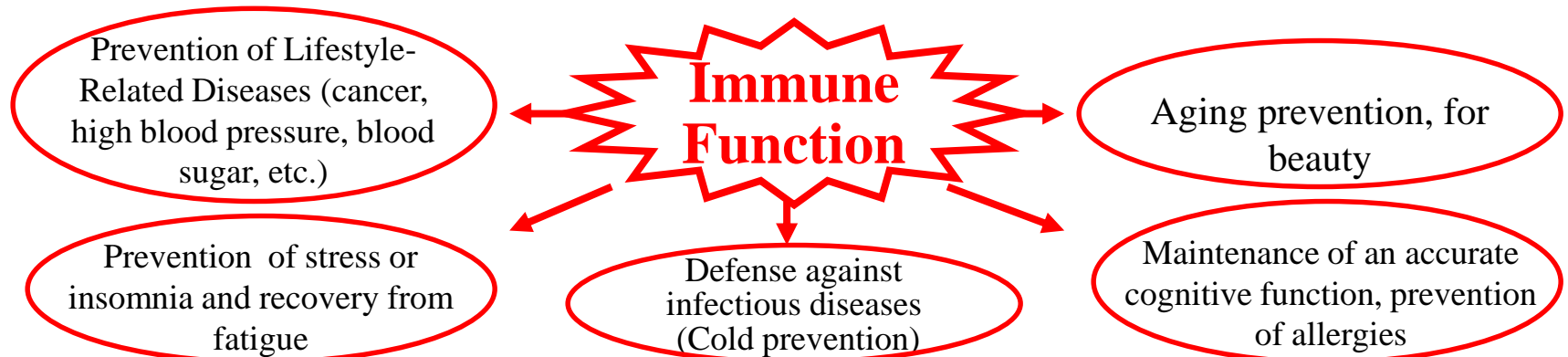


Agaricus Mycelia

Product Concept

- Immune strength declines with aging.
- The intake of a supplement that increases immune strength is necessary for protecting yourself from many microorganisms such as viruses, bacteria, molds and parasites.
- Agaricus is easy to take and supports a healthy body building
- The bagasse cultured Agaricus Mycelia, which is more active, is used instead of its liquid cultured product.

The immune function protects the body from various illnesses that accompanies aging



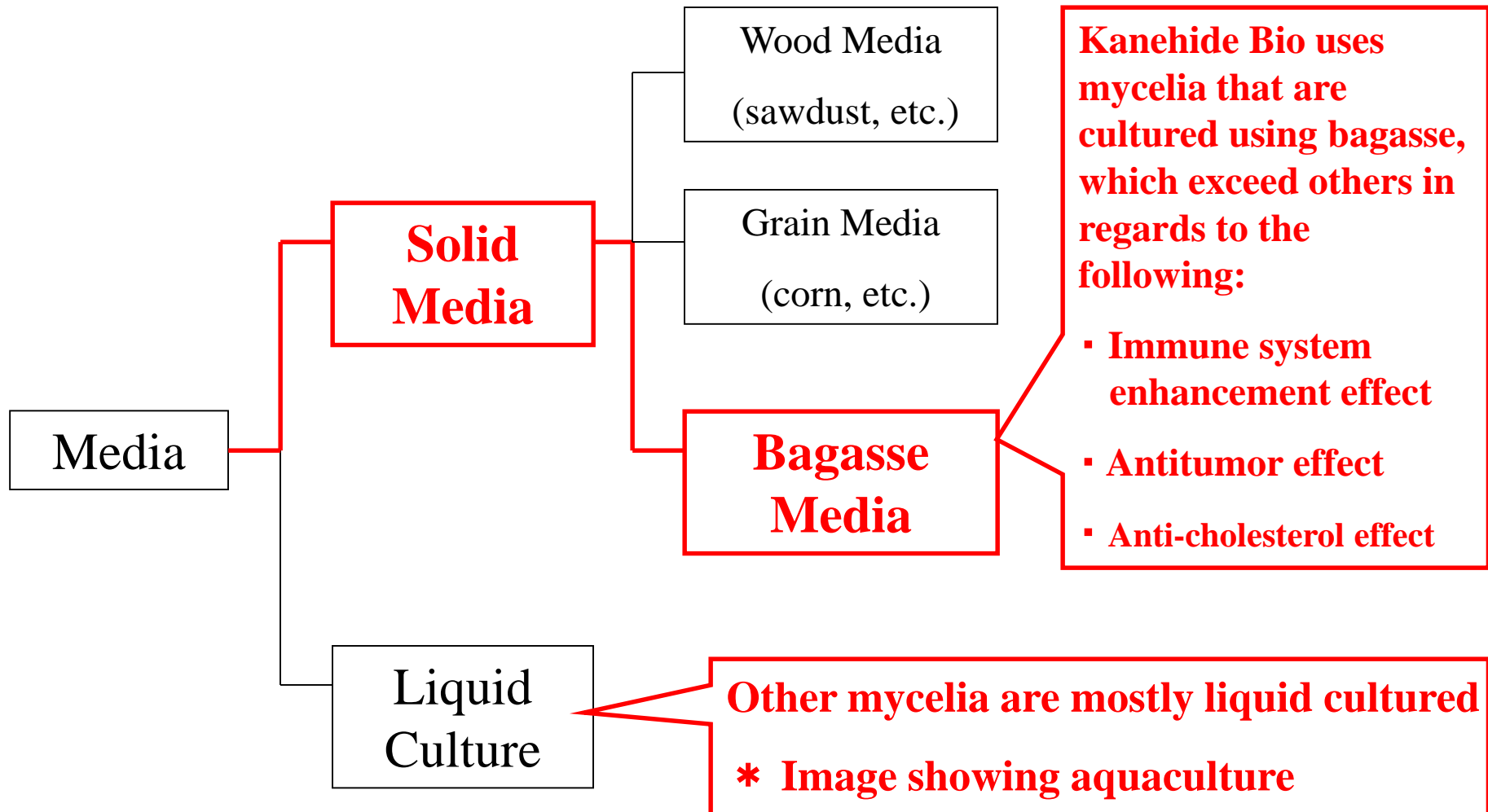
Relation between Age and Immune Strength

Immune strength starts to decline after turning 20 years old.

The age of 40 only have half of the age of 20

Age	Immune Strength
At the time of 20	100%
At the time of 30	75%
At the time of 40	50%
At the time of 50	30%
At the time of 60	17%
At the time of 70	10%

Product Feature (1) (Culture Media)



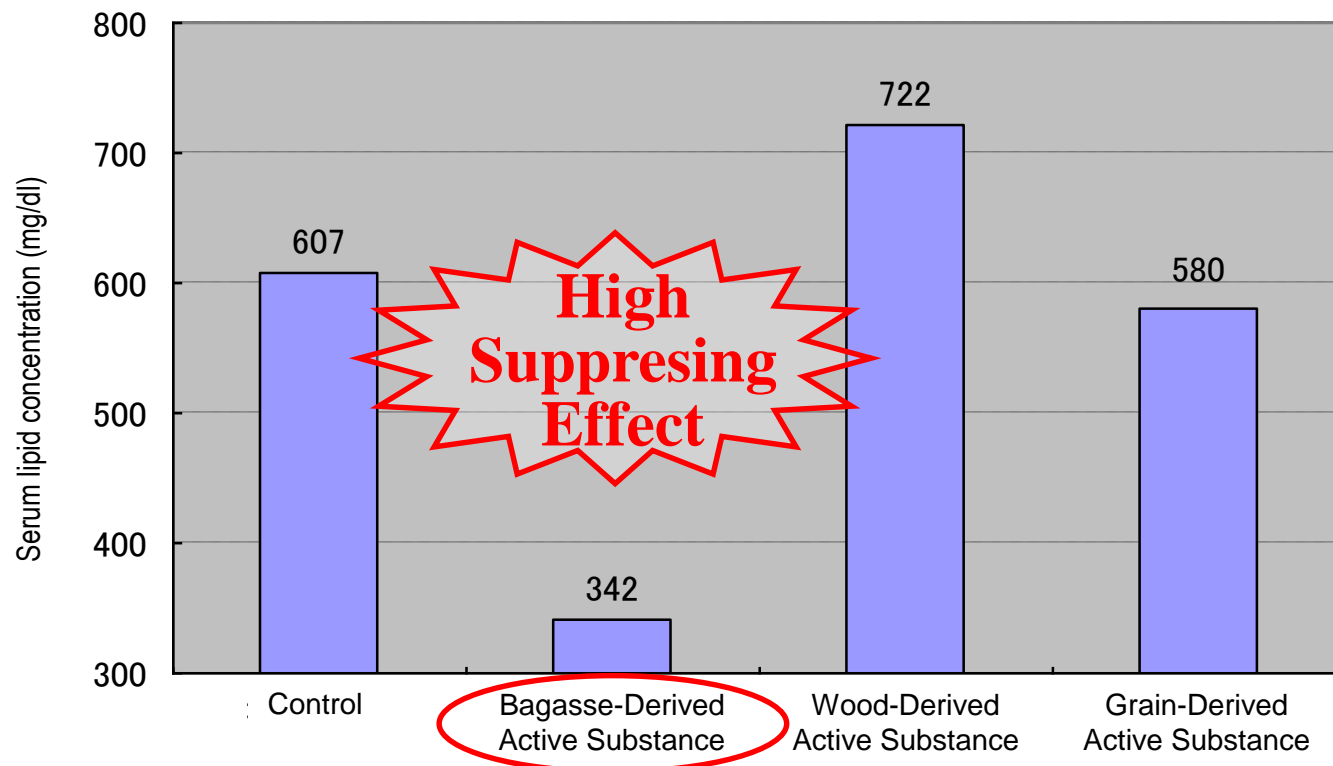
Product Feature (2) (Why Bagasse?)

