

Intestinal Metabolites
Derived from Pomegranate

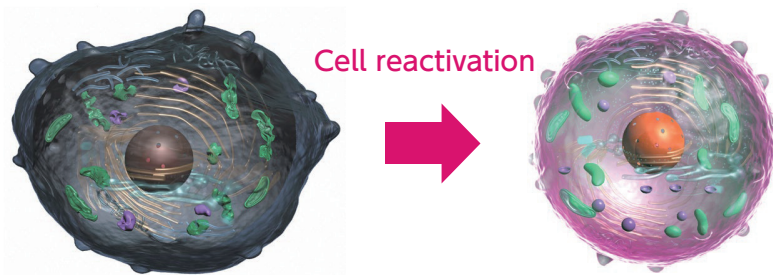
Urolithin A

Anti-aging material that reactivate cells

World's first. Urolithin A
produced by fermentation

Intestinal metabolites of pomegranate polyphenol

Pomegranate, also known as "super fruit", has long been reported to have health-enhancing properties and contains high levels of a polyphenol called ellagic acid. Ellagic acid is converted to "Urolithin A" by intestinal bacteria. Urolithin A is said to be the active form of pomegranate polyphenol and is attracting attention as an anti-aging material that reactivates cells by activating autophagy and the sirtuin genes. By activating both autophagy and sirtuin genes, Urolithin A is expected to promote intracellular metabolism and reactivate cells.



Daicel was the first to discover intestinal bacteria that produce Urolithin A and has succeeded in selectively mass-producing Urolithin A. Daicel uses a proprietary fermentation method based on a complex microbial system that utilizes anaerobic fermentation technology cultivated over many years.



*The Biotechnology Center (NBRC) of the National Institute of Technology and Evaluation (NITE) provided cooperation in the development of the Urolithin A fermentation technology.

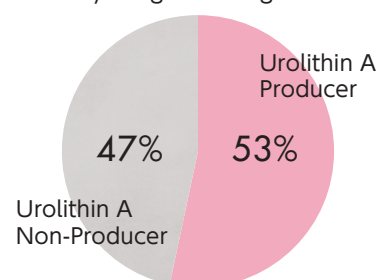
About 50% of people can produce Urolithin A in their intestines

Only about 50% of people can produce Urolithin A. Even if the ellagic acid of pomegranate polyphenol is ingested, it cannot be metabolized into Urolithin A unless the environment of the intestinal microflora is well controlled. Therefore, it is difficult to supply enough Urolithin A from daily dietary intake, and there were high expectations for the development of Urolithin A as a food ingredient.

※Our research. Urolithins in urine were analyzed after ingestion of ellagic acid.

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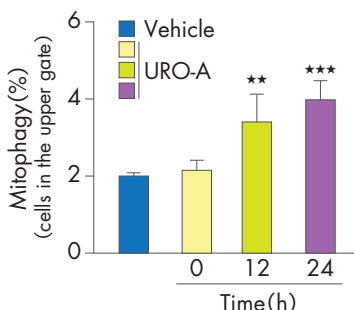
■ Urolithin A producers
by ellagic acid ingestion



Cell reactivation through autophagy and sirtuin gene activation

It has been reported that Urolithin A induces mitophagy, a type of autophagy. It is expected to contribute to health from the root of the body by reactivating cells through autophagy. Daicel is conducting joint research with Autophagy GO, Inc. to obtain evidence of the autophagy activity of Urolithin A.

Activity of Mitophagy by Urolithin A

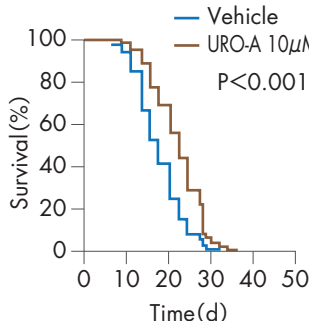


** p ≤ 0.01 vs control (vehicle)

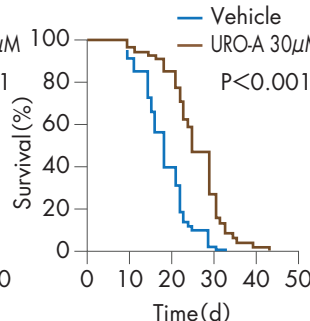
*** p ≤ 0.001 vs control (vehicle)

Source: D.Ryu et al., Nat. Med., 2016, 22, 879-888.

