

# LION'S MANE *Hericium erinaceus*



M2 Ingredients, Inc., grows and processes Lion's Mane mushroom in its certified 100% organic, cGMP facility in Carlsbad, California. The Lion's Mane is grown through the full life cycle of the mushroom and includes all of the bioactive compounds produced during the mycelial stage – including erinacines and during the fruiting body stage – including hericenones. Both of these compounds have been researched for their cognitive health benefits. Lion's Mane is also highly regarded for its immune support and gastro-protective functionalities.

Lion's Mane mushroom (*Hericium erinaceus*) has active compounds that affect the synthesis and activity of neurotrophic factors that are important for the brain and nervous system. Neurotrophic factors have potent biological activities, such as preventing neuronal death and promoting neurite outgrowth – essential for maintenance and organization of neurons. A nootropic is defined as a substance that enhances cognition and memory and facilitates learning. Several studies have reported important nootropic bioactivities in Lion's Mane – including the induction of Nerve Growth Factor (NGF) bio-synthesis, inhibition of the cytotoxicity of the beta-amyloid peptide and protection against neuronal cell death by oxidative stress. Functional deficiency of NGF is related to memory loss and plays a role in the etiology of Alzheimer's.

Research on the low-molecular weight compounds found in Lion's Mane that promote NGF such as hericenones, Amycenone and erinacines have reported that the molecules are small enough to cross the blood-brain barrier in order to effect increased bio-synthesis of NGF.



## COGNITIVE HEALTH

In a 2008 double-blind, placebo-controlled Japanese clinical study of 50 to 80-year-old men and women with cognitive decline, a diet including Lion's Mane mushroom powder reversed age-related cognitive decline.

Research has been conducted on mice injected with neurotoxic peptides to mimic amyloid plaque formation and inhibit cognitive capacity. The mice were unable to memorize a simple maze following the injection. After 23 days of a diet that included 5% dried Lion's Mane mushroom, the mice not only were able to memorize the maze, but also regained improved cognitive capacity.

Amyloid plaque formation is considered to be a primary morphological biomarker of memory loss conditions. The plaque formation interferes with neural transmission affecting nerve degeneration.



## MOOD

The Lion's Mane mushroom has been researched for its effects on depression and anxiety. Women fed cookies made with Lion's Mane powder exhibited a reduction in symptoms of depression and anxiety as measured by a clinical Indefinite Complaints Index (ICI). The researchers reported that the results suggest a different mechanism than the NGF-enhancing action of this mushroom.



## SPORTS PERFORMANCE

The ability to focus during training and competition is a key variable in sports performance. Nootropics have recently been researched for their role in cognitive health and concentration in sports activity where milliseconds matter in decision-making and reaction time. Additionally, neuro-muscular conduction is important for agility, coordination and speed. Lion's Mane has been shown to have protective and reparative properties on the myelin sheath, which is critical in nerve conduction.

# M2 INGREDIENTS

Founded in 2010, M2 Ingredients, Inc., is a leading producer of certified 100% organic, whole food mushroom powders with the full spectrum of bioactive compounds to support daily health, sports performance, recovery and cognition. The Company's cutting-edge innovation in product development is made possible by the team's extensive technical expertise and its proprietary growing methodology. Eleven species of certified 100% organic mushrooms are grown, dried, milled and packaged in its cGMP certified state-of-the-art facility in Carlsbad, California.

Available in single species and custom blends, M2 Ingredients' products represent a commitment to offer the world's highest quality mushroom powders with health benefits for people and their pets. The Company's award-winning and scientifically studied mushroom powders have been used in supplements and food products for people and animals throughout the world.



## PRODUCT SPECIFICATIONS

Identification	Positive ID to species using DNA sequencing
% Moisture	< 6% moisture
Particle Size	≥ 95% through 60 mesh
Gluten	< 20 ppm
TPC	≤ 5,000 cfu/g
Yeast & Mold	≤ 500 cfu/g
Coliforms	≤ 100 cfu/g
Pathogens (Salmonella, Staph, E. coli)	Absent / 25 g
Arsenic (As)	≤ 0.25 ppm
Cadmium (Cd)	≤ 0.1 ppm
Lead (Pb)	≤ 0.1 ppm
Mercury (Hg)	≤ 0.1 ppm

## SENSORY SPECIFICATIONS (S3)

Test	Specification
Appearance	Powder
Color	Brown
Aroma	Mild/Earthy
Flavor	Slightly Bitter / Nutty / Earthy
Texture	Powdery

[M2INGREDIENTS.COM](https://m2ingredients.com)



**APPLICATIONS**  
CAPSULES, POWDERS, BARS,  
BEVERAGES, SNACKS AND FOOD