Bagasse, which has a physiological activity higher than other vegetable-derived (wood, grain) media, is used for culturing Agaricus mycelia.

- Bagasse is the **draff of sugarcane**.
- Bagasse is **rich** in various **physiologically active substances (lignin, hemicellulose, etc.)**
- Lignin, hemicellulose, etc. are reported to have an **immune-system enhancement effect, antitumor effect, antiviral effect, etc.**
- The physiologically active substance found in bagasse is especially reported to have a **physiological activity** that is higher than other vegetable-derived (wood, grain) media.
- **Physiological activity that is higher than other Agaricus can be obtained** by the use of bagasse as a medium.

Product Feature (3) (Media Comparison)

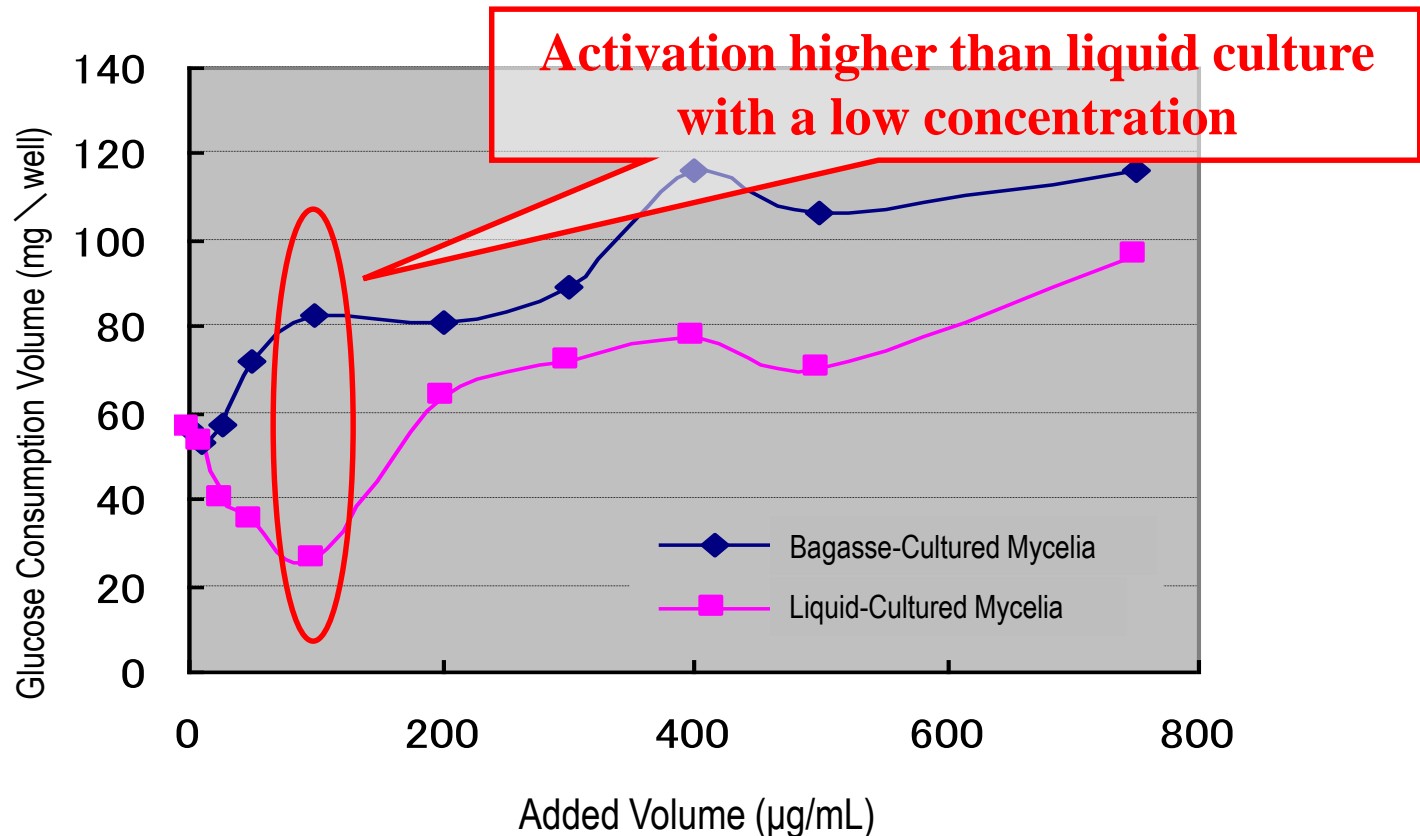
As a result of feeding a rat with high-fat diet and measuring the serum lipid concentration, a **cholesterol suppressing effect** that was higher than other vegetable-derived active substances was confirmed.



Product Feature (4)

(Immune System Enhancement Effect Comparison)

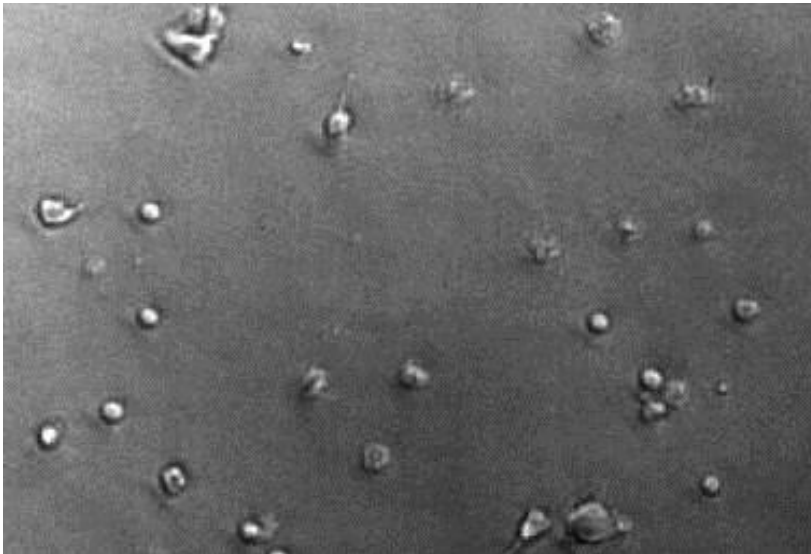
With the increased activity of glucose consumption of mouse intraperitoneal macrophage as an index, **an immunopotential effect higher than the liquid cultured mycelia** was confirmed with **bagasse solid cultured mycelia** as a result of confirming the immune system enhancement effect.



