News Release

November 4, 2025

Clinical trial confirms that *Lactococcus lactis* strain Plasma（LC-Plasma）may reduce fever and fatigue in healthcare workers

TOKYO, November 4, 2025 - Kirin Holdings Company, Limited (Kirin Holdings), in collaboration with the Tropical Infectious Disease Research and Education Center (TIDREC) at the Universiti Malaya in Malaysia and the National Institute of Nutrition in Vietnam, conducted a joint clinical study to evaluate the efficacy of the proprietary postbiotic ingredient LC-Plasma.The study confirmed that consumption of LC-Plasma significantly reduced the number of days Vietnamese medical students at high risk of infection experienced fever and fatigue. Additionally, the culture supernatant of peripheral blood mononuclear cells (PBMCs) from these individuals was found to suppress viral replication *in vitro*.These findings were presented at the 20th Asia Pacific Congress of Clinical Microbiology and Infectious Diseases (APCCMI), held in Bangkok, Thailand, from November 2 to 4, 2025.

Our company has previously demonstrated the efficacy of LC-Plasma against tropical infectious diseases through multiple studies conducted primarily in Southeast Asia.[*1]In this clinical trial, the effectiveness of LC-Plasma was evaluated in healthcare workers who are at high risk of infection. This group represents a significant challenge in clinical practice. The results showed that ingestion of LC-Plasma reduced the number of days participants experienced fever and fatigue.In addition, the culture supernatant of peripheral blood mononuclear cells (PBMCs) from these individuals was found to suppress viral replication *in vitro*.

For individuals such as healthcare workers who are continuously exposed to environments with a high risk of viral infection, incorporating immune care[*2] into daily routines may provide meaningful health benefits.

We will continue our research to prepare for infectious disease outbreaks and emerging infectious threats.[*3] By promoting a new health habit called immune care, which can be easily practiced by anyone, we aim to contribute to public health and peace of mind.

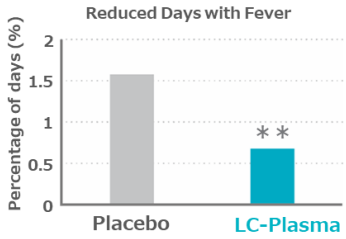
*1 Low ZX u et al, Microorganisms 13 ; 2304 (2024)

*2 A healthy lifestyle that supports immune function, including a regular daily routine, balanced nutrition, adequate sleep, and moderate physical activity, is recommended.

*3 Infectious diseases that were previously unknown but have been newly identified within the past 20 years, and which have become public health concerns either locally or globally. (https://www.who.int/publications/i/item/9789290224587?utm_source=chatgpt.com)

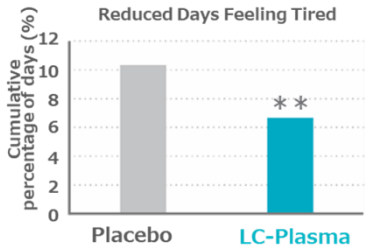
■Research Findings (Summary)

A total of 101 medical students were divided into two groups: one group received LC-Plasma, and the other received a placebo. The intervention lasted for four weeks, during which symptoms and immune responses in the blood were monitored and compared.The results showed that the LC-Plasma group experienced a significantly lower proportion of days with fever or fatigue compared to the placebo group.



** Statistically significant difference between groups (P < 0.05)

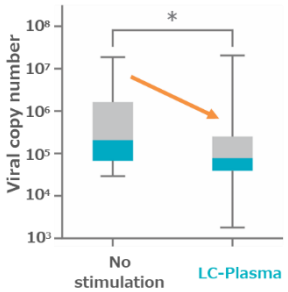
Figure 1: Proportion of Days with Fever



** Statistically significant difference between groups (P < 0.05)

Figure 2: Percentage of Days with Fatigue

Additionally, the culture supernatant of blood-derived immune cells from the group that consumed LC-Plasma was found to suppress viral replication.[*4]



* Statistically significant difference between groups (P < 0.01)

Figure 3: Viral load (Dengue virus RNA copy number)

* 4 Dengue virus was used as the test virus.

■Implications

LC-Plasma intake may help prevent viral infections, such as dengue virus, by reducing symptoms like fever and fatigue and enhancing the expression of antiviral genes.

■Future Prospects

We will continue to explore the potential application of LC-Plasma in regions with a high risk of infectious diseases, such as Southeast Asia. Through these efforts, we aim to contribute to addressing global public health challenges and promoting both physical well-being and peace of mind.

About Kirin Holdings

Kirin Holdings Company, Limited is an international company that operates in the Food & Beverages domain (Food & Beverages businesses), Pharmaceuticals domain (Pharmaceuticals businesses), and Health Science domain (Health Science business), both in Japan and across the globe.

Kirin Holdings can trace its roots to Japan Brewery, which was established in 1885. Japan Brewery became Kirin Brewery in 1907. Since then, the company has expanded its business with fermentation and biotechnology as its core technologies, and entered the pharmaceutical business in the 1980s, all of which continue to be global growth centers. In 2007, Kirin Holdings was established as a pure holding company and is currently focusing on boosting its Health Science domain.

Under the *Kirin Group Vision 2027* (KV 2027), a long-term management plan launched in 2019, the Kirin Group aims to become "A global leader in CSV*, creating value across our world of Food & Beverages to Pharmaceuticals". Going forward, the Kirin Group will continue to leverage its strengths to create both social and economic value through its businesses, with the aim of achieving sustainable growth in corporate value.

* Creating Shared Value. Combined added value for consumers and society at large.