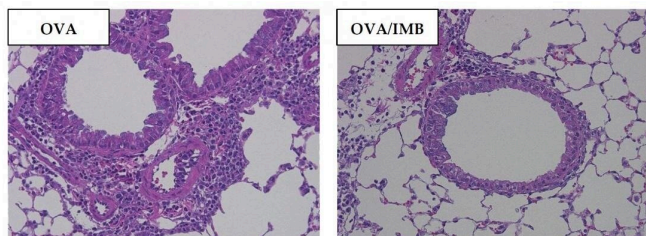


Fermented soybeans suppress asthma-induced airway inflammation

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Representative images of lung tissues with HE staining showing inflammation suppressed in the group treated with ImmuBalance Credit: Osaka City University

Bronchial asthma causes symptoms such as wheezing and cough due to chronic airway inflammation, but there is no fundamental treatment for it, leaving a desire for new prevention and treatment methods. Now a new study reveals that a fermented soy product called ImmuBalance suppresses airway inflammation in animal models of asthma.

Researchers from the Department of Respiratory Medicine, Osaka City University Graduate School of Medicine have found that in a ImmuBalance-treated group of asthma model mice, white blood cells associated with asthma called eosinophils were significantly reduced in the bronchoalveolar lavage fluid (BALF). Also, in addition to a decrease in inflammation and mucus around the bronchi, the team found a suppression of proteins that induce eosinophilic inflammation.

"The relationship between [soy intake](#) and allergic diseases has been epidemiologically reported in the past," explained Hideaki Kadotani, first author of the study, "suggesting that the components of soy may have some anti-allergic effects"

"It was reported that imbalances in the [gut microbiota](#) may be involved in [immune system](#) and

[allergic diseases](#), and fermented dietary fiber, like that found in soy, might have beneficial effects in allergic asthma models." continues Associate Professor Kazuhisa Asai, supporting author of the study.

In the study, the effects of such an imbalance on asthma were examined by giving ImmuBalance-enriched feed to asthma model mice. In the ImmuBalance-treated group, the number of eosinophils in BALF was significantly reduced, and inflammation around the bronchi and mucus production in the bronchial epithelium was suppressed. Also, the expression of Th2 cytokines and the immunoglobulin serum IgE that induce eosinophilic inflammation in BALF were measured and found to be significantly suppressed when compared to mice fed a normal diet.

"In [clinical practice](#), steroid inhalants are the basis of asthma treatments, yet they are known to have [adverse side effects](#)," states Professor Tomoya Kawaguchi, lead advisor to the study. "Our results suggest that the intake of fermented soybean products should be recommended as a complementary coping strategy to asthma with fewer side effects."

These findings appear in the journal *Nutrients*.

More information: Hideaki Kadotani et al, The Fermented Soy Product ImmuBalance™ Suppresses Airway Inflammation in a Murine Model of Asthma, *Nutrients* (2021). [DOI: 10.3390/nu13103380](#)

Provided by Osaka City University

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