Product Feature (5) (Macrophage Activation)

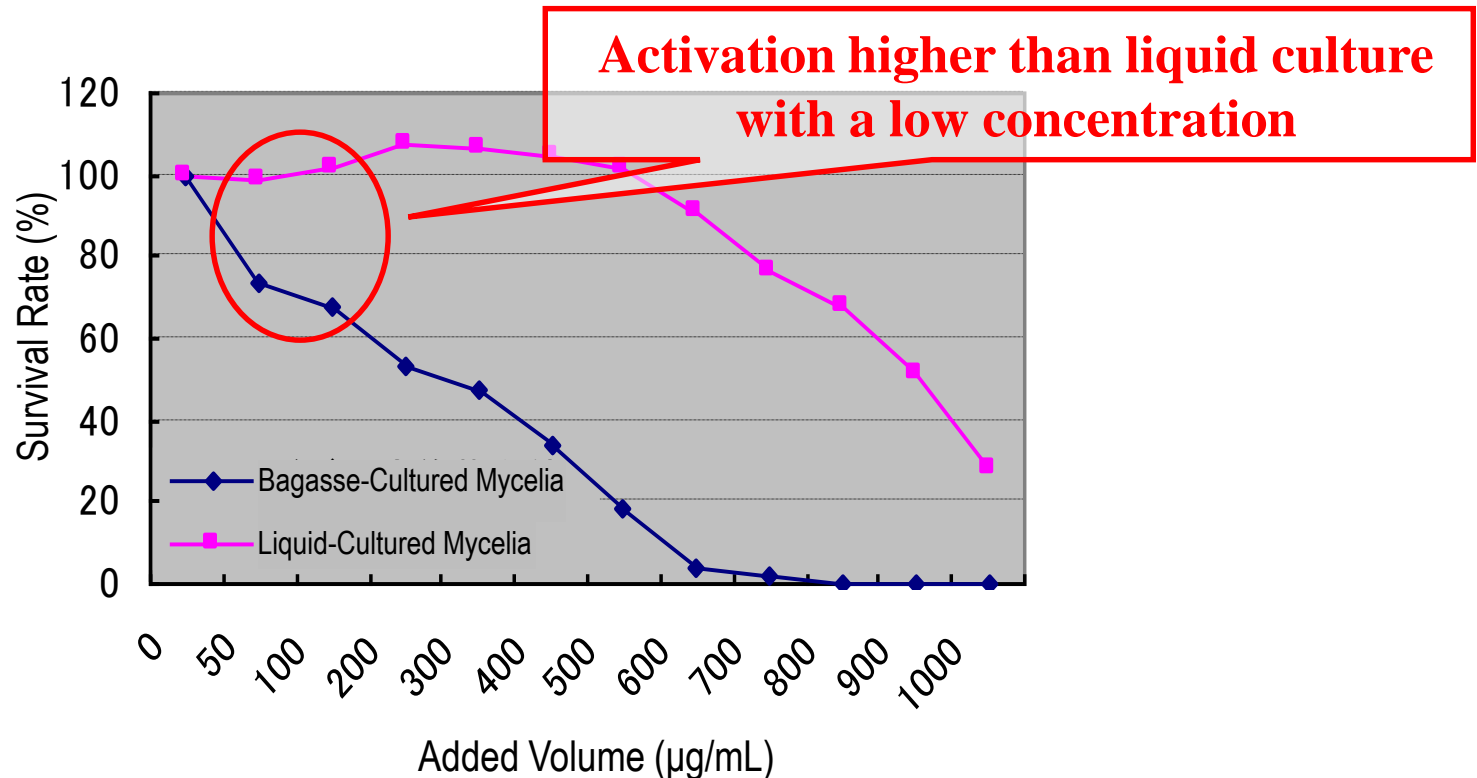
As a result of confirming morphological change of the macrophage, which is an immunocyte, after adding Agaricus mycelia extract, spreading was confirmed and macrophage activation was confirmed.

Macrophage activation was confirmed



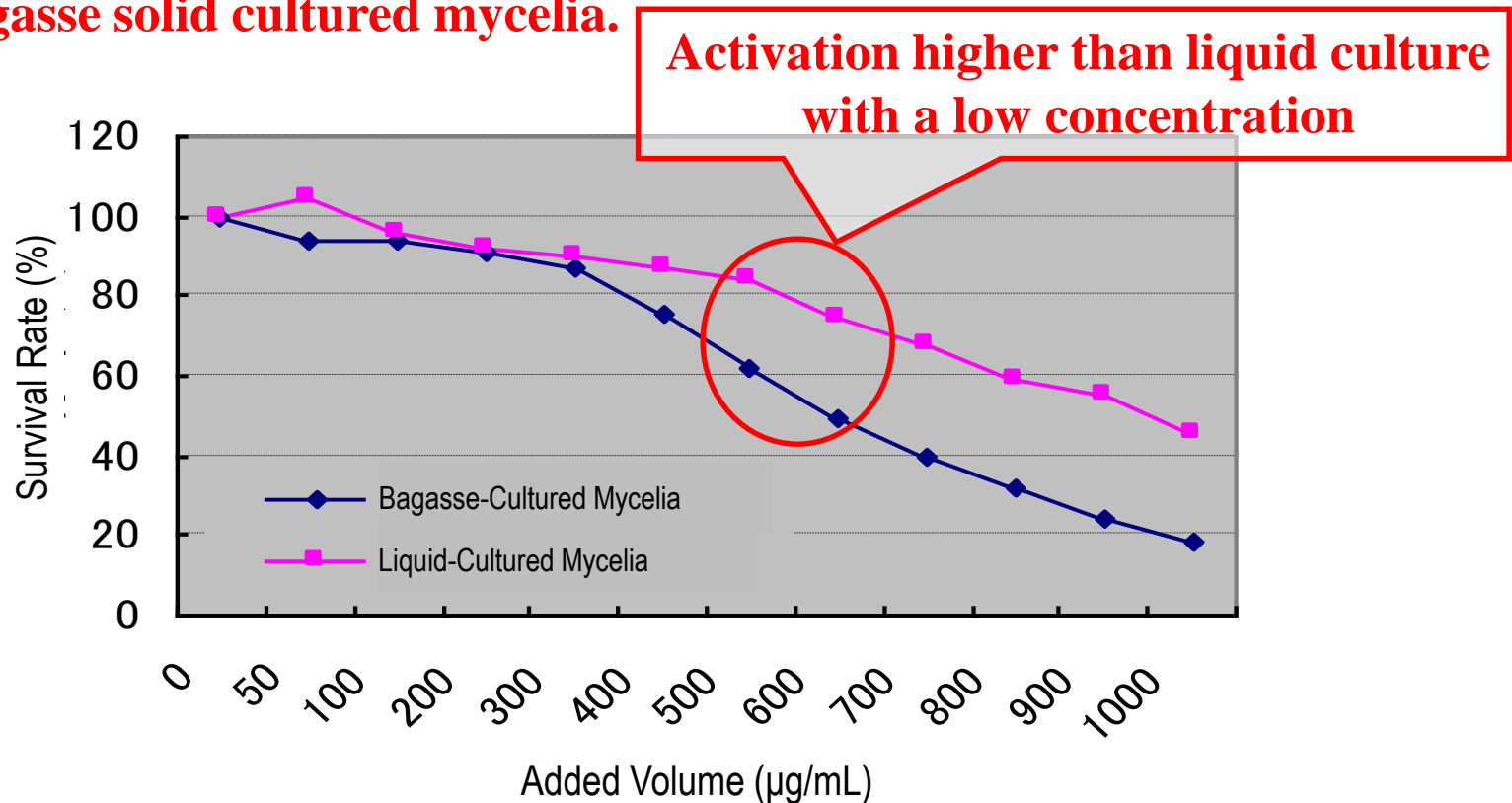
Product Feature (6) (Antitumor Effect Comparison)

As a result of performing cytostatic tests using the leukemia cell (Molt4) in vitro for evaluating the antitumor effect of Agaricus mycelia, **an antitumor effect higher than liquid cultured mycelia** was confirmed with **bagasse solid cultured mycelia**.



