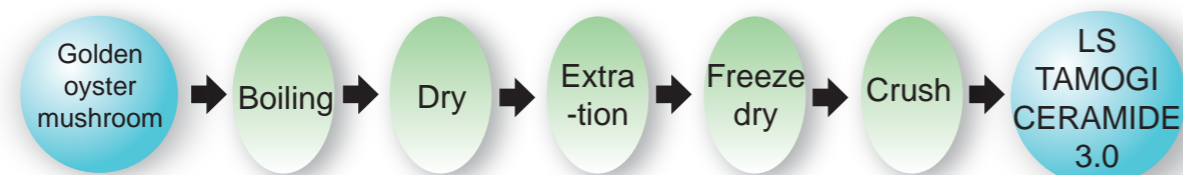


## ● Product name ●

### LS TAMOGI-CERAMIDE 3.0



#### ■ Manufacturing process



#### ■ Ingredients

- Cyclodextrin, Golden oyster mushroom extracts (including cramide)

#### ■ Application

- Nutraceuticals (tablet, capsule etc.)

#### ■ Reference daily intake

- 20-100 mg/day

#### ■ Packaging

- 100 g/bag, 1 kg/bag

#### ■ Particle size

- 30 mesh pass/inch

#### ■ SPEC

Items	Specifications	Inspection methods
Appearance	Powder	Visual test, Sensory test
Color	Light yellowish to light brown	
Odor	Characteristic	
Taste	Characteristic	
Glucosylceramide	3.0 % min.	HPLC-ELSD method
Loss on dry	6.0 % max.	Normal pressure, 105°C, 3 hours
Arsenic (equiv. AS <sub>2</sub> O <sub>3</sub> )	2 ppm max.	Atomic absorption spectrophotometry
Heavy Metal (equiv. Pb)	20 ppm max.	Sodium sulfide colorimetric assay
Virable bacterial counts (CFU/g)	3 x 10 <sup>3</sup> /g max.	Standard agar plate culture method
Coliform	Negative	BGLB method
Yeast and fungi content	2 x 10 <sup>2</sup> /g max.	Potato dextrose agar culture method

#### ■ Safety

- Acute toxicity (male and female rat) LD<sub>50</sub> > 5,000 mg/kg
- Subacute toxicity (male and female rat) > 500 mg/kg/day
- Pestic chemical (227 items) were undetected using Tamogitake as sample.

#### ■ Stability

This product is stable until 120°C

## LS TAMOGI-Ceramide 3.0



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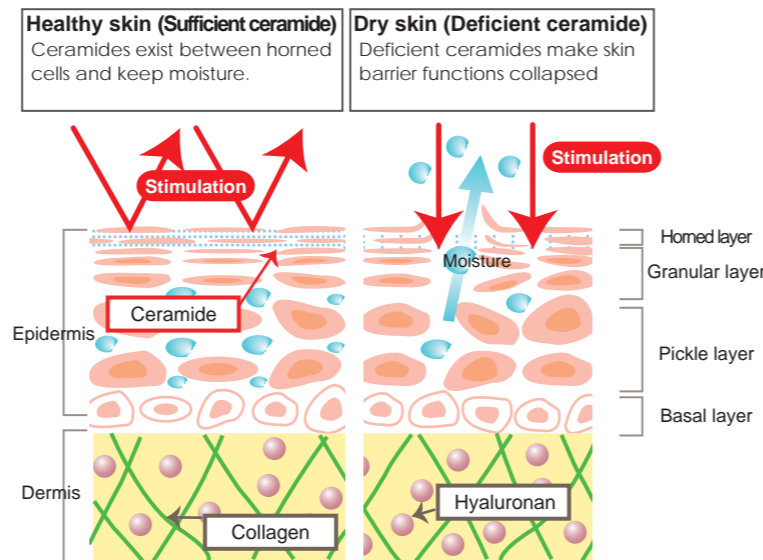
2-6-6 Horidome-cho Nihonbashi, Chou-Ku, Tokyo 103-0012, Japan  
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## LS TAMOGI-Ceramide 3.0

### The ceramides exist in skin

It is widely accepted that ceramides play an essential role in structuring and maintaining the water permeability barrier function of the skin. About 50% of the intercellular lipids of a horned layer are ceramides. The deficiency in ceramides causes dry skin, skin disorders, transepidermal water loss from the skin, and the loss of elasticity. Moreover, it is well known that the content of ceramides was decreased with aging.



