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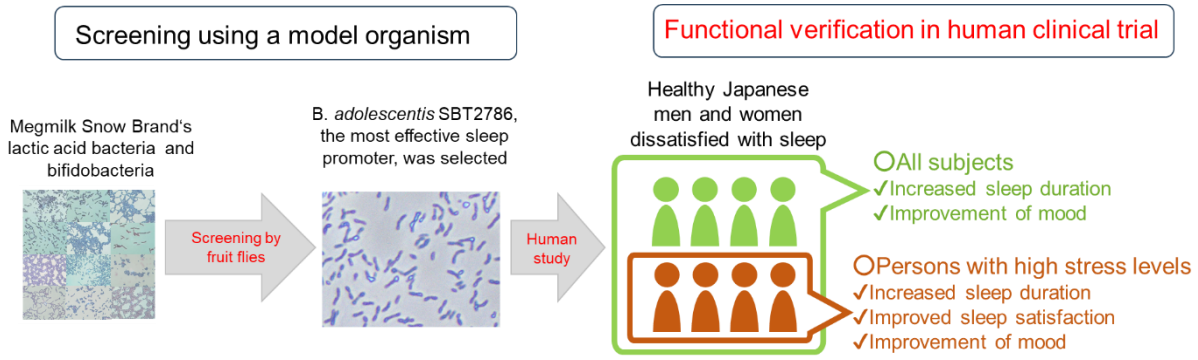
MEGMILK SNOW BRAND's *Bifidobacterium adolecentis* SBT2786 Confirmed to Improve Sleep Quality in Humans

Bifidobacterium adolescentis SBT2786 (hereinafter, "SBT2786") owned by MEGMILK SNOW BRAND Co., Ltd. (headquarters: Shinjuku-ku, Tokyo; Representative Director and President: Masatoshi Sato) improve the sleep quality of people who are dissatisfied with their daily sleep, especially those who are under high stress, and also improve mood, according to a clinical trial conducted on volunteers.

The research results were published in *Nutrients*, an international journal on nutrition and health.

■Key Points of This Study



MEGMILK SNOW BRAND conducted a clinical trial to verify the efficacy in humans of SBT2786, which was selected from among lactic acid bacteria and bifidobacteria owned by MEGMILK SNOW BRAND as a bacterium with sleep-promoting effect using fruit flies.

[Results]

We found that consumption of SBT2786 increased sleep duration and improved mood

Further analysis on those with higher stress levels showed that sleepiness upon waking and sleep satisfaction were improved in addition to increase sleep duration.

This indicates that SBT2786 is effective in improving sleep quality in humans.

In 2017, we established an industry-academia collaboration research laboratory with Nagoya University to promote functional evaluation of foods using model organisms. As one of the alternative methods to traditional animal experiments, we are working to establish a method for evaluating the health functions of foods using model organisms such as *Drosophila melanogaster* (fruit flies) and *Caenorhabditis elegans* (nematodes). These model organisms are widely used

to elucidate life phenomena, but have not yet been fully utilized to evaluate the health functions of foods. In our previous study, we found that *Bifidobacterium adolescentis* SBT2786 has the most potent sleep-promoting effect on fruit flies, although it was not yet clear whether it has a sleep-improving effect in humans.

In this clinical trial, we confirmed that SBT2786 is effective in humans. This is an example of a successful result in which the functionality found by screening using model organisms was shown to be effective in humans, and is an achievement that demonstrates new possibilities for functional food research.

We will continue to further advance this research and develop products that contribute to people's health and rich dietary life.

■Paper Summary

[Background and Objectives]

In today's society, sleep disorders and sleep disruption have become increasingly common due to changing lifestyles, irregular work schedules, and the prevalence of unhealthy habits. Sleep deprivation is a significant public health problem because it is strongly associated not only with daytime sleepiness and decreased productivity, but also with physical and mental health problems such as cardiovascular disease, obesity, diabetes, and depression.

Fruit flies are known to exhibit sleep-like behaviors and their sleep mechanism is similar to that of mammals. We previously found that SBT2786 had the most potent sleep-promoting effect among the species tested. Therefore, we conducted a clinical trial to confirm whether SBT2786 also has sleep-improving effects in humans.

[About the Study]

▽Study method: Randomized, Double-Blind, Placebo-Controlled Study

▽Subjects : Japanese adult male and female volunteer subjects who are dissatisfied with their daily sleep

▽Duration: 4 weeks

▽Test Group: Two groups (daily intake)

(1) Group taking capsules containing 100 billion cells of SBT2786

(2) Group taking capsules with no effect (placebo)

▽Evaluation methods: Three methods of evaluation

(1) Monitoring of sleep states by electroencephalograph

(2) Evaluation of sleep satisfaction through multiple questionnaires

(3) Questionnaire to assess mood states

[Results]

The group that took SBT2786 showed the following.

・Prolonged sleep duration and improvement of mood in all subjects who took the capsule.

・Further analysis of the subjects with high stress levels in the group showed that sleep duration

was prolonged and sleep satisfaction was improved.

■Presentation Overview

Title of paper: *Bifidobacterium adolescentis* SBT2786 Improves Sleep Quality in Japanese Adults with Relatively High Levels of Stress: A Randomized, Double-Blind, Placebo-Controlled Study

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[Related Press Release]

・May 9, 2017: https://www.meg-snow.com/news/files/20170509-1343.pdf

Title: Establishment of the Industry-Academia Collaboration Research Laboratory "Nutritional Neuroscience" with Nagoya University

・April 28, 2023: https://www.meg-snow.com/news/2023/18595/

Title: Confirmation that *Bifidobacterium adolescentis* SBT2786 Promotes Sleep in *Drosophila* by an Industry-Academia Collaboration Research Laboratory with Nagoya University

●Glossary of Terms

・*Bifidobacterium adolescentis*:

One of the predominant species of *Bifidobacterium* living in the intestinal tract of human adults.

・Model organism:

An organism used in research to clarify universal life phenomena.

Among them, *Drosophila melanogaster* (fruit flies) have long been used in genetics and biology because of their short life cycle and ease of genetic manipulation. They are also used in research to elucidate the mechanisms of sleep, as they exhibit sleep-like behaviors similar to those of mammals.

・Randomized, Double-Blind, Placebo-Controlled Study :

One of the most reliable study methods for ascertaining efficacy.

Participants are randomly divided into two groups, with neither the participants nor the physicians knowing which group they belong to.

・Electroencephalograph:

By recording the electrical activity of the brain, it is possible to assess sleep status (e.g., determining sleep stage).