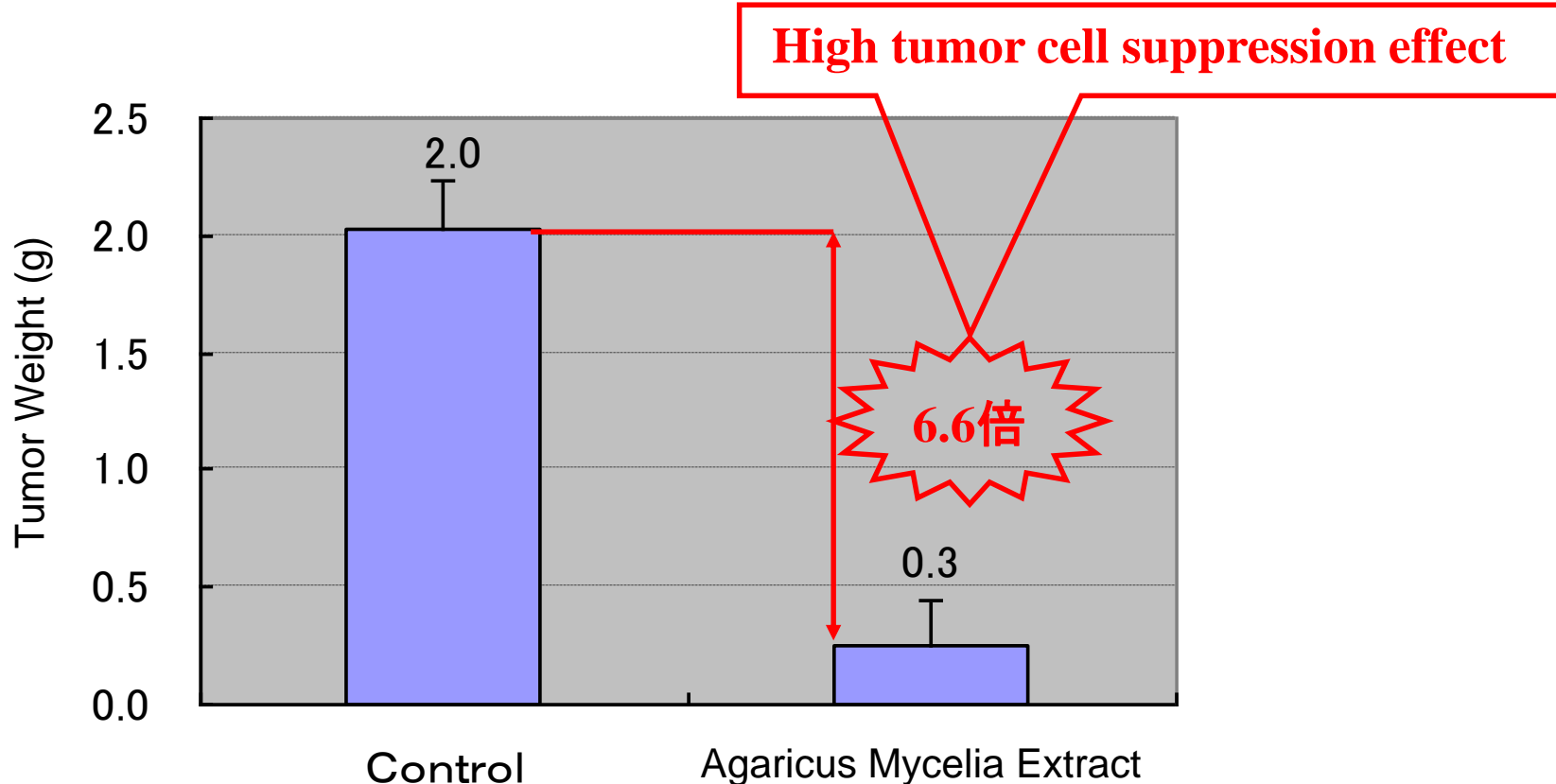
Product Feature (7) (Antitumor Effect Comparison)

As a result of performing cytostatic tests using the leukemia cell (K562) in vitro for evaluating the antitumor effect of Agaricus mycelia, **an antitumor effect higher than liquid cultured mycelia** was confirmed with **bagasse solid cultured mycelia**.

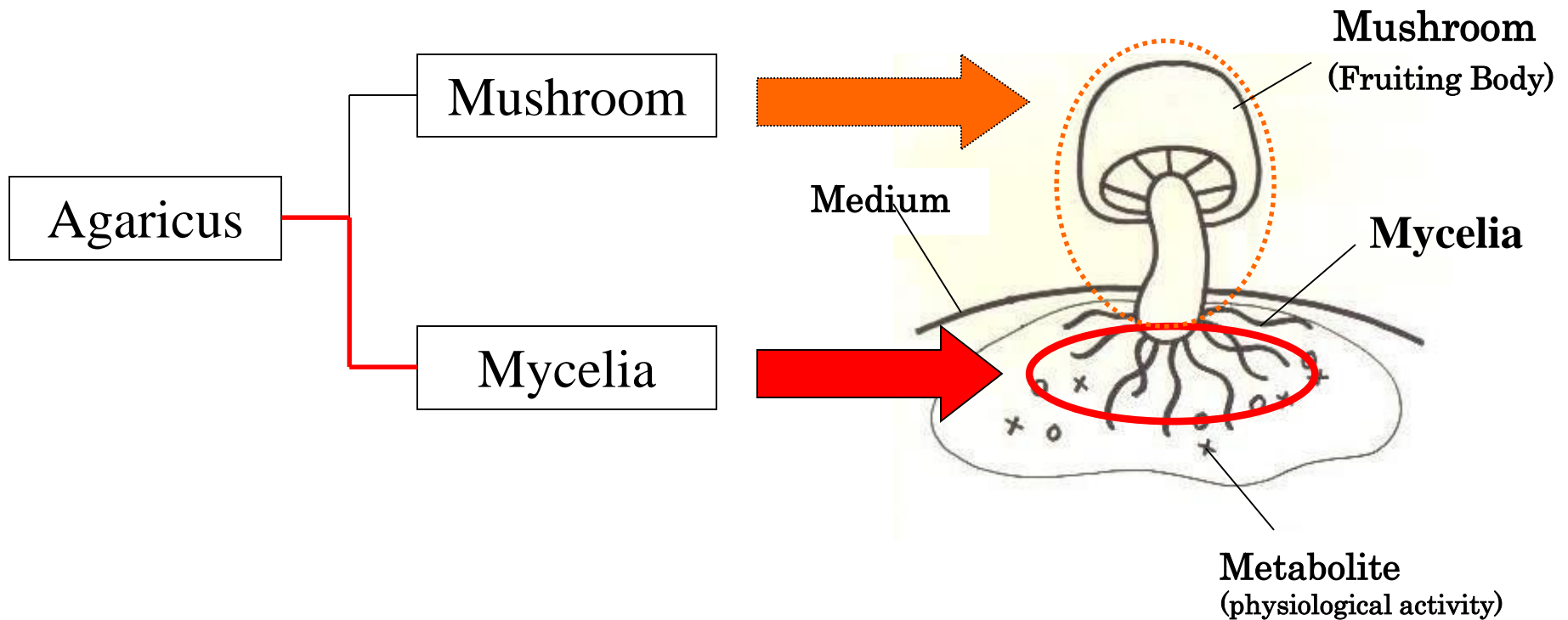


Product Feature (8) (Antitumor Effect)

As a result of performing the tumor cell (mouse-derived sarcoma cell strain: Sarcoma180) proliferative suppression test using mice, **a high tumor cell suppression effect** was confirmed with Agaricus mycelia.



Product Feature (9)-1 (Fungi and Mycelia)