### Golden oyster mushroom (TAMOGITAKE)

A golden oyster mushroom (*Pleurotus cornucopiae* var. *citrinopileatus*) belongs to *Pleurotaceae* family. The name of this mushroom in Japan is TAMOGITAKE. It can grow in cold region of Japan (Hokkaido). Harvesting season of TAMOGITAKE in nature is limited. Therefore, we used to get or buy it hard. Recently, artificial cultivation method of it is developed and we can get it to eat daily in Hokkaido.

TAMOGITAKE contains a lot of glycol-sphingolipid (glucosylceramides), which is ceramide binding to glucose.



### "LS TAMOGI-CERAMIDE 3.0" is a natural supplement made in Japan

"LS TAMOGI-CERAMIDE 3.0" is a dietary supplement powder which is extracted by TAMOGITAKE with alcohol. This organic supplement is made in Hokkaido, Japan.

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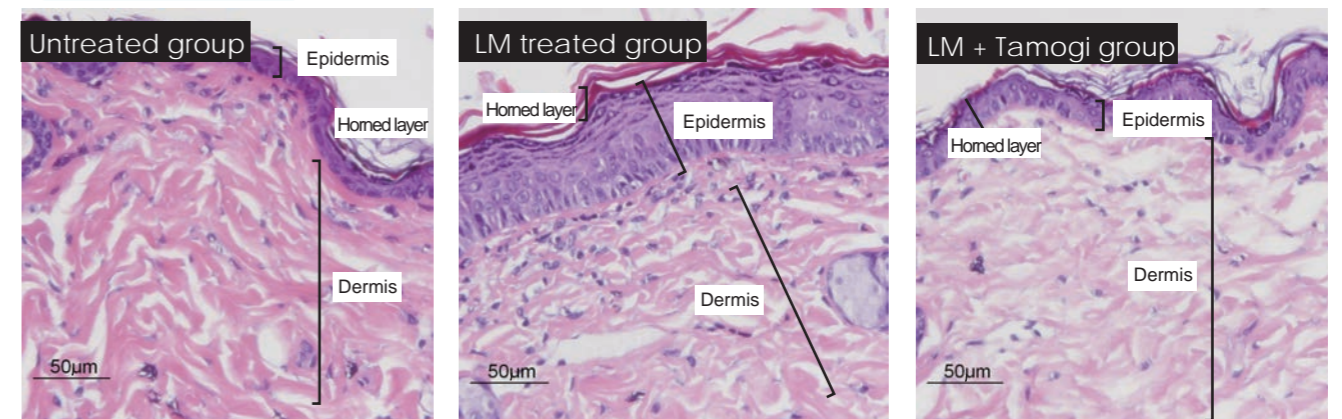
## Ceramides reduces the appearance of wrinkles and transepidermal water loss

Faculty of Advanced Life Science, Frontier Research Center for Post-genome Science and Technology, Hokkaido University

