

Promotes stem cell vitalization Cutting-edge Reverse aging ingredient

HIF1STEM

Vitalizes stem cells by adjusting HIF-1

What is HIF1STEM?

HIF1STEM is a new food ingredient that vitalizes stem cells through its mechanism of adjusting HIF-1 in the body, and supporting reverse aging at the level of stem cells.

Thank to the broad spectrum research, finally we found strong effect toward HIF-1 on unique olive leaf, and successfully developed them into a food ingredient.



More than 10 years of research and development

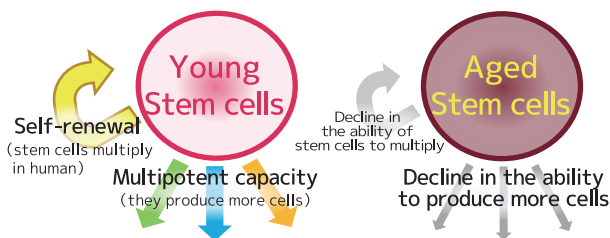
HIF1STEM was developed based on the results of the study on stem cell vitalization for more than 10 years by "SATREPS," a joint study project involving University of Tsukuba and overseas research organizations.

As part of this project, a study that started in 2010 discovered unique olive with a special ability to vitalize hematopoietic stem cells. It was put to practical use through collaboration between Isoda Laboratory, University of Tsukuba, and Nutrition Act.

What is Stem cell?

Our body is made up of about 60 trillion cells, which are organized into tissues of the body. "Stem cells" are the cells from which these various cells originated. Stem cells are capable of cell division and self-replication (proliferation), and also of differentiating into various cells comprising the body.

While they are extremely important for maintaining the cellular functions of the body, these two capabilities decline by age, contributing to the consequences of aging.



HIF-1 and stem cells

HIF-1 is a remarkable biologically active protein that attracted attention in the research "discovering how cells sense and adapt to oxygen availability," which was awarded the 2019 Nobel prize. Among a range of potential physiological activities, an adjustment of the level of HIF-1 is considered to promote stem cell proliferation and differentiation typically in a hypoxic environment.

HIF1STEM has been confirmed to adjust the level of HIF-1 and be effective in vitalizing stem cells even in a non-hypoxic environment.

University of
Tsukuba

Joint research

 Nutrition Act

SATREPS

地球規模課題対応国際科学技術協力プログラム

What is SATREPS?

In order to contribute to the attainment of sustainable development goals (SDGs) in the world, this research program led by Japan Science and Technology Agency (JST) and Japan International Cooperation Agency (JICA) aims to solve problems in developing countries using Japan's science and technology and commercialize the results.

Benefits

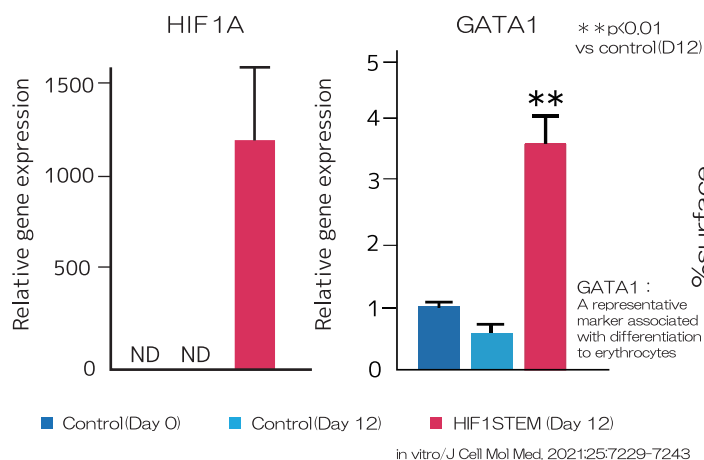
- Reverse-aging through stem cell vitalization
- Induction of erythrocyte differentiation
- Promotion of angiogenesis
- Improvement in blood flow
- Beauty skin
- ...other