**Product Feature (9)-2
(Difference between Fungi and Mycelia)**



Antioxidation Effect

Antiviral Effect

**Immune System
Enhancement
Effect**

**Antitumor
Effect**

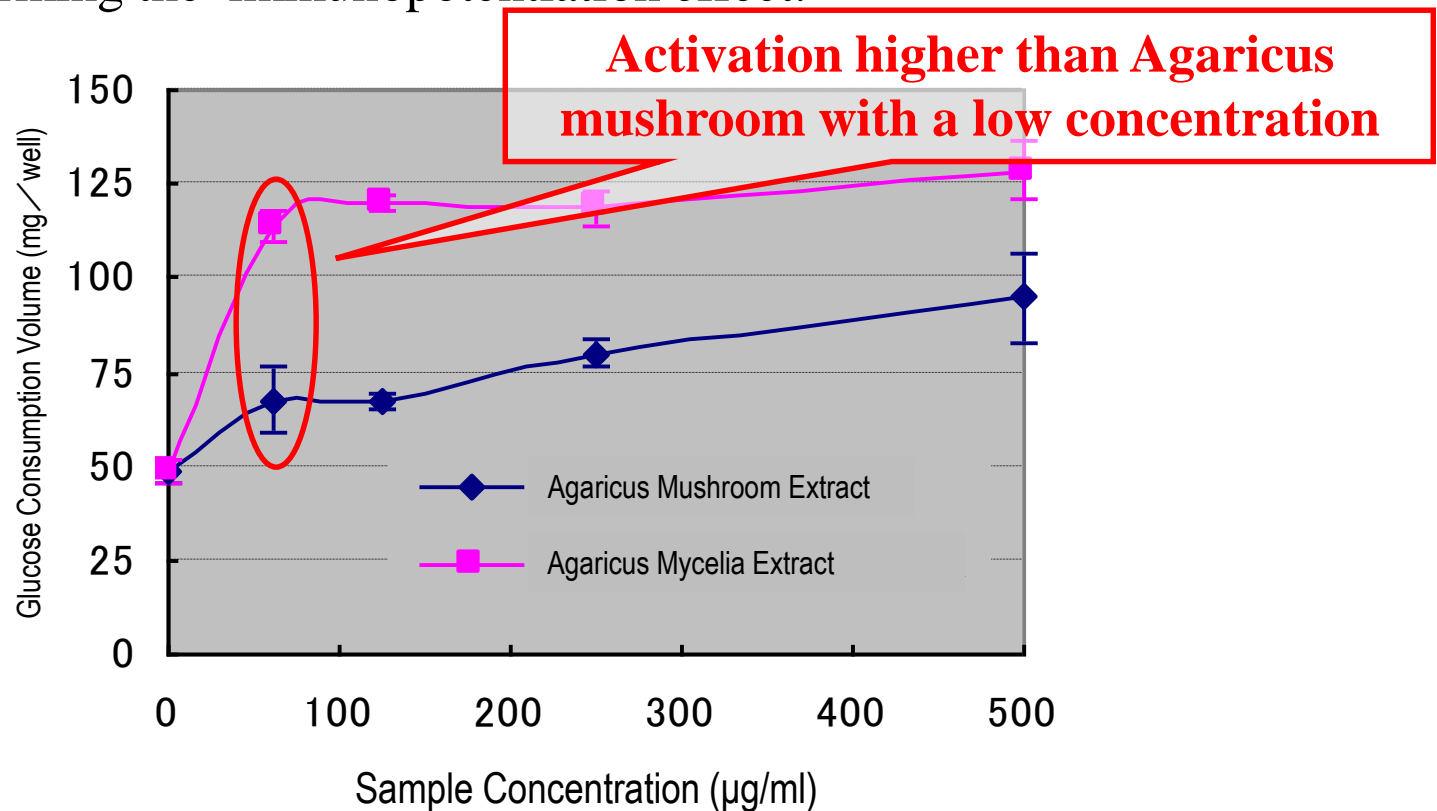
**Blood Sugar
Lowering Effect**

**Blood-Pressure
Reduction Effect**

Product Feature (10)

(Immunity Strengthening Effect Comparison)

With the increased activity of glucose consumption of mouse intraperitoneal macrophage as an index, **an immunity strengthening effect higher than the Agaricus mushroom** was confirmed with **bagasse solid cultured mycelia** as a result of confirming the immunopotentiation effect.



Product Feature (11) (Antiviral Effect Comparison)

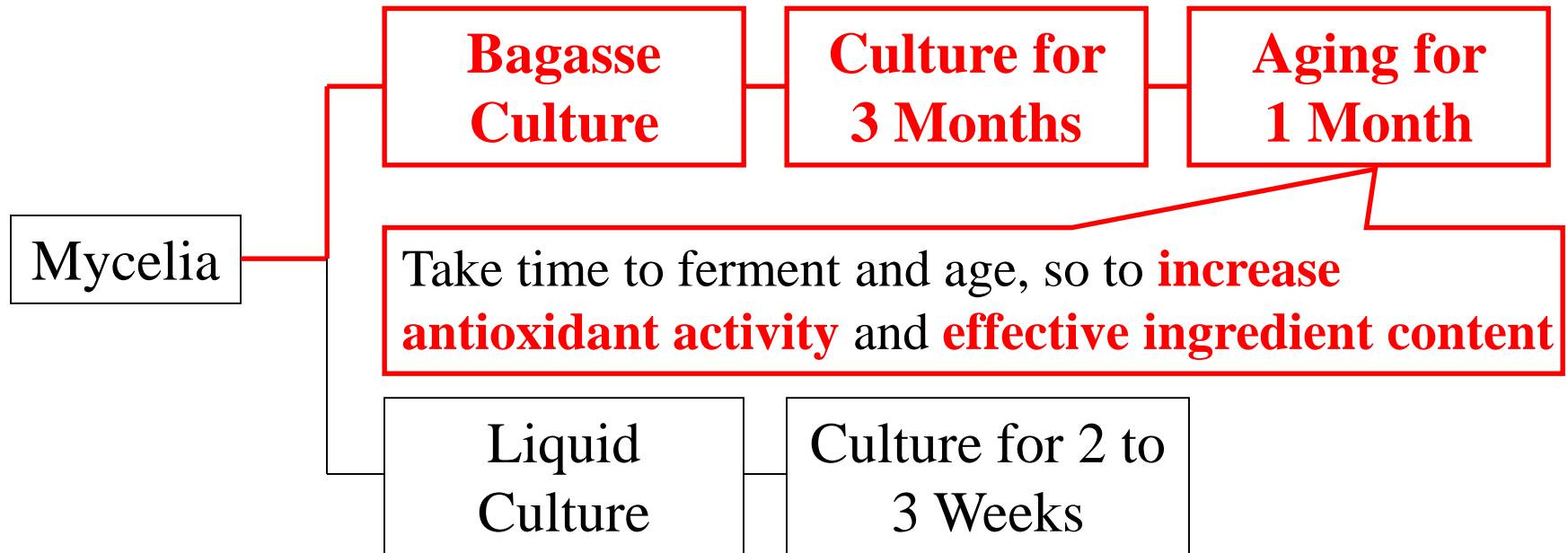
As a result of examining how Agaricus mycelia inhibits the cytolytic effect caused by infecting VERO-317 cells with several types of virus (WEE: horse encephalitis virus, HSV: herpes), **a powerful growth-inhibiting activity against the WEE virus** was observed with **Agaricus Mycelia**.

	W	E	E	H	S	V
Agaricus Mycelia	+	+	+	+	+	+
Agaricus mushroom		—			—	

—: No effect at all ±: Has little effect +: Weak, but has effect

++: Has remarkable effect +++: Completely inhibited growth of virus

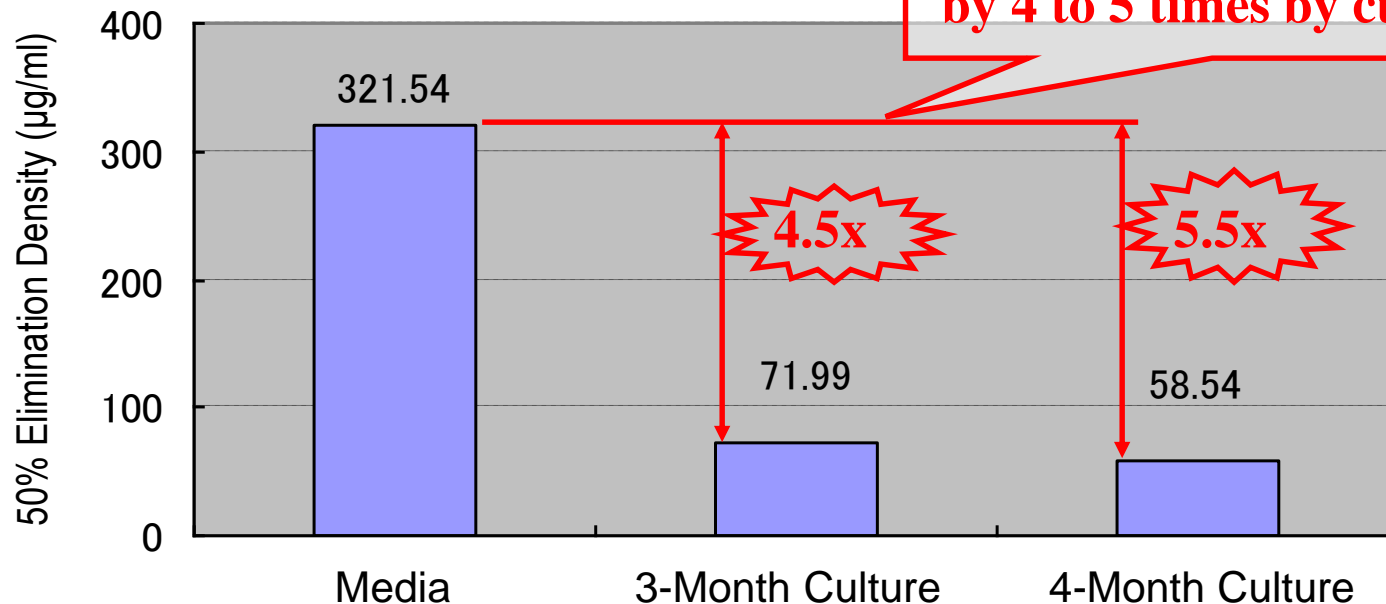
Product Feature (12) (Culture Period)



Product Feature (13) (Antioxidation Effect)

Antioxidants that eliminates active oxygen are extremely important for illness prevention and health maintenance, and the intake of antioxidants fulfills a significant role in the promotion of health and illness prevention.