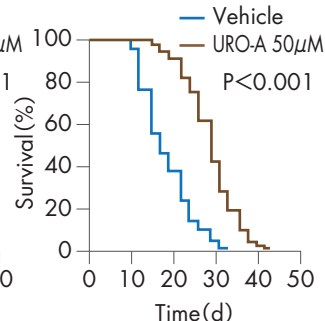
Effect of Urolithin A on Life Span Extension of *C.elegans*



P<0.001



P<0.001



P<0.001

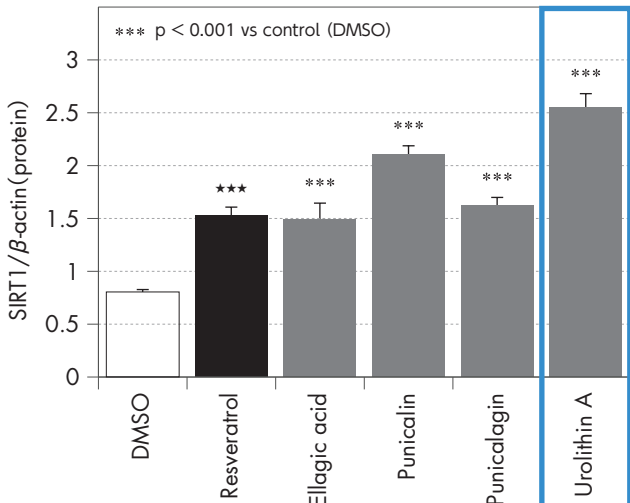
Enhanced expression of sirtuin genes

It has been reported that Urolithin A activates the SIRT1 gene, one of the sirtuin genes in cells, and repairs damaged DNA.

UV-induced DNA damage leads to cell death and skin aging such as wrinkles and spots. Urolithin A activates the SIRT1 gene, which repairs damaged DNA and prevents skin aging.



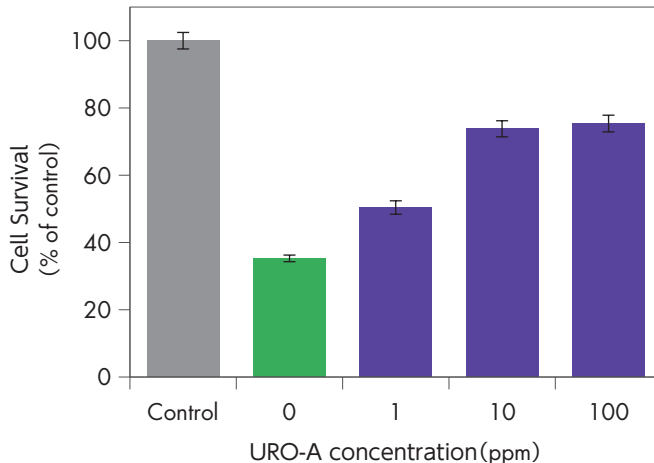
Activation of the SIRT1 gene by urolithin A



*** p < 0.001 vs control (DMSO)

Source: Z.Cohng et al., J.Funct.Foods, 2019, 54, 119-127.

Cell survival after UV irradiation



Product Specifications (Powder Type)

Appearance	Pale yellow to light brown powder with characteristic odor	Arsenic	≤2ppm
Urolithin A	≥10%	Aerobic Plate Count	≤3,000/g
Loss on Drying	≤7%	Yeasts and Molds	≤1,000/g
Lead	≤10ppm	Coliforms	Negative

Package

1kg Aluminium Bag
(Please store at room temperature in a dry place.)

DAICEL CORPORATION



Healthcare SBU Health Foods BU Marketing

JR Shinagawa East Bldg., 2-18-1, Konan, Minato-ku, Tokyo 108-8230, Japan
TEL: +81-3-6711-8213 FAX: +81-3-6711-8218

<https://www.daicel.com/healthcare/>

[Contact Information]

DAICEL ChemTech, Inc.

400 Kelby Street, Fort Lee, New Jersey 07024
TEL: +1-201-461-4466 FAX: +1-201-461-2776

<http://www.daicelchemtech.com/>

DAICEL Group