

# AGARICUS BLAZEI

Health food ingredients with good safety and functionality of years of research

## Agaricus Blazei Murill Extract-H

### What is Agaricus Blazei Murill?

Agaricus Blazei Murill is a mushroom of Agaricaceae and is said to originate in the Brazilian Piedade Mountains of South America.



### Functional components of Agaricus mushrooms (polysaccharide protein)

There is a tradition saying that it is a "healthy mushroom". In 1980s, the research on the functionality of Agaricus Blazei Murill began, and it is the mushroom which the research was actively promoted in Japan. Also, in the United States, clinical trials have been conducted at the National Cancer Institute and many academic reports have been published. The studies of Agaricus Blazei Murill in animal studies are known for activation of immune cells such as host macrophages, complement and other immune cells, as well as the activation of interferons, the promotion effect of immune system such as cytokine induction. The active ingredients in mushroom are known as lentinan from shiitake mushrooms, crestin from Kawaratake mycelium, schizophyllan from Suehiro mushroom and neutral or acid polysaccharides mainly consisting of  $\beta$  (1-3)-D-or  $\beta$ -(1-6)-D-glucan.

These  $\beta$ -glucans are compounds which are widely distributed as cell wall components of mushrooms.

The high functionality of Agaricus mushrooms taken by oral ingestion cannot be explained solely by  $\beta$ -glucan. In the study of Mizuno, a macromolecular polysaccharide protein complex containing  $\beta$ -glucan which is called as AB-P is introduced as a functional component of Agaricus.

Literature: Mizuno S, The Chemical Times, 1, 12-21 (1989)

### Immunostimulatory effect

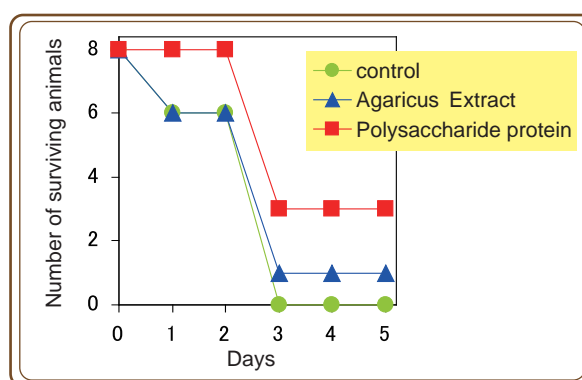
The immune system essential for health is reduced by external and internal stresses and fatigue, which predisposes to illnesses such as cold. It is said that the immunity decreases with age. The polysaccharide protein complex in Agaricus Blazei extract has been shown to activate immune vesicles to enhance immune competence.

### Resistance to infections

Mice were fed Agaricus mushroom extract or Agaricus mushroom-derived polysaccharide protein complexes for 14 days and then infected with *Pseudomonas aeruginosa*  $2 \times 10^7$  cfu intraperitoneally to observe viability.

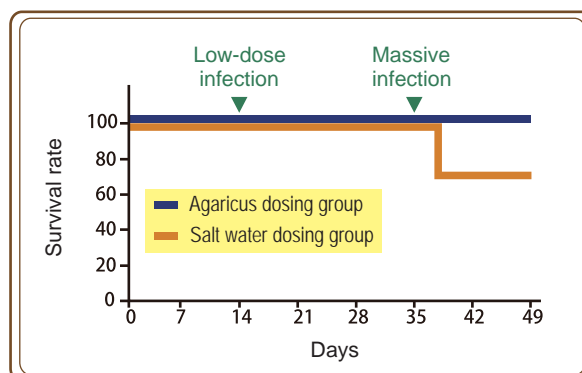
All non-ingested controls died 3 days post-infection

However, 1 of 8 mice survived in the Agaricus mushroom extract group and 3 mice survived in the polysaccharide protein complex group.



### Antiviral resistance

Mice were infected with influenza A virus (H1N1) to a non-pathogenic extent and then infected with a stronger virus by tail-vein injection, 30% of the mice died. On the other hand, mice fed with Agaricus mushroom extract for 14 days showed 100% survival in a same study, and the virus infection resistance was confirmed.