As a result of examining the antioxidation effect (superoxide anion elimination capacity) of Agaricus mycelia, **an increase with the antioxidation effect** was confirmed.

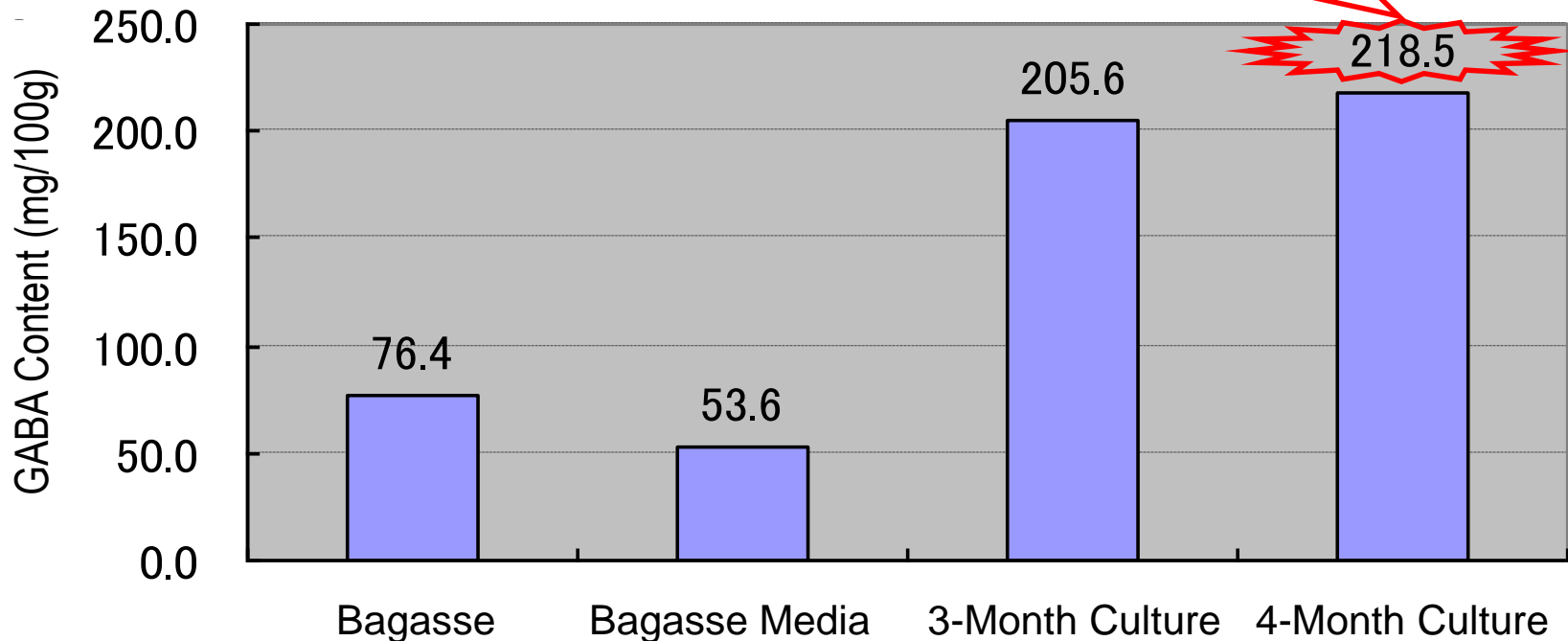


Product Feature (14)

(Change in GABA Content due to Culture Period)

Taking more time to culture Agaricus mycelia was confirmed to **increase GABA volume.**

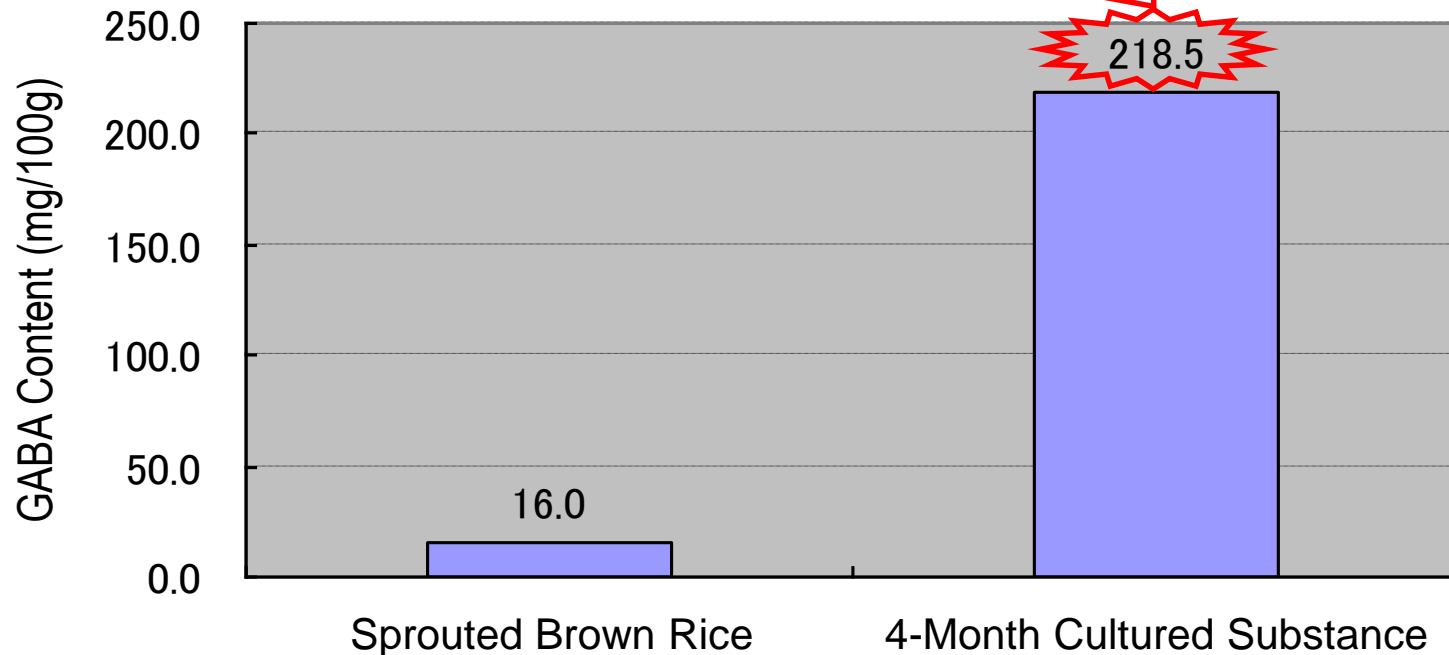
GABA volume after culturing
Increase by 2.8 to 4 times



Product Feature (15)-1 (GABA Content Comparison)

As a result of comparing the GABA volume of Agaricus mycelia and sprouted brown rice, **Agaricus mycelia** was confirmed to **contain more GABA than sprouted brown rice**.

13.6 times more than sprouted brown rice



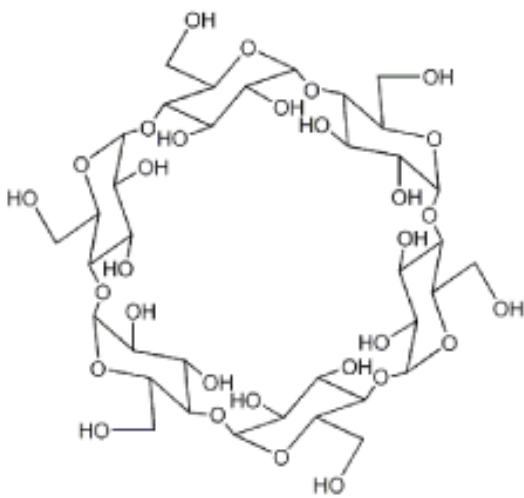
Product Feature (15)-2 (GABA)

- GABA stands for **γ -aminobutyric acid (a type of amino acid)**. It is a substance that is widely distributed among the animal kingdom.
- It exists in the encephalon of animals, and is known as a **neurotransmitter**.
- Sprouted brown rice contains a large amount of GABA, **at about 13 to 16mg per 100g of sprouted brown rice100g**.
- Functions of GABA include, **promotion of brain cell metabolism, suppression of mental symptoms seen with menopausal disorder and autonomic disorder, and blood-pressure reduction**.

