

Name of Technology	Ca ²⁺ signal transmission inhibitors obtained from vegetables belonging to <i>Aralia</i> and <i>Apiaceae</i> families	Life Science
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Key words	vegetables belonging to <i>Aralia</i> and <i>Apiaceae</i> families, Falcarindiol, Ca ²⁺ signal transmission inhibitors, lifestyle-related diseases, Type 2 diabetes	

What kind of technology is this?

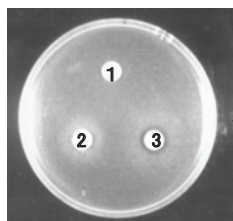
Outline

The components in vegetables belonging to *Aralia* and *Apiaceae* families inhibit Ca²⁺ signal transmission and thus may be effective for type 2 diabetes.

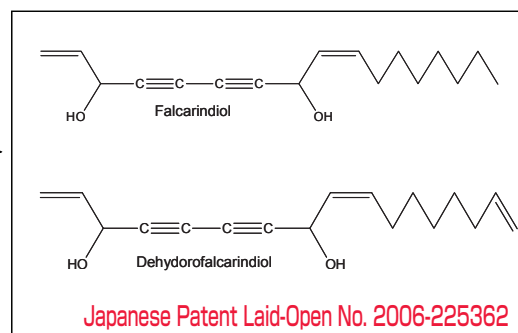
Using a screening system for the causes of lifestyle-related diseases, the activity of various foodstuff extracts was examined. When the activity was observed, the active component (bioprobe) was isolated and purified, the structure was identified, and the mode of action was studied (chemical biology). As a result, in the screening using yeast with a mutated gene involving Ca²⁺ signal transmission (*zds1Δ*), we found falcarindiols (formula shown below) in edible wild plants belonging to *Aralia* and *Apiaceae* families (udo, dropwort, honewort, carrot, *Angelica keiskei*, etc.) and submitted patent application for this as a Ca²⁺ signal transmission inhibitor (GSK-3β inhibitor). Falcarindiols have also exhibited beneficial effects in experiments with glucose-loaded animals.



Udo
(*Aralia cordata*)



1: Control, 2: FK506
3: Extract of Udo



What are its applications?

- ① Development of this functional substance itself as a pharmaceutical or a supplement
- ② Development as a components of functional foods such as Food for Specified Health Use utilizing its functional property.

Related patents	"Ca ²⁺ signal transmission inhibitors", Japanese Patent Laid-Open No. 2006-225362
Related materials	Kimura, K. et al. "Plant-derived Ca ²⁺ signal transmission inhibitors screened with yeast", <i>Bioscience and Industry</i> , 64, 214-218 (2006). Kimura, K.: "Functional substances obtained from foodstuffs using enzymes and yeast with a gene mutation -Aiming to bring drugs and foods together-," <i>The Food Industry</i> 50(6), 34-43 (2007).