



Morinaga Milk's Probiotic *Bifidobacterium infantis* M-63

Alleviates Mental Stress of Flood Victims

TOKYO (JAN, 2019) — Morinaga Milk Industry Co., Ltd. (TOKYO:2264), a leading Japanese dairy product company, today announced new research showing that consumption of its proprietary probiotic **Morinaga *Bifidobacterium infantis* M-63** improved the mental state of victims of the disastrous 2014-2015 flood in Malaysia, collaborating with the Universiti Sains Malaysia (USM).

One of the hottest topics in scientific research today is how a person's microbiome influences his or her health in ways previously not imagined. This newfound buzz has stemmed from the publication of a multitude of recent studies, which have linked seemingly diverse health issues – including digestion, immunity, weight management, and even mental health – to the makeup of an individual's intestinal microflora. A pioneer in research on bifidobacteria and gut microbiota, Morinaga Milk has conducted substantial research on probiotics and their beneficial effects on human health.

In December 2014, one of the worst floods in decades hit Malaysia. During floods, poor environmental hygiene leads to exposure to elevated levels of pathogenic bacteria, which is known to cause digestive illness and lead to additional physical as well as psychological problems. Since medical interventions to support victims' health are required not only when disaster strikes but also during the recovery period, Morinaga Milk and USM studied the effects of consuming *Bifidobacterium infantis* M-63 on study participants' psychological health after the flood.

“We conducted research involving 53 victims of the flood and found some significant differences in the composition of microbiota between subjects with and without abdominal abnormalities,” Professor Yeong Yeh Lee, School of Medical Sciences, USM, explained. “Through supplementation with *Bifidobacterium infantis* M-63, we succeeded in significantly alleviating the mental stress of those subjects with abdominal abnormalities.”

Study Design

The study was conducted between September and December of 2015 and followed 53 consented adults, in a non-random fashion, 20 with Irritable Bowel Syndrome were asked to take one sachet of *Bifidobacterium infantis* M-63 powder (2.5×10^9 per sachet) per day for three months (M-63 intake group). Also, 33 victims without digestive difficulties who did not take bifidobacteria served as controls (non-intake group).

Before and after the intervention, the subjects were evaluated for their mental state using **SF-36**, a health-related quality of life (QOL) questionnaire. A lower SF-36 scores indicate worse QOL. In addition, they provided fecal samples for comprehensive analysis of intestinal microflora using a next-generation sequencer. Researchers examined the relationship between abdominal difficulties, intestinal microflora, and the volunteers' mental state.

Study Results

1. M-63 Significantly Improved Mental Score

Before/after-intervention, total mental component score was improved significantly in the M-63 intake group (Before intake vs. after-intake = 75.0 vs 83.1, p value = 0.02). Also, mental well-being score was improved significantly (Before intake vs. after-intake = 70.0 vs 86.0, p value = 0.01)

2. Change of Intestinal Microflora May Be Correlated to Improvement of Mental Score

The results of the gut microbiota analysis in the current study revealed that the *Firmicutes/Bacteroidetes* ratio was significantly reduced in the M-63 intake group compared to the control group (p value=0.01). In addition, a significant negative correlation was observed between Mental Component Summary score and *Firmicutes/Bacteroidetes* ratio (ρ value = -0.37, p value = 0.04). This indicates that consumption of *Bifidobacterium infantis* M-63 can effectively improve mental well-being and that the improvement is probably related to a change in the ratio of gut microbiota.

“The gut-brain axis is now at the cutting edge of recent worldwide probiotics research,” Dr. Jinzhong Xiao, General Manager of Morinaga Milk’s Next Generation Science Institute, stated. “We are pleased that we have found a new potential use for our probiotics, but we are just on the starting line. We will continue to advance our research on the effects of bifidobacteria on human health.”

About Morinaga Milk

Morinaga Milk Industry Co., Ltd. is one of the leading dairy product companies in Japan. Morinaga Milk started research on bifidobacteria from the 1960s, inspired by the fact that bifidobacteria are the predominant bacteria residing the intestines of breast-fed infants. In 1969, Morinaga Milk isolated its flagship strain *Bifidobacterium longum* BB536 from a healthy infant. Currently, Morinaga Milk is engaged in research on the regulatory functions of various probiotic *Bifidobacterium* species in order to better understand their many beneficial health maintenance functions.

About *Bifidobacterium infantis* M-63

Bifidobacterium infantis M-63 is a proprietary material of Morinaga Milk. Research conducted so far has proved that the strain is effective in fortifying immune defense against foreign invaders, and when ingested in combination with other bifidobacteria (*Bifidobacterium longum* BB536 and *Bifidobacterium breve* M-16V) improves the symptoms of occasional loose stool and/or constipation. For more information about Morinaga *Bifidobacteria*, please visit us at <http://bb536.jp/english/index.html>.

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