Product Feature (16)-1 (Use of Cyclic Oligosaccharide)

Cyclic oligosaccharide (another name: Cyclodextrin) is,

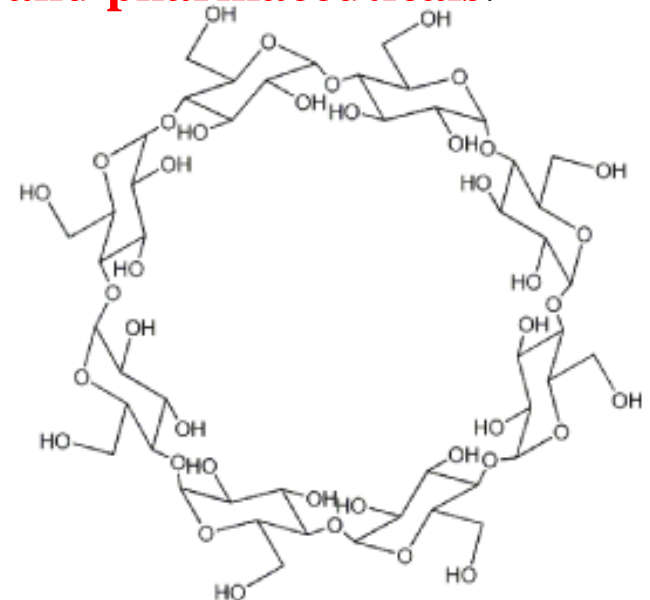
1. Cyclic oligosaccharide is **obtained** by degrading **corn starch** using enzymes
2. It is **used** in various **fields** including **food products and pharmaceuticals**.



α -cyclodextrin



β -cyclodextrin



γ - cyclodextrin

Product Feature (16)-2 (Properties of Cyclic Oligosaccharide)

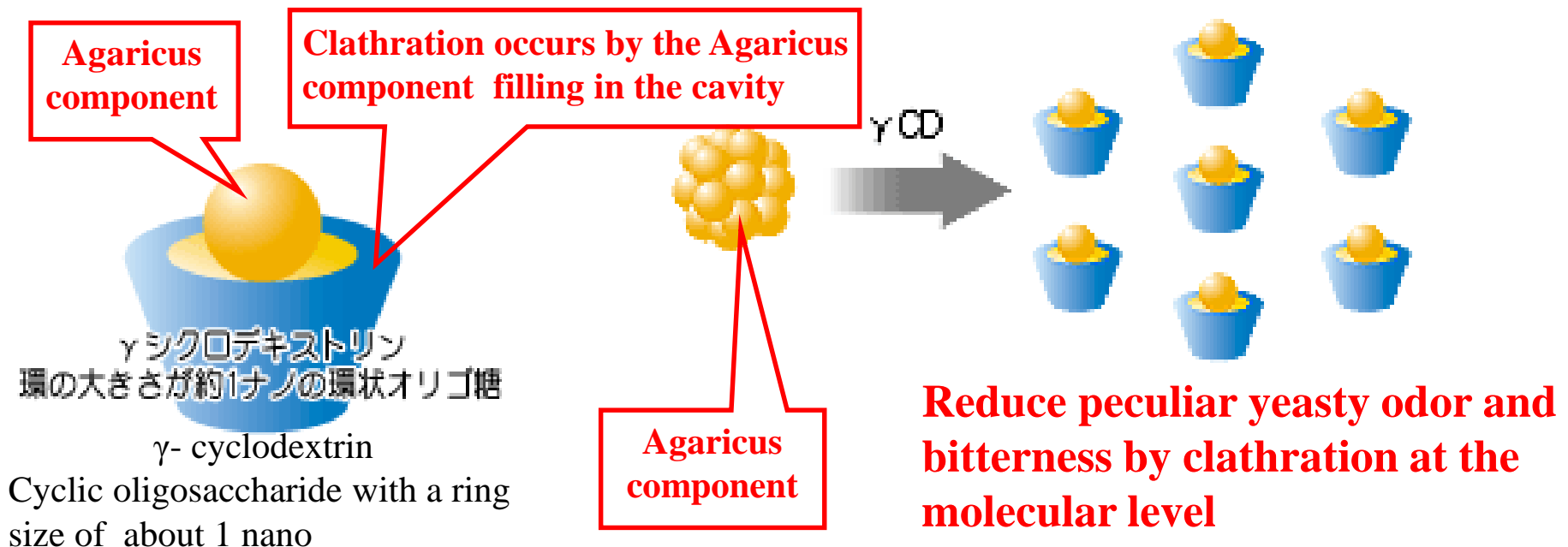
1. Suppresses rise in blood sugar
2. Calms intestinal disorder and irritable bowel syndrome (diarrhea and constipation)
3. Reduces triglyceride and cholesterol levels
4. Relieves allergy diseases
(bronchial asthma, dermatitis, rhinitis, conjunctivitis, etc.)

Product Feature (16)-3 (Clathration due to Cyclic Oligosaccharide)

Use with food products: **sublimation prevention** of scent or pungent component of food products such as wasabi.

Use with medical and pharmaceutical products: **enhanced solubility, stable medical and pharmaceutical products, and enhanced absorption.**

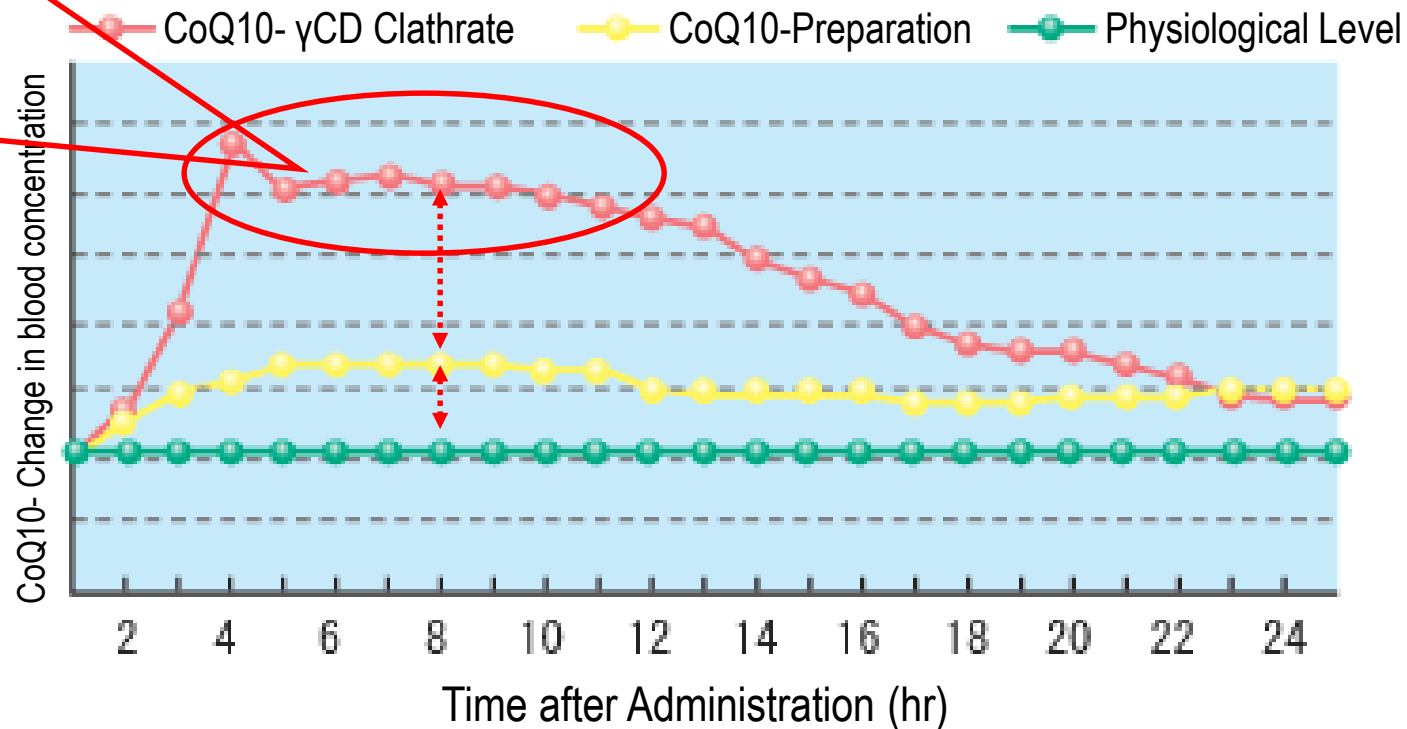
Others: Various products that **deodorizes** the smell of tobacco or meat being grilled.



