calls for the establishment of a new Health Sciences domain to augment the existing business Food & Beverages domain (alcoholic and non-alcoholic beverages) and Pharmaceuticals domain (pharmaceutical products). The Kirin group aim to contribute to the improvement of cognitive function through food.

■ About the JSBBA Award for Corporate Researchers

The JSBBA Award for Corporate Researchers recognizes outstanding research led by members working for registered businesses where the research findings have been presented at the national conference of the JSBBA or an equivalent forum. The Award aims to promote and encourage academic endeavors by corporate researchers.

- Winner: Yasuhisa Ano, Ph.D, Kirin Central Research Institute, R&D Division, Kirin Holdings

*1 Ozawa et al, J. Am .Geriatr. Soc., 2014

*2 The upper portion of the prefrontal cortex, which plays a key role in cognitive functions such as working memory, cathexis, attention control, and inhibition.

*3 Language memory assessment test developed by the Japan Society for Higher Brain Dysfunction (JSHBD).

*4 Selective attention test employed as a memory cancellation test for the purpose of the study.

*5 Creating Shared Value = generating value to be shared with our customers and society in general.

KIRIN brings joy to society by crafting food and healthcare products inspired by the blessings of nature and the insights of our customers.