

# **Inhibitory effect of strawberry geranium on inflammatory response in skin keratinocytes**

April 23 2021

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Strawberry geranium (*Saxifraga stolonifera*), called yukinoshita in Japanese.  
Credit: Maruzen Pharmaceutical Co., Ltd

Strawberry geranium (*Saxifraga stolonifera*) has been used in Japan as a herbal medicine to treat wounds and swelling, and continues to be an ingredient in food and cosmetics. Pharmacological studies have shown that extracts of strawberry geranium have antioxidant and antitumor activities. However, the anti-inflammatory effect of strawberry geranium on the skin had not been well characterized.

This study, first-authored by associate professor Takeshi Kawahara of the Institute of Agriculture, Shinshu University for a joint research project with Maruzen Pharmaceutical Co., Ltd. succeeded in obtaining results which showed that the suppression of excessive immune response mediated by Toll-like receptor 2 (TLR2) to infectious microorganisms of skin keratinocytes which indicates [strawberry](#) geranium, called yukinoshita in Japanese can be a means of resolving routine infectious dermatitis.

Antibiotics against microorganisms and steroid-like components that suppress inflammation are generally used to control dermatitis, but the emergence of resistant bacteria and side effects due to chronic use are making them less desirable. Strawberry geranium provides a means to locally control inflammation on the body by provoking a limited immune response.





Strawberry geranium (*Saxifraga stolonifera*), called yukinoshita in Japanese.  
Credit: Maruzen Pharmaceutical Co., Ltd

Yukinoshita, which means "below the snow" in Japanese, is a highly safe plant substance with a proven track record that has been used for centuries in foods and in cosmetics. *Saxifraga stolonifera* is also known as a crude drug and though its [anti-inflammatory effect](#) has been known, the detailed mechanism of action had not been elucidated. It is expected to be applied as an anti-inflammatory material based on the expression-suppressing effect of the TLR2 molecule clarified by this study.

Based on the results of this research, the research group is planning to

conduct an efficacy test for people with mild acne. This approach has a different mechanism of action from conventional anti-inflammatory agents, but if useful results are obtained, it is expected that strawberry geranium can be widely used as an anti-inflammatory substance.



Strawberry geranium (*Saxifraga stolonifera*), called yukinoshita in Japanese.  
Credit: Maruzen Pharmaceutical Co., Ltd

**More information:** Takeshi Kawahara et al, Inhibitory effect of strawberry geranium (*Saxifraga stolonifera*) on Toll-like receptor 2-mediated inflammatory response in human skin keratinocytes, *Journal of Ethnopharmacology* (2021). [DOI: 10.1016/j.jep.2021.114039](https://doi.org/10.1016/j.jep.2021.114039)



Provided by Shinshu University

Citation: Inhibitory effect of strawberry geranium on inflammatory response in skin keratinocytes (2021, April 23) retrieved 19 April 2024 from

<https://medicalxpress.com/news/2021-04-inhibitory-effect-strawberry-geranium-inflammatory.html>

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