

## CRISPR could help produce allergen-free soybeans. Here's how it works

Food allergies occur when you eat .... and your immune system reacts to certain proteins in the food. Proteins that cause allergies are collectively called allergens, and more than 10 types of allergens are known in soybeans .... If mutations occur [in soy DNA], soybeans will not be able to produce allergen proteins. [Lecturer Tetsuya] Yamada's goal is to mutate genes by editing the genome.

...

CRISPR / Cas9 is a two-part complex consisting of a guide RNA and a Cas9 protein, where the guide RNA targets a specific sequence of DNA and Cas9 actually cuts it.

The DNA sequence at the cut site is immediately repaired by the repair mechanism of soybean, but in rare cases, an error occurs when the sequence is deleted or the sequence is replaced with another sequence. This error becomes a mutation that prevents the allergen protein from being produced in soybeans.

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However, CRISPR / Cas9 is not a magical tool that allows you to edit DNA as you wish in an instant. Mr. Yamada succeeded in developing low-allergen soybeans with two soybean varieties "Enrei" and "Kariyutaka," and published a paper summarizing the research results in 2020, but behind that is a two-year experiment.

[su\_panel color="#3A3A3A" border="1px solid #3A3A3A" radius="2" text\_align="left"]**Editor's note: This article was originally published in Japanese and has been translated and edited for clarity.**

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