



EXCLUSIVE SELECTION OF
MEDICINAL MUSHROOMS
.....



- Information exclusively intended for professional use -

Cordyceps



- » Energy and resistance
- » Sexual function and libido
- » Respiratory health

Nutritional information: 1 capsule
Cordyceps (40% polysaccharides) (8:1) 500 mg

- **500 mg extract per capsule**
(= 4 g of dried mushroom)
- **40% polysaccharides**

OBTAINED THROUGH FERMENTATION

Maitake



- » Immune system stimulant
- » Chemotherapy coadjutant
- » Anti-diabetic

Nutritional information: 1 capsule
Maitake (40% polysaccharides) (8:1) 400 mg

- **400 mg extract per capsule**
(= 3.2 g of dried fruiting body)
- **40% polysaccharides**



**CULTIVATED IN BEECH AND OAK
TREE TRUNKS**



The mushrooms used by NewRoots Herbal are cultivated **organically** and sustainably in climate-controlled greenhouses without shade.



All of our mushrooms are delivered in plant-based capsules (100% plant cellulose), with no genetically modified organisms (**NON-GMO**), and are therefore apt for vegans.



ISO 17025

New Roots Herbal ensures, through the Canadian laboratory N.H.P. Laboratories Inc. (**ISO 17025:2005**-certified), that both raw materials and finished products are free of contaminants and adulteration.



They are **free of heavy metals, pesticides and herbicides**. They undergo strict quality control in order to guarantee maximum strength, identity and purity.



Lion's Mane



- » Neuroprotection (cognitive support)
- » Gastritis (*H. pylori*) and gastric mucosa protection

Nutritional information: 1 capsule
 Lion's mane (40% polysaccharides) (8:1) 500 mg

- **500 mg extract per capsule**
(= 4 g of dried fruiting body)
- **40% polysaccharides**



CULTIVATED IN OAK TREE TRUNKS

Reishi



- » Immune-modulating and anti-inflammatory (allergies)
- » Anti-tumour
- » Energy and stress resistance (neurasthenia)

Nutritional information: 1 capsule
 Reishi (40% polysaccharides) (8:1) 500 mg

- **500 mg extract per capsule**
(= 4 g of dried fruiting body)
- **40% polysaccharides**



CULTIVATED IN LINDEN TREE TRUNKS

Shiitake



- » Cardiovascular system (cholesterol)
- » Chemotherapy coadjuvant
- » Immune system (viral infections, candida)

Nutritional information: 1 capsule
 Shiitake (40% polysaccharides) (8:1) 300 mg

- **300 mg extract per capsule**
(= 3.2 g of dried fruiting body)
- **40% polysaccharides**



CULTIVATED IN PINE, CEDAR AND CYPRESS TREE TRUNKS

Resilience Mushroom Blend



- » Energy and stress resistance
- » Enhancement of immune response
- » Anti-ageing (antioxidant, cardiovascular health, neuroprotection)

Nutritional information: 3 capsules
 Reishi extract (8:1) 238,5 mg (1.9 g of dried fruiting body)
 Maitake extract (8:1) 238,5 mg (1.9 g of dried fruiting body)
 Shiitake extract (8:1) 238,5 mg (1.9 g of dried fruiting body)
 Chaga extract (8:1) 238,5 mg (1.9 g of dried fruiting body)
 Cordyceps extract (8:1) 123 mg (1 g of dried mushroom)
 Lion's mane extract (8:1) 123 mg (1g of dried fruiting body)

- **40% polysaccharides per capsule**

CORDYCEPS (*Paezilomyces hepiali*)

Introduction

CORDYCEPS (*OPHIACORDYCEPS SINENSIS*) IS A MEDICINAL MUSHROOM THAT GROWS IN THE WILD AT HIGH ALTITUDES THAT ARE FREE OF POLLUTION IN THE HIMALAYAN MOUNTAINS AND THE TIBETAN PLATEAU.

IT IS UNIQUE AMONG MEDICINAL MUSHROOMS BECAUSE IT GROWS WITHIN A HOST, THE CATERPILLAR. THIS PARASITIC FUNGUS GROWS ON THE LARVA OF A MOTH, *HEPIALUS ARMORICANUS*, ABSORBING ALL OF ITS NUTRIENTS FROM THE CATERPILLAR'S BODY.

IT IS HIGHLY APPRECIATED IN TRADITIONAL CHINESE MEDICINE FOR ITS