### Wrinkle condition

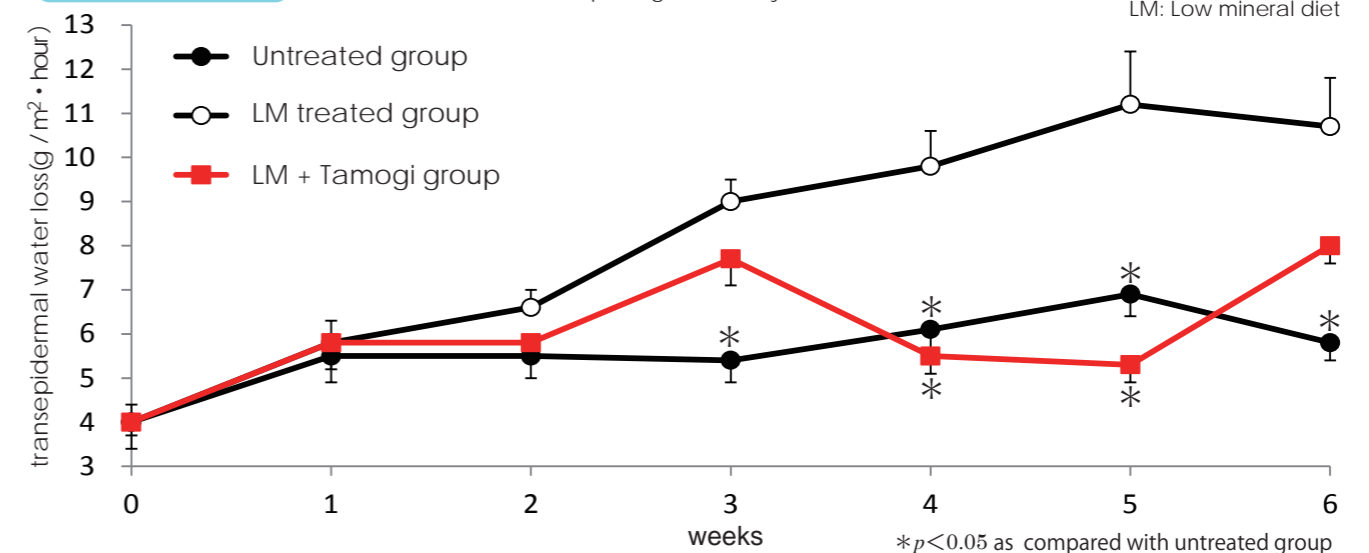


### Histological staining



Epidermis became thick as a result of multiplexing horned layers. Epidermis was close to untreated group.

### Moisturizing effect



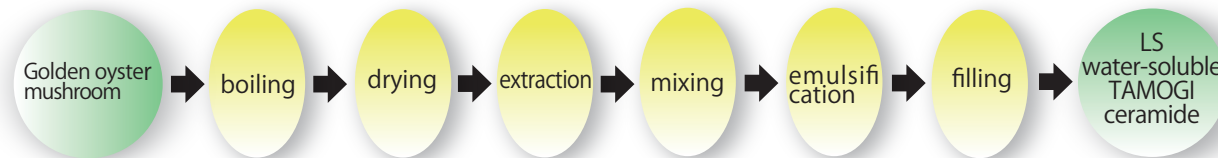
The effects of "LS TAMOGI-CERAMIDE 3.0" on the suppression of wrinkle and dry in skin were studied by *in vivo* research using mice. Research data in detail is as follows. Mice were divided into the following 3 groups: 1) untreated group, 2) Low mineral (LM) diet treated group is fed on only low magnesium diet. This diet induces dermatitis-like symptoms such as increase of wrinkles and skin dry, 3) LM+Tamogi group is fed the mixture of 0.1% of "LS TAMOGI-CERAMIDE 3.0" and LM diet. LM treated group showed skin condition such as wrinkles and moisture retention go worse, although skin of untreated group keep healthy. Interestingly, these bad conditions of the skin were ameliorated in the mice fed the "LS TAMOGI-CERAMIDE 3.0". Furthermore, histological study showed that growth in skin thickness (especially the epidermis and multiplexing of the horned layer, not dermis) were suppressed in LM+Tamogi group, while these layers in LM treated group became thicker than them in untreated group. Thus, epidermal barrier dysfunction induced by LM diet was shown to be ameliorated by "LS TAMOGI-CERAMIDE 3.0".

No copy of research data above

## Product name ■ **LS TAMOGI-CERAMIDE Water-soluble type**

Water-soluble liquid made by emulsifying Golden oyster mushroom extract containing ceramide. It contains 0.4% or more glucosylceramide

### Manufacturing process



### Ingredients

- Reduced starch syrup, Golden oyster mushroom extracts, medium chain triglyceride, emulsifier

### Application

- beverage (drink, jelly and others)

### Recommended daily intake

- 150-450mg/ day

### Packaging

- 1kg plastic container

### Storing method

- keep refrigerated

### Expiration date

- one year

### Manufacturer

- NOF Corporation

### SPEC

Item	Specifications	Method for Analysis
Appearance	Dark brown sticky liquid	Eye Observation
Odor	Characteristic	Sensory test
Glucosylceramide wt%	0.4 or more	HLG-ELSD method
Total Plate Count cfu/g	1,000 or less	Standard Agar Plate Culture Method
Coliform Group	Negative	BGLB Method
Yeast and fungi content pcs/g	100 or less	Potato dextrose agar medium method
Heavy metal (equiv Pb) $\mu$ g/g	10 or less	Sodium sulfide colorimetric method
Arsenic (equiv $AS_2O_3$ ) $\mu$ g/g	2 or less	Atomic Absorption Spectrometry

### Safety

- Toxicity test
  - Single-dose administration test (mouse female/male) : LD50 >2,000 mg/kg (note 1)
  - Reverse mutation test: Negative (note 1)
- Pesticide chemicals test(227 items) : Not detected (Note 2)
- Radiation test : Not detected (Note 2)

Radioactive iodine (iodine 131)    Radioactive cesium (cesium 131)    Radioactive cesium (cesium 137)

Note1 : Analytical results of this product    Note2: Analytical results of raw pleurotus cornucopiae

- We also provide OEM services for customers who are planning to develop new products or improve products. Please feel free to contact us.



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