Product Feature (16)-4 (Persistence due to Cyclic Oligosaccharide Clathration)

Enhancement of absorption and stability of Agaricus mycelia can also be expected through clathration

Enhancement of absorption due to the γ CD clathrate of coenzyme Q10
(Gastric administered to a beagle, and collected blood from forearm vein)



* The pharmaceutical preparations were improved for CoQ10 absorptivity

Academic Publications on Agaricus

▪ *Japan Society for Bioscience, Biotechnology, and Agrochemistry (2000, 2001)*

“Immune System Activation Substances of Agaricus Mycelia Extract”

“Search for Macrophage Activation Substances of *Agaricus blazei* Murill”

▪ *61st Analytical Chemistry Forum (2000)*

“Search for Immune System Activation Substances in Agaricus Mycelia Extract”

▪ *The Japanese Association for Development & Comparative Immunology (2000)*

“Macrophage Activation due to Agaricus Ingredient graduated using Ethanol”

▪ *The Japanese Biochemical Society (2000)*

“Macrophage Activation due to Agaricus Ingredient”

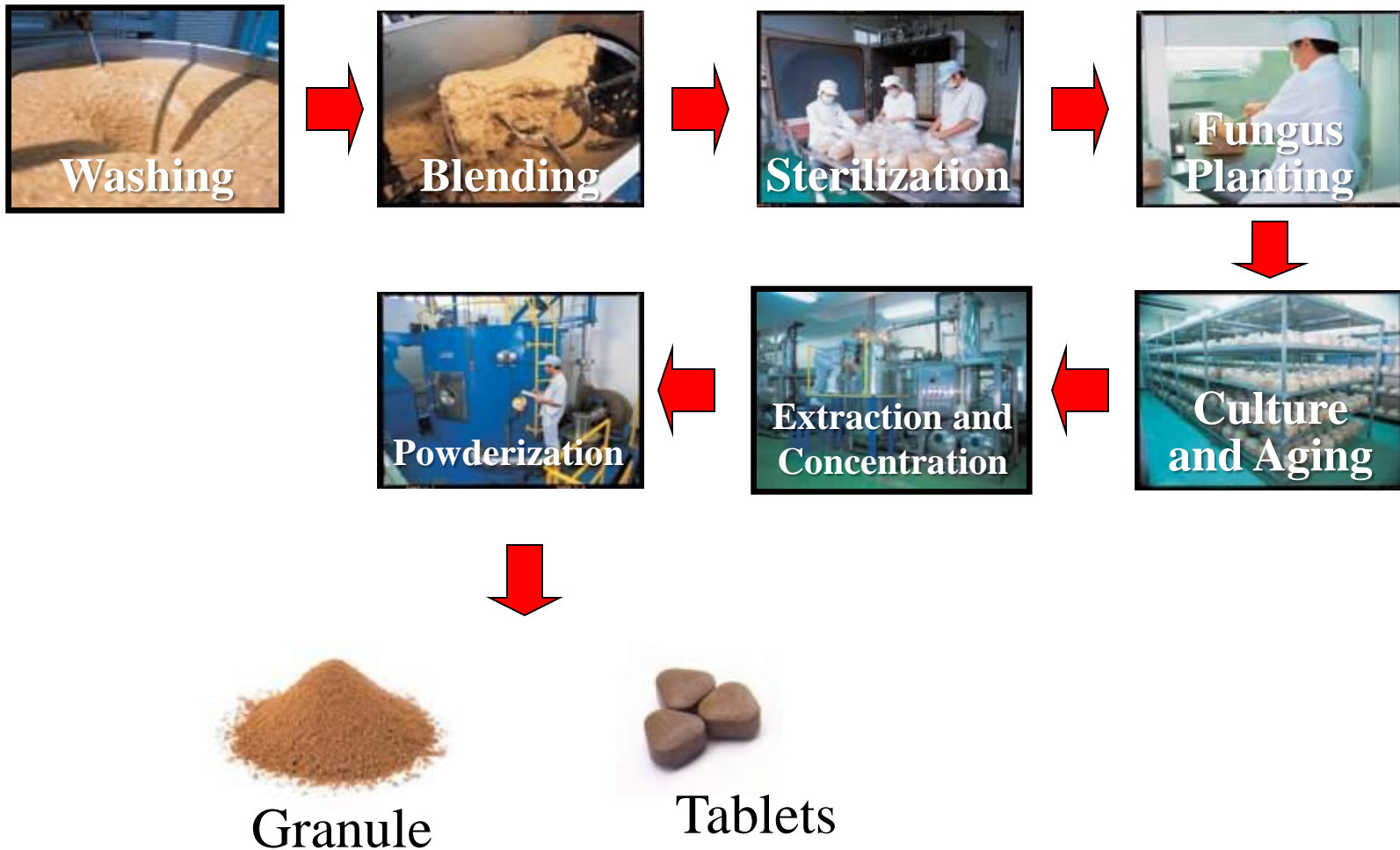
Unsolicited Manuscripts of Theses

▪ *Cell Structure and Function* 26:103-108 (2001)

▪ *BioSci. Biotechnol. Biochem.*, 65 (7), 1645-47 (2001)

Reliable and Safe (1)

(Centralized Management from Culturing to End Product)

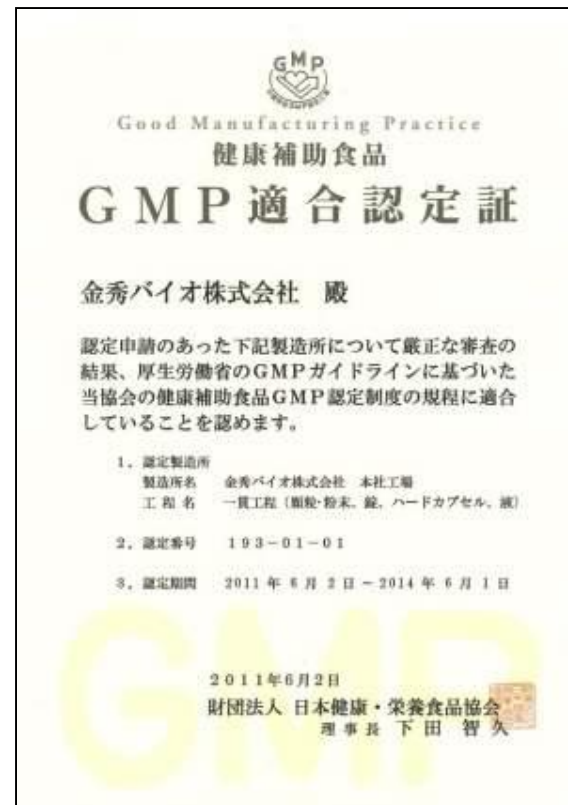


Reliable and Safe (2)

(Management System that carefully pursues High Quality)



ISO22000-certified
January 13, 2006



Health Food Product
GMP Conformity Certified
June 2, 2011

Reliable and Safe (3) (Management System that carefully pursues High Quality)

Kanehide Bio executed genotoxicity tests and safety tests with human beings on raw materials, and confirmed that there were no problems.

<Genotoxicity Test>

	Mutagen Testing	Chromosome Testing	Micronucleus Testing
Agaricus Mycelia	negative	negative	negative

* Test results from TTC Co., Ltd.

<Safety Test with Human Beings>

Judgment was made that there were no clinical problems from safety tests through excessive intake of “Agaricus products (including the fruiting body and mycelia)” subjecting healthy adult male and female.

* Test results from TTC Co., Ltd.

Products that use Agaricus Mycelia

Agaricus Mycelia Tablets



**Agaricus Mushroom Extract
Bulk Powder Granule**



Complex Mushroom Mycelia XD-0013 GOLD

*We deliver longevity and health from
the beautiful island of Okinawa*

 金秀バイオ株式会社