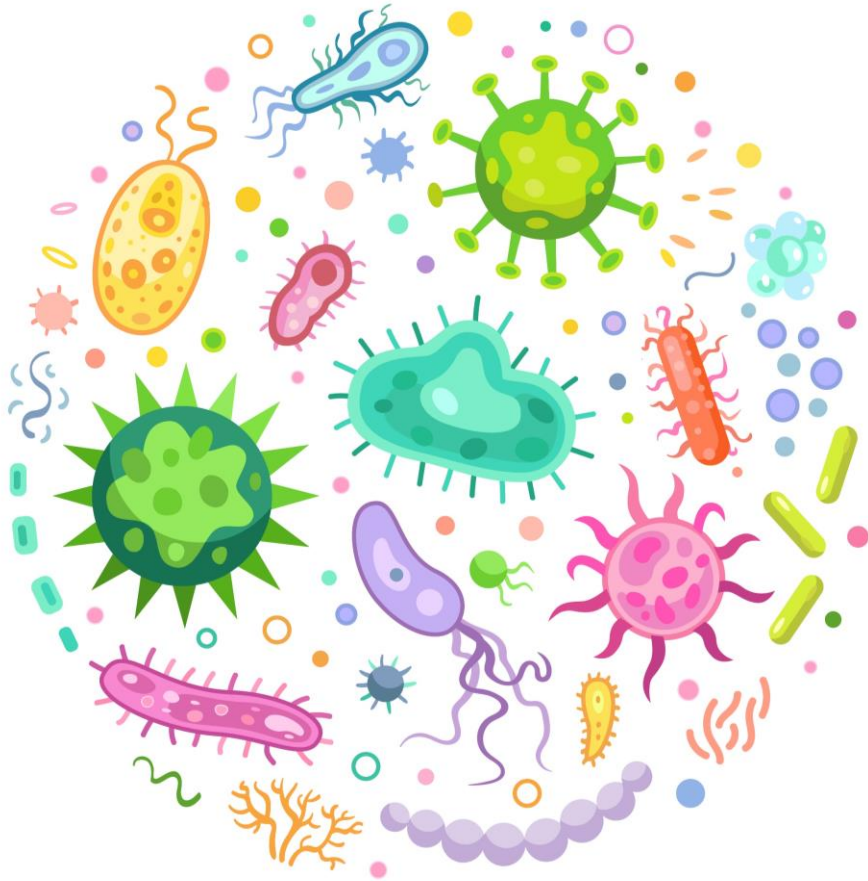




# NATORI MULTIBIOME HD



#### INCI name

Lactobacillus/Soybean Ferment Extract, Lactobacillus/Rice Ferment, Saccharomyces/Rice Ferment Filtrate, Lactobacillus/Soymilk Ferment Filtrate, Lactobacillus/Punica Granatum Fruit Ferment Extract etc.

# NATORI MULTIBIOME HD

Natori Multibiome HD is a **microbiome raw material that encompasses a total of 60 fermented products**. It is specifically enhanced with **41 types of probiotics**, including **19 strains of Lactobacillus**, which are prominently found in the skin microbiome of healthy women in their 20s.

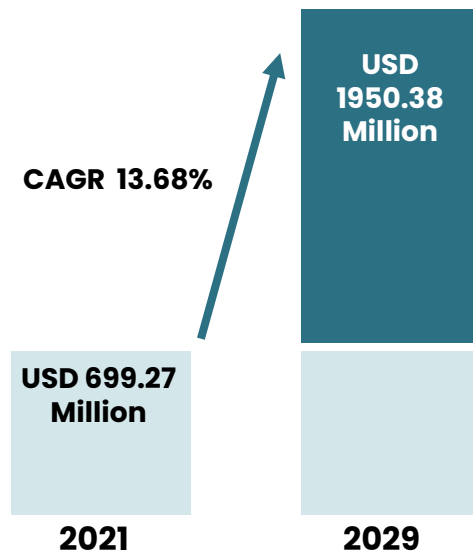
☉ Brightening

☉ Moisturising

☉ Anti-aging

# Skin Microbiome Market

## <Skin Microbiome Market Value>



## <Trend by Continent>



- 1 North America:** Market Dominance & Projected Continuation **Due to Increased Healthcare**
- 2 Europe:** Following North America's Lead with **Growing Healthcare Spending & Strong Healthcare Infrastructure.**
- 3 Asia-Pacific:** Rapid Growth Expected, Driven by **High Skin Problem Prevalence & Rising Personal Care Awareness.**

