

A material that reduces wrinkles, restores skin firmness, improves the barrier function and moisture retention function of the skin.

# CELABIO®

A highly safe plant-based material made by fermenting soybean extract and rice bran with Natto bacteria. It works well on skin cells and has beauty effects such as reducing wrinkles, restoring skin firmness, and improving the barrier function and moisture retention function of the skin.



Product Name		CELABIO®	
Cosmetics	Labeling name	INCI	Component ratio (%)
	Bacillus / (rice bran / soy bean extract) fermented liquid*	Bacillus/Rice Bran Extract/Soybean Extract Ferment Filtrate	0.8
	Water	Water	98.4
	Phenoxyethanol	Phenoxyethanol	0.6
	Ethanol	Alcohol	0.2
Standard dose	1L/brown bottle		
Storage	Cooled and light-protected		

\* Chinese name : 芽孢杆菌/米糠提取物/大豆提取物发酵产物滤液

SAFETY TEST ITEM	RESULT
Ames TEST	Negative
Human patch test (24 hours occlusion 20 human)	Safety concentration : 50%
Human Skin Phototoxicity Test (43 human)	Negative concentration : 50%

(Concentration: as CELABIO)

## Characteristics of CELABIO®

- Natural material of plant origin having high safety .
- Effects on the dermis (fibroblasts): Reduces wrinkles and restores skin firmness
  - Excellent fibroblast activation effect
  - Promotes the production of collagen and hyaluronic acid
- Effects on the epidermis (keratinocytes): Improves the barrier function and moisture retention function
  - Promotes the production of ceramide, involucrin, hyaluronic acid and filaggrin
- Effects on reducing wrinkles and restoring skin firmness were confirmed in human trials
- Synergistic effect (fibroblast activation) resulting from combining with other materials was confirmed
  - Synergistic effect with retinol (patent No. 4945556)
  - Synergistic effect with soybean peptide and silk peptide (patent No. 4945692)

Standard item	Standards	Test method
Appearance	Light yellow to yellowish brown semitransparent liquid with slightly characteristic odor	Sensory test
Identification test:(1)	Liquid shows purple	ninhydrin reaction method ※1
Identification test: (2)	The interface of both liquid presents purplish red color	Mauritian Reaction method ※2
pH	5.5~7.0	JSQI general test method
Ignition residue	2.0% or less	General testing method of the Japanese Standards for Quasi-drug ingredients
Evaporation residue	≥0.8%	Atmospheric heating drying method
Specific gravity	Actual measurement value	JSQI general test method
Heavy metal s (as Pb)	≤20 ppm	JSQI general test method
Arsenic (as As <sub>2</sub> O <sub>3</sub> )	≤2.0 ppm	ICP emission spectrometry
Aerobic plate count	≤100 cfu/mL	SCDLP agar culture
Coliform organisms	Negative	AOAC (Petrifilm method)
Viable molds and yeasts count	≤100cfu/ml	AOAC method (Petrifilm method)
Staphylococcus aureus	Negative	AOAC method (Petrifilm method)
Pseudomonas aeruginosa	Negative	Japanese Pharmacopoeia

※1 Add 1ml of ninhydrin reagent into 1ml of this product. Liquid becomes blue-purple when heating for 3 minutes.

※2 Dissolve dry residue in water and add 2 or 3 drops of 5% naphthol/ethanol solution into 2 ml of the residue solution and stir well. Then, the borderline of both liquids becomes purplish red to identify as glucose when adding 1ml of sulfuric acid gently.

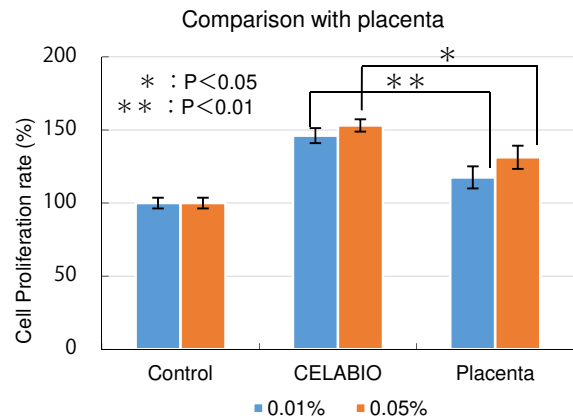
(1) Effects on the dermis (fibroblasts): Reduces wrinkles and restores skin firmness

Cell activation action (Comparison with placenta)

The test result of cell activation of human fibroblast showed that CELABIO® has higher activity than placenta extract, though the former is plant origin.

Measurement:

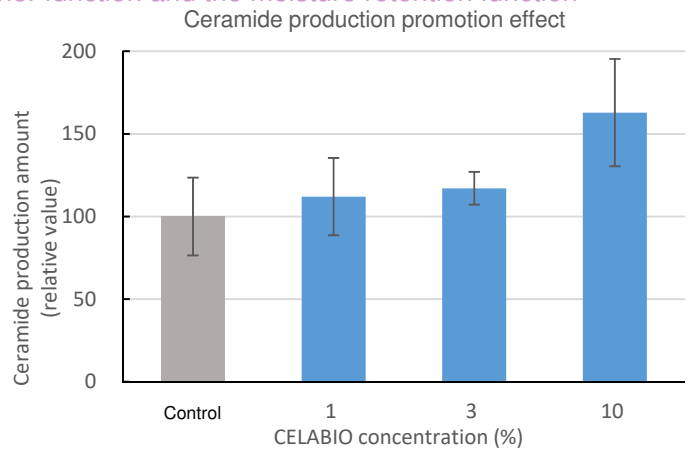
- Usage of Cell Counting Kit-8
- Each concentration was measured by solid concentration. CELABIO solid concentration 1%



(2) Effects on the epidermis (keratinocyte): Improves the barrier function and the moisture retention function

Promotes the production of ceramide

Ceramide forms a lamellar structure as a horny layer intercellular lipid. As a result of a ceramide production test by using normal keratinized human epidermal keratinocytes, it was found that CELABIO promotes the mRNA expression of serine palmitoyltransferase (SPT), an enzyme involved in the biosynthesis of ceramide and increases the amount of ceramide produced. Given this, CELABIO is expected to promote ceramide productivity of epidermal keratinocytes and reinforce the intercellular lipid lamellar structure through increased ceramide production, thereby improving the barrier function and moisture retention function of the skin.



(3) Clinical test ① (implemented at the dermatology clinic)

<Test Method>

11 subjects from twenties to fifties (male:1/femal:10) including 2 atopic dermatitis patients used face lotion containing CELABIO® by 0.4% as solid, for 2 months continuously and skin improvement situation was observed.

<Result>

Before usage, sulci cutis and cristae cutis were not clear at some parts, however even after one month usage, sulci cutis became clear and texture was improved.

(4) Clinical test ② (implemented at the outside laboratory)

<Test Method>

8 females from thirties to fifties were asked to utilize face lotion for 6 weeks continuously to evaluate the improvement of crow's feet.

On the periphery of right eye, face lotion with CELABIO® (0.4% as solid) was applied. On the periphery of left eye, face lotion which they normally use was applied. Both sides were compared after 6 weeks.

<Test Result>

For all the subjects, "wrinkle volume rate" and "wrinkle numbers" were found significantly improved by numerical analysis.



Even after 6 weeks

