■Product Name ■ Aminothioneine®

The primary active ingredient of Aminothioneine is the amino acid referred to as Ergothioneine (EGT or ERGO) which is abundantly contained in golden oyster mushrooms which are mushrooms of the Pleurotaceae family. Aminothioneine is a powdered extract obtained by the hot water extraction of golden oyster mushrooms and contains 1% or more of Ergothioneine.

In recent years, Ergothioneine has been reported to show various biological effects. Ergothioneine is a naturally-occurring and high-performance antioxidant that is found in the blood, liver, and other organs of animals and is said to play an important role in sustaining life. As humans cannot biosynthesis Ergothioneine, it needs to be ingested from one' s diet. Ergothioneine has been confirmed to be abundantly contained in mushrooms and, in particular, golden oyster mushrooms.

Antioxidant Ergothioneine (*in vitro* antioxidative activity evaluation)

Thus far, the reported antioxidative activity of Ergothioneine. Ergothioneine has a relatively low concentration and superoxide scavenging activity (Figure 1). Additionally, in the inhibition of lipid peroxidation, the inhibitory effects of Ergothioneine have been reported to be high compared to L-N-acetylcysteine and l-cysteine which are the typical antioxidants (Figure 2).

Figure 1 Ergothioneine superoxide scavenging activity

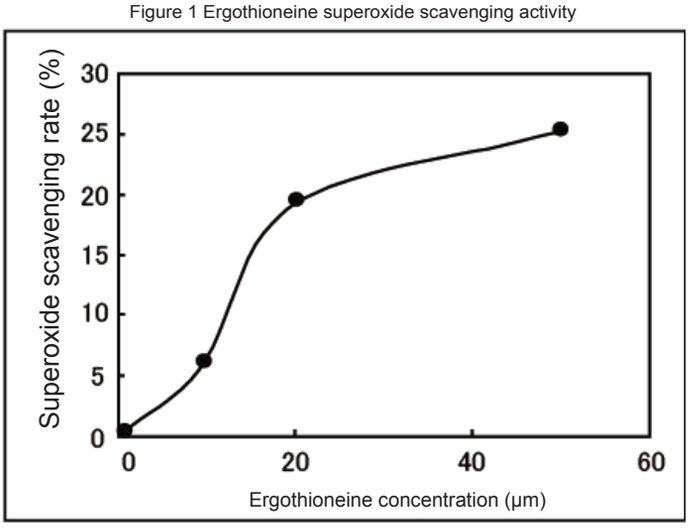
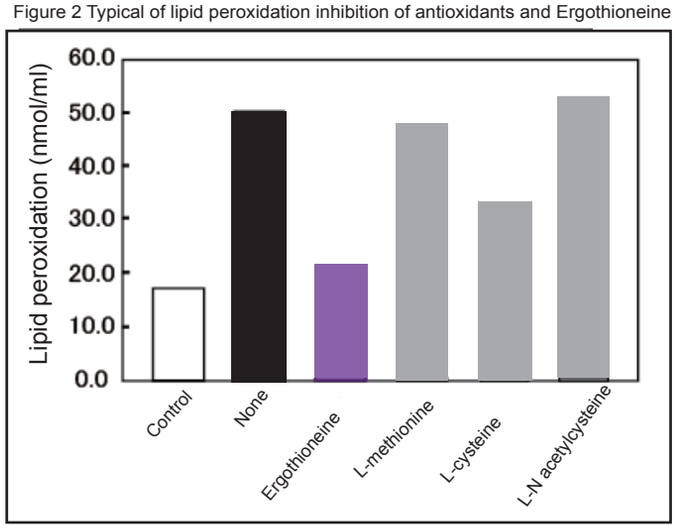


Figure 2 Typical of lipid peroxidation inhibition of antioxidants and Ergothioneine