## <Global Skin Microbiome Market Scope>

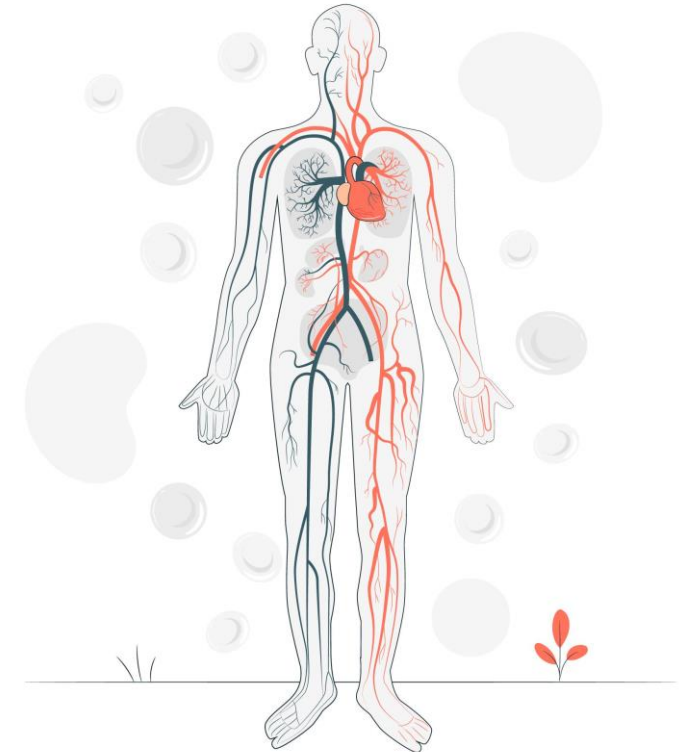
| Type  | Skin Site  | Diseases   |
|---|--|--|
| <ul style="list-style-type: none"> <li>• Resident Microorganisms</li> <li>• Transient Bacteria</li> </ul> | <ul style="list-style-type: none"> <li>• Dry</li> <li>• Moist</li> <li>• Oily</li> </ul> | <ul style="list-style-type: none"> <li>• Acne Vulgaris</li> <li>• Atopic Dermatitis</li> <li>• Psoriasis Vulgaris</li> </ul> |

# What is Microbiome?

The term "Microbiome" combines "Microbiota," referring to the genetic information or **microorganisms that inhabit an organism**, and "Genome." It specifically denotes microorganisms coexisting with the human body.

The human microbiome has more than double the microorganism count compared to human cells and over 100 times more genes. It's often termed the "Second Genome" due to its essential role in human genetics.

Microbiome research analyzes interactions between beneficial and harmful microorganisms and their links to diseases. It finds applications in drug development and therapies for chronic illnesses. Currently, it's actively used in developing food products, cosmetics, and treatments.