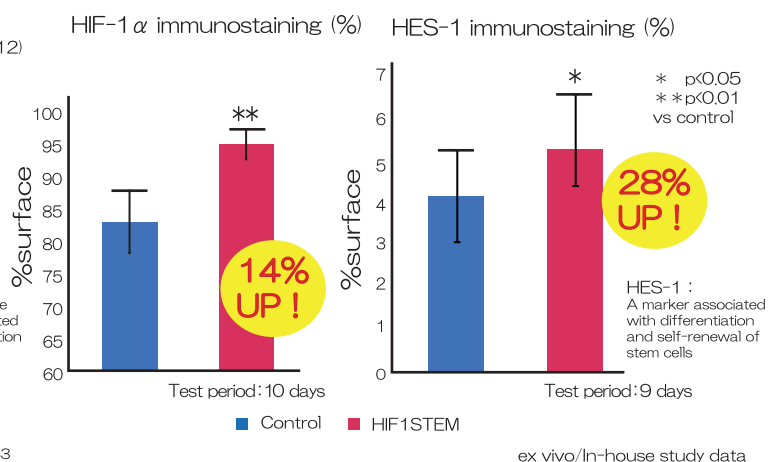
Stem cell vitalization effect

HIF1STEM has been confirmed to promote the vitalization of hematopoietic stem cells and epidermal stem cells by adjusting HIF-1.

[Vitalization of hematopoietic stem cells]

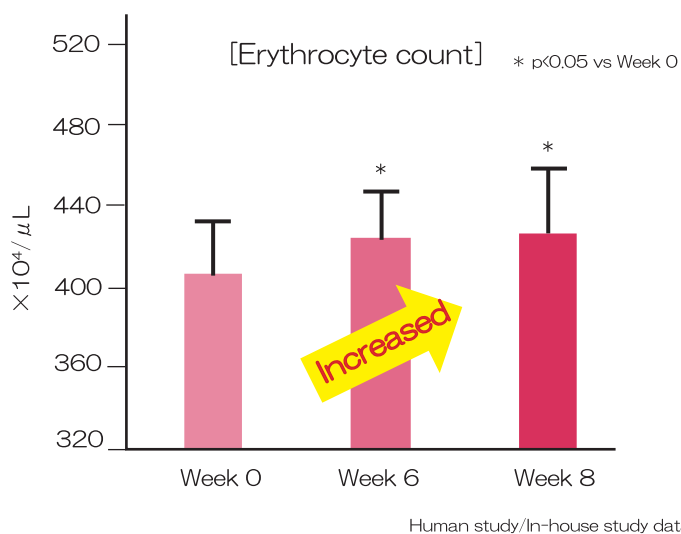


[Vitalization of epidermal stem cells]



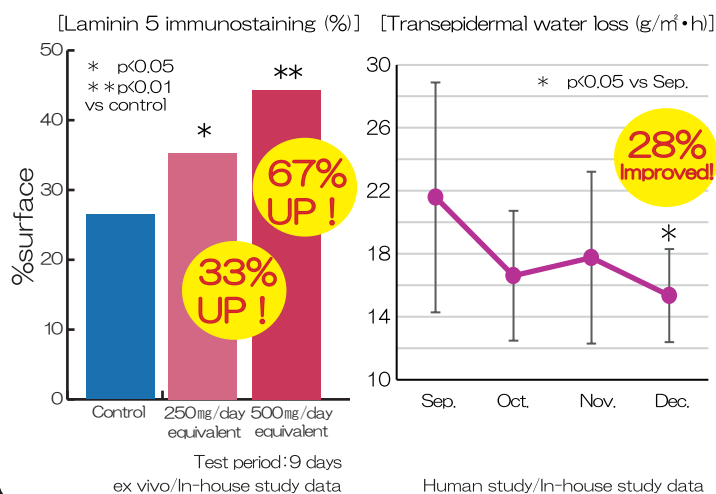
Erythrocyte increasing effect

Oral intake of HIF1STEM has been confirmed to enhance differentiation to erythrocytes.



Beauty Skin effect

The increase in HIF-1 is accompanied by the increase in "laminin 5", a constituent of basement membranes involved in epidermal stem cell differentiation. Improvement of skin barrier function and moisture retention have also been confirmed.



< Product specification >

Appearance	A dark yellow - brown hygroscopic powder Peculiar odor	Composition	Olive leaf extract (domestic manufacturing), Dextrin
Specification	Arsenic ≤3ppm Heavy metals(Pb) ≤10ppm Total Plate Count ≤3000 CFU/g Coliforms Absence E.coli Absence Yeast & Mould ≤100 CFU/g Other	Method of Storage	Needs extra care after opening, the product is hygroscopic
		Country of origin	Japan
		Safety	Negative on single dose toxicity test, 28-day repeated dose toxicity test, Ames test.



Developed and distributed by
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