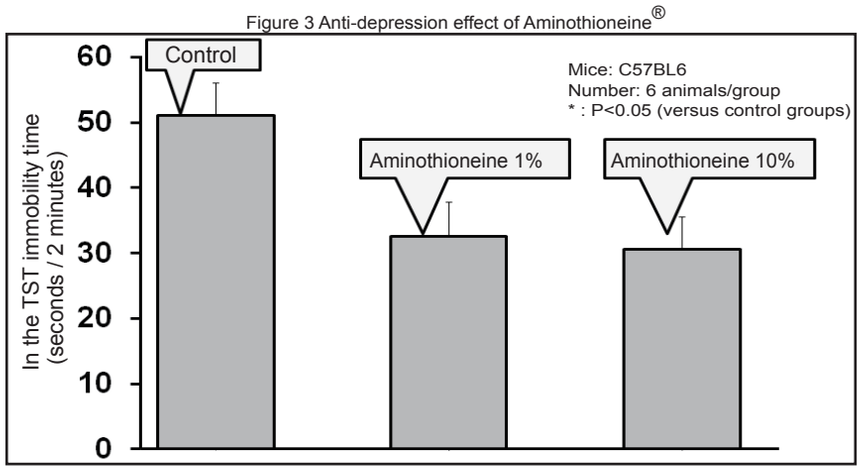


(Obayashi et al., J.cosmet.sci(2005),56,17-27)

Aminothioneine® of anti-depressant effect (Patent No. 5904378 / antidepressants)

In the antidepressant evaluation based on a tail suspension test (TST), mice (n=6) raised for 2 weeks with a diet containing 1% and 10% of Aminothioneine were found to have a significant reduction in periods of immobility (depressive state) compared to mice (n=6) raised for the same period on a normal diet (Figure 3). It is believed that it is possible that Ergothioneine passes through the blood-brain barrier and that there is a possibility that the antioxidant effect of Ergothioneine contributes to depression.

Figure 3 Anti-depression effect of Aminothioneine®



(Professor Kato Masao, Kanazawa University (School of Pharmacy) and our company's joint research)

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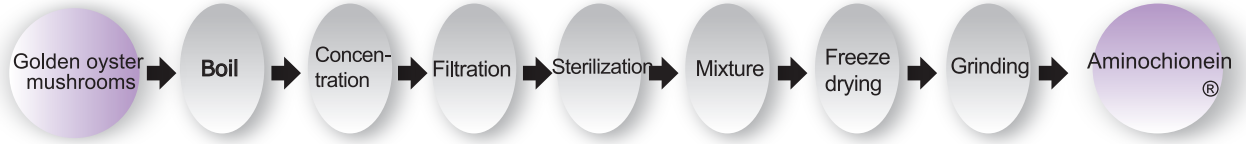
■ Product Name ■ **Aminothionein®**

■ Manufacturing process



■ Ingredients

・Golden oyster mushroom extracts (containing ergothioneine), dextrin

■ Recommended daily intake

・50 - 500mg per day

■ Uses

・Nutritional supplement

■ Storage method

・Avoid direct sunlight, store at room temperature

■ Packing

・1 kg (aluminum zip-bags)

■ Expiration date

・One year (provisional)

■ Standard

Item	Standard	Testing method
Appearance Color	Pale yellowish-brown powder	Visual
Properties	Pale yellowish-brown powder	Sensory evaluation
Ergothioneine wt%	1.0 or less	HPLC method
Dry weight wt%	6.0 or less	Normal pressure, 105℃, 3 hours
Arsenic (as As2O3) ppm	2 or less	Atomic absorption spectrophotometry
Heavy metals (as Pb) ppm	20 or less	Sodium Sulfide colorimetric method
Viable bacteria count /g	3,000 or less	Standard agar plate culture method
Coliform bacteria	Negativity	BGLB method
Fungus, yeast /g	200 or less	Potato dextrose agar medium method

■ Safety

・13-week repeated oral dose study (rats: male and female):
No observed adverse effect level > golden oyster mushroom hydrothermal extraction liquid 15ml/kg/day (560 mg / kg/day in the Aminochionein conversion/day)
・Pesticide residue testing: 227 items not detected (golden oyster mushroom analysis results)

●We provide OEM to customers considering new product development and product renewal.
○Please feel free to consult us.

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