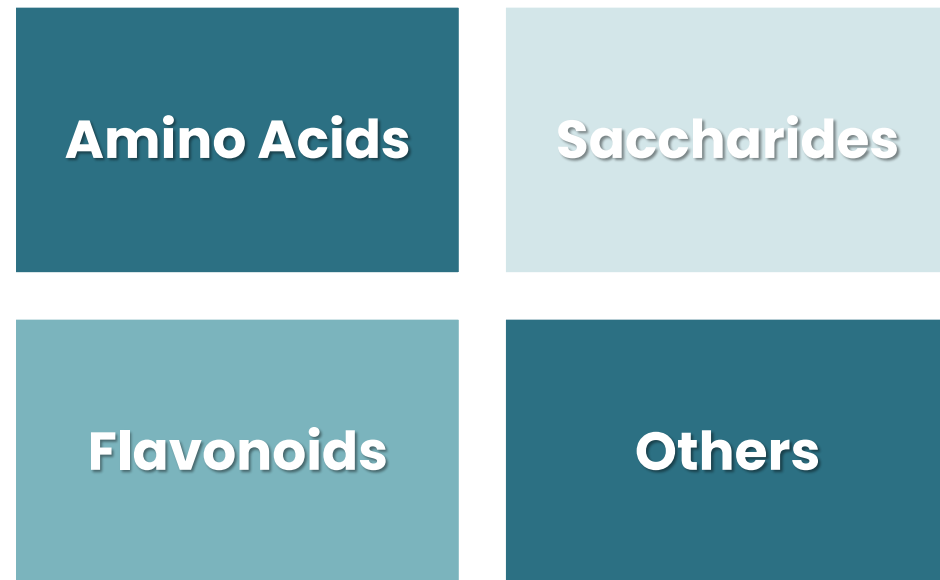
# Natori Multibiome HD

## Strains used in Natori Multibiome HD

| No.                | Strain kinds         | Count     |
|--------------------|----------------------|-----------|
| 1                  | Lactobacillus        | 19        |
| 2                  | Lactococcus          | 3         |
| 3                  | Saccharomyces        | 21        |
| 4                  | Bacillus             | 4         |
| 5                  | Monascus             | 2         |
| 6                  | Leuconostoc          | 1         |
| 7                  | Schizosaccharomyces  | 1         |
| 8                  | Yeast(Pichia heedii) | 9         |
| <b>Total kinds</b> |                      | <b>60</b> |

## Metabolites of Natori Multibiome HD

[Efficacy Indicators]

