

Metabolic engineering: Genetically-modified tomatoes that reduce inflammation developed in Japan

Scientists from the Tokyo University of Science and the Iwate Biotechnology Research Center have engineered potato and tomato plants to express the plant pigment betalain.

The pigment is found only in a few produce items and higher fungi, and researchers genetically engineered tomato and potato varieties to express the pigment, according to a news release.

The researchers found that while betalain-tomatoes conferred anti-inflammatory effects against macrophages and murine colitis, betalain-potatoes showed no such effects, the release said.

The research paper, called “[Metabolic engineering of betacyanin in vegetables for anti-inflammatory therapy](#),” was published in *Biotechnology and Bioengineering*.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.

[SIGN UP](#)

Betalains are a class of plant pigments that are responsible for the characteristic red-violet (betacyanin) or yellow (betaxanthin) color of certain fruits and vegetables, the release said.

These naturally occurring, water-soluble and nitrogen-containing pigments are commonly used as food coloring agents. Recently, research findings have brought to the forefront the strong antioxidant potential of betalains, making them potential candidates to produce health foods and combat various diseases, according to the release.

[**This is an excerpt. Read the original post here**](#)