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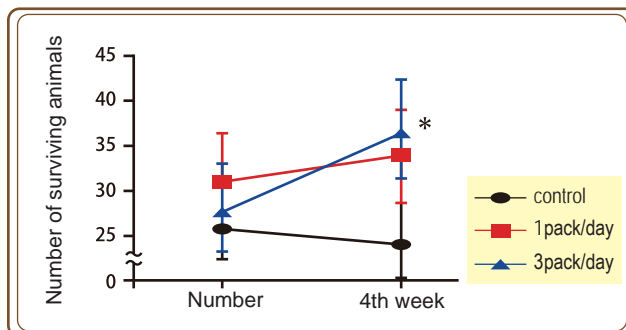
## Safety and efficacy of Agaricus Blazei extract in clinical trials

At the 12th Japan Society for Complementary and Alternative Medicine

**Test** Forty-five subjects, including obese and smokers, were randomly divided into three groups: no intake group (control), 1 pack/day intake of Agaricus Blazei extract processed food, and 3 pack/day intake group (n=15). Blood tests and a questionnaire survey were performed after consuming them for 28 days.

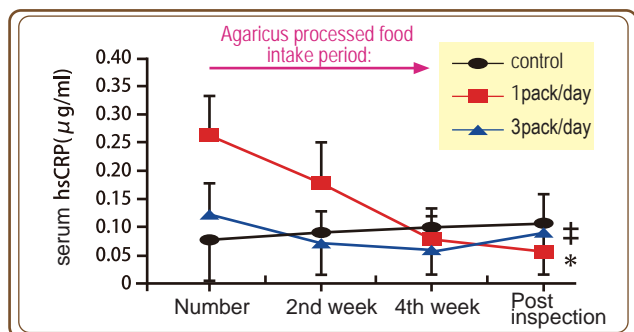
**Result** No abnormalities were observed in the blood tests of those who consumed Agaricus -processed foods, confirming that the safety was high. In addition, the activity of NK cells, which plays an important role in the immune system, was activated by the consumption of Agaricus -processed foods. On the other hand, CRP (C-reactive protein) indicating an inflammatory state in vivo was also improved by the consumption of Agaricus -processed foods. In QOL questionnaires, patients who consumed Agaricus -processed foods showed improvements in physical pain, general feelings of wellbeing, and vitality.

### Immunostimulatory effect



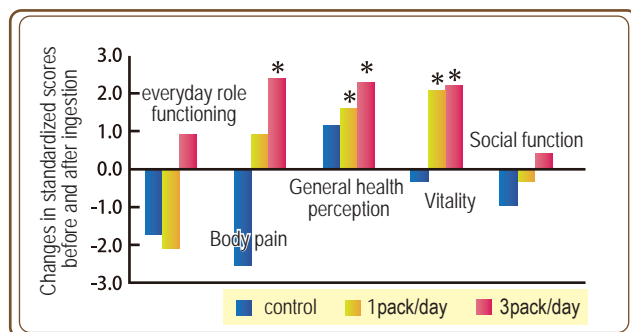
NK cell activity was significantly elevated by consumption of 3 pack/day. Intake-dependent activation was observed

### Reduced in vivo inflammation



Compared to the control group, both 1 pack/day and 3 pack/day consumption showed a decrease in CRP and remained low even 1 week after the end of the test.

### Efficacy in improving QOL



According to the questionnaire after intaking Agaricus, improvement was observed in various items for measuring QOL. In particular, significant improvements in physical pain, overall health and vitality were observed.

## Product specification

Items	Specification
Appearance	Reddish brown to dark brown powder
Moisture content	max. 8.0%
Polysaccharide protein complex	min. 10.0%
Heavy metals (Pb)	max. 20 ppm
Arsenic (As 2 Q 3)	max. 2 ppm
Total plate count	max. 3000cfu/g
Coliforms	Negative
Daily dosage	1,350~ 2,700 mg/day

### Product information

Allergy indication	: no need
Genetically modified	: no
Raw material of animal derived	: no
Label indication	: Agaricus Blazei Extract

- ◆ Packing: 1kg ~
- ◆ Type of packing: Depending on the content ( PE bag/cardboard )
- ◆ Storage: please keep it in the place where is cool and dry.
- ◆ Expiry date: 3 years after production ( condition: unopened state )
- ◆ Quality control: each lot



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