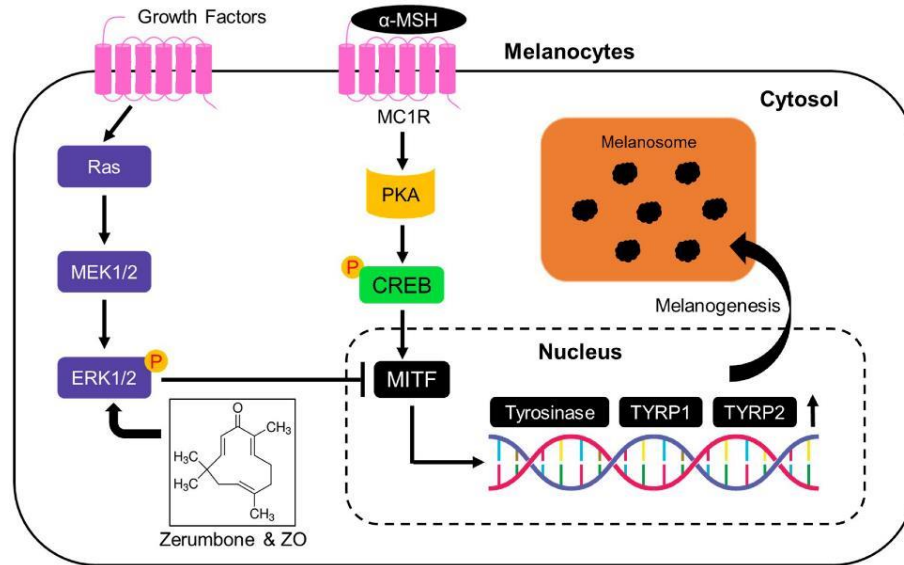


# Ingredients of Natori Multibiome HD

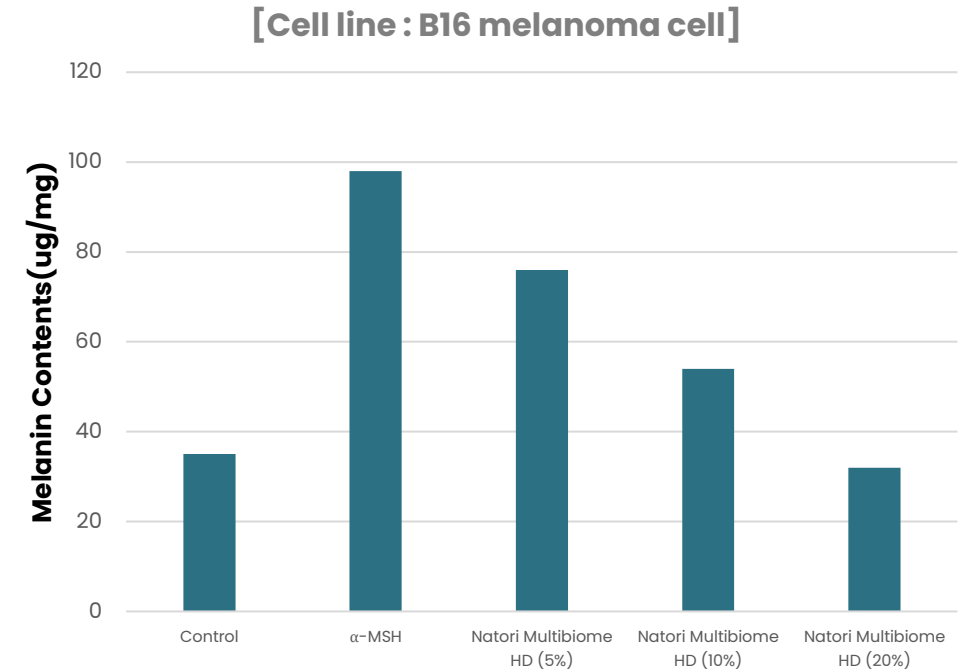
| INCI names for 60 raw materials of Natori Multibiome HD      |  |   |   |   |
|--|--|---|---|---|
| Lactobacillus  | Lactobacillus/Eriodictyon Californicum Ferment Extract | Lactobacillus/Soybean Ferment Extract                             | Saccharomyces Ferment Filtrate          | Saccharomyces Ferment Lysate Filtrate                       |
| Lactobacillus/Rice Ferment                                   | Lactobacillus/Soymilk Ferment Filtrate                 | Lactobacillus/Water Hyacinth Ferment                              | Saccharomyces Lysate                    | Saccharomyces Lysate Extract                                |
| Lactobacillus/Rye Flour Ferment                              | Lactobacillus/Pear Juice Ferment Filtrate              | Lactobacillus/Bean Seed Extract/Sodium Glutamate Ferment Filtrate | Saccharomyces/Xylinum/Black Tea Ferment | Saccharomyces Cerevisiae Extract                            |
| Lactobacillus/Hibiscus Sabdariffa Flower Ferment Filtrate    | Lactobacillus/Pumpkin Ferment Extract                  | Lactobacillus/Panax Ginseng Root Ferment Filtrate                 | Lactococcus Ferment                     | Lactococcus Ferment Lysate                                  |
| Lactobacillus/Wasabia Japonica Root Ferment Extract          | Lactobacillus/Punica Granatum Fruit Ferment Extract    | Lactobacillus/Algae Extract Ferment                               | Lactococcus Ferment Extract             | Monascus/Rice Ferment                                       |
| Lactobacillus/Acerola Cherry Ferment                         | Lactobacillus Ferment                                  | Lactobacillus Ferment Lysate                                      | Monascus Extract                        | Bacillus/Soybean Ferment Extract                            |
| Saccharomyces/Coix Lacryma-Jobi Mayuen Seed Ferment Filtrate | Saccharomyces/Soy Protein Ferment                      | Saccharomyces/Barley Seed Ferment Filtrate                        | Bacillus/Glutamic Acid Ferment Filtrate | Bacillus/Rice Bran Extract/Soybean Extract Ferment Filtrate |
| Saccharomyces/Rice Ferment Filtrate                          | Saccharomyces/Calcium Ferment                          | Saccharomyces/Silicon Ferment                                     | Bacillus Ferment                        | Leuconostoc/Radish Root Ferment Filtrate                    |
| Saccharomyces/Laminaria Saccharina Ferment                   | Saccharomyces/Potato Extract Ferment Filtrate          | Saccharomyces/Magnesium Ferment                                   | Schizosaccharomyces Ferment Filtrate    | Chlorella Ferment   |
| Saccharomyces/Rice Bran Ferment                              | Saccharomyces/Grape Ferment Extract                    | Saccharomyces/Iron Ferment  | Yeast                                   | Yeast Beta-Glucan   |
| Saccharomyces/Copper Ferment                                 | Saccharomyces Polypeptides                             | Saccharomyces Ferment   | Yeast Amino Acids                       | Yeast Polysaccharides                                       |
| Yeast Ferment Extract  | Yeast Extract  | Hydrolyzed Yeast  | Hydrolyzed Yeast Protein                | Hydrolyzed Yeast Extract                                    |

# Efficacy – Brightening

## In Vitro Test - $\alpha$ -MSH induced Melanin inhibition assay



\* $\alpha$ -Melanocyte-stimulating hormone ( $\alpha$ -MSH)



Reduction in activity of  $\alpha$ -MSH reduces melanin production, **Concentration-dependent brightening effect confirmed** in cell experiments

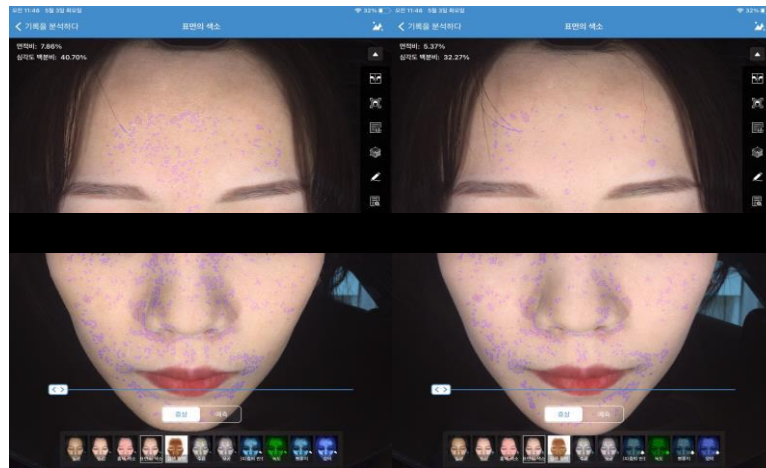


# Efficacy – Brightening

## In Vivo Test – Skin Analyzer System



The research subjects were healthy individuals with no previous history of allergic diseases. They did not take any oral corticosteroids, antihistamines, or anti-inflammatory drugs for at least one week before the examination. Moreover, they did not apply topical corticosteroids to the examination area.



(n=5) Participants sprayed their faces with face mist twice a day, in the morning and evening. After five days, they compared the before and after effects.

An approximate **31.7% reduction in skin surface pigmentation**

\*n = Participants

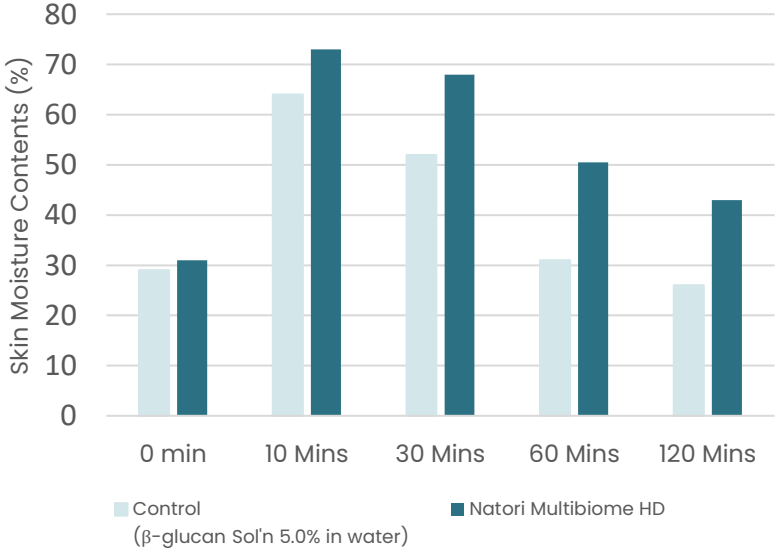


# Efficacy – Moisturizing

## In Vivo Test – Skin Analyzer System (Coneometric assay)



The research subjects were healthy individuals with no previous history of allergic diseases. They did not take any oral corticosteroids, antihistamines, or anti-inflammatory drugs for at least one week before the examination. Moreover, they did not apply topical corticosteroids to the examination area.



(n=5) After applying the control group and experimental group samples on the subjects' forearms, the moisture content was measured over time using a Coneometric assay to make a comparison.

Compared to the positive control group (moisturizer β-glucan), the **moisture retention capacity increased by approximately 69.6%.**

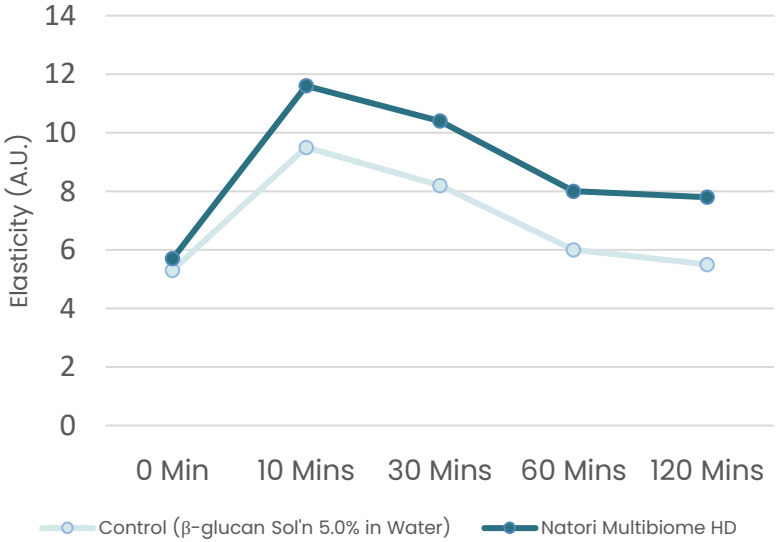
\*n = Participants

# Efficacy – Elasticity

## In Vivo Test – Skin Analyzer System (Coneometric assay)



The research subjects were healthy individuals with no previous history of allergic diseases. They did not take any oral corticosteroids, antihistamines, or anti-inflammatory drugs for at least one week before the examination. Moreover, they did not apply topical corticosteroids to the examination area.



(n=5) After applying the control group and experimental group samples on the subjects' foreheads, the elasticity was measured over time using a Coneometric assay to make a comparison.

Compared to the positive control group (moisturizer β-glucan), **the elasticity increased by approximately 48.1%.**

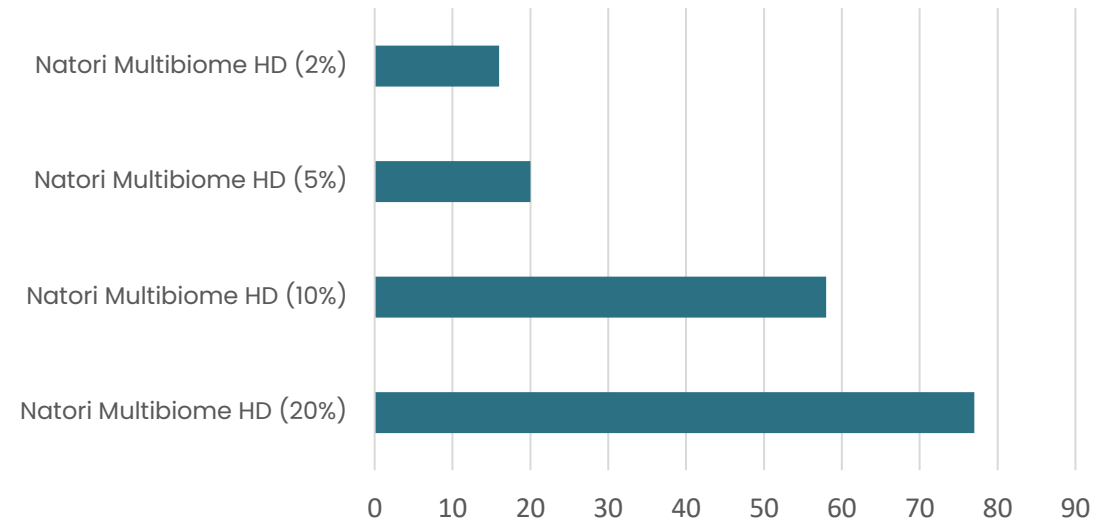
\*n = Participants

# Efficacy – Anti-oxidant

## In Vitro Test – Free radical (DPPH radical)



### Anti-Oxidative Effect (DPPH Free Radical Assay)



The results of the antioxidant efficacy experiment using the **free radical (DPPH radical)** showed **concentration-dependent antioxidant effects were observed.**

# Information on Use

## Specifications

|                   |                                 |
|-------------------|---------------------------------|
| <b>Appearance</b> | Slightly yellow to Brown Liquid |
| <b>Odour</b>      | Characteristic                  |
| <b>Colour</b>     | Slightly yellow to Brown        |
| <b>pH</b>         | 5.0 ~ 8.0                       |

## Formulation

|                                 |   |
|---------------------------------|---|
| <b>Recommended Use Level, %</b> | 5.0 – 100.0%  |
| <b>Incorporation</b>            | Add into aqueous phase at any temperature   |
| <b>Stability</b>                | High or low temperatures do not affect its stability.                                     |
| <b>Storage Conditions</b>       | Between 15~25°C, dark in a closed container, the desealed product should not be restored. |

# PRODUCTS

# ILDONG

## FIRSTLAB PROBIOTIC MASK

### Product Claims:

- **Contains brightening probiotics** to help improve 5 types of freckles
- Immediate brightening improvement facial mask pack for intensive freckles and blemish management.

**Ingredients:** Water, Glycerin, Caprylic/Capric Triglyceride, Niacinamide, Cetearyl Alcohol, Butylene Glycol, Glyceryl Stearate, Hydroxyacetophenone, Cyclopentasiloxane, Betaine, Hydroxyethylacrylate/Sodium Acryloyldimethyl Taurate Copolymer, Allantoin, Caffeine, Acetyl Glucosamine, Acrylates/C10-30 Alkyl Acrylate Crosspolymer, Curcuma Longa (Turmeric) Root Extract, Tromethamine, Cyclohexasiloxane, Caprylyl Glycol, Silica, Ethylhexylglycerin, Adenosine, Dimethiconol, Xanthan Gum, 1,2-Hexanediol, Fragrance(Parfum), Sodium Polyacrylate, **Lactobacillus Ferment**, Disodium EDTA, Althaea Rosea Flower Extract, Alpha-Glucan Oligosaccharide, **Candida Bombicola/Glucose/Methyl Rapeseedate Ferment**, Hydrolyzed Hyaluronic Acid, Hippophae Rhamnoides Fruit Extract, Hydrogenated Lecithin, Argania Spinosa Kernel Oil, Olea Europaea (Olive) Fruit Oil, Polymnia Sonchifolia Root Juice, Maltodextrin, **Pseudoalteromonas Ferment Extract**, **Bacillus Ferment**, Ceramide NP, PVP, Dextrin, Hydrolyzed Hibiscus Esculentus Extract, Hydrolyzed Vegetable Protein, Moringa Pterygosperma Seed Extract, Glutathione, Lactobacillus, Glucose, Arginine, Hydroxypropyl Methylcellulose, Citric Acid, Chamaecyparis Obtusa Leaf Extract, Origanum Vulgare Leaf Extract, Salix Alba (Willow) Bark Extract, Calcium Carbonate, Ascorbic Acid, Cinnamomum Cassia Bark Extract, **Lactobacillus/Soybean Ferment Extract**, Portulaca Oleracea Extract, Scutellaria Baicalensis Root Extract, Fullerenes



# Indeed Labs

## MICROBIOME ESSENCE

### Product Claims:

- Consider this formula your skin's daily source of nourishment, providing **essential nutrients that feed skin's friendly bacteria**.
- This essence enhances hydration levels, **improves skin elasticity**, and preps skin to **better absorb** the other products in your routine.
- It also has the added **benefit of postbiotic actives that protect the skin from harmful bacteria** that causes acne and dryness.

**Ingredients:** Water, Propanediol, Glycerin, Butylene Glycol, Saccharide Isomerate, **Saccharomyces Lysate, Saccharomyces/Camellia Sinensis Extract Ferment Filtrate**, Valine, Threonine, Glutamic Acid, Glycine, Glucose, Tamarindus Indica Seed Gum, Phaseolus Angularis Seed Extract, **Lactobacillus/Rice Ferment Filtrate, Lactobacillus Ferment, Lactobacillus/Centella Asiatica/Gleditsia Sinensis Thorn/Houttuynia Cordata Extract/Phellodendron Amurense Bark/Polygonum Cuspidatum Root/Prunella Vulgaris/Torilis Japonica Extract Ferment Filtrate, Bacillus/Cordyceps Sinensis/Ganoderma Lucidum/Inonotus Obliquus/Lentinus Edodes/Phellinus Linteus/Schizophyllum Commune/Tricholoma Matsutake Extract Ferment Filtrate**, Lecithin, Sodium Acrylates Copolymer, Disodium Succinate, 1-2-Hexanediol, Caprylyl Glycol, Ethylhexylglycerin, Phenoxyethanol, Disodium EDTA





# 107

## MICROBIOME SHAMPOO

### Product Claims:

- **This hydrating detox shampoo** is formulated with our exclusive 7-year aged vinegar and **microbiome-targeting ingredients** to help clarify your scalp and wash your hair without stripping away essential moisture

**Ingredients:** Water, Sodium C14-16 Olefin Sulfonate, Disodium Laureth Sulfosuccinate, Lauryl Betaine, Lauryl Hydroxysultaine, Lauryl Glucoside, Cocamide MIPA, Coco-Glucoside, Decyl Glucoside, Glycerin, Guar Hydroxypropyltrimonium Chloride, Polyquaternium-10, Citric Acid, Panthenol, Butylene Glycol, Vinegar, Perilla Frutescens Seed Extract, Terminalia Chebula Fruit Extract, Houttuynia Cordata Extract, Ginkgo Biloba Leaf Extract, Centella Asiatica Leaf Extract, Camellia Sinensis Leaf Extract, Artemisia Princeps Extract, Malt Extract, **Lactobacillus Ferment**, **Bifida Ferment Lysate**, **Streptococcus Thermophilus Ferment**, **Lactococcus Ferment**, Hydrolyzed Ginseng Saponins, Inulin, Xylitol, Rhamnose, Fructooligosaccharides, Caffeine, Biotin, Niacinamide, Salicylic Acid, Sodium Chloride, Methylpropanediol, Glyceryl Caprylate, Climbazole, Sodium Lauroyl Methylaminopropionate, Ethylhexylglycerin, 1,2-Hexanediol, Rosmarinus Officinalis (Rosemary) Leaf Oil, Abies Sibirica Oil, Cedrus Atlantica Wood Oil, Lavandula Angustifolia (Lavender) Oil, Artemisia Vulgaris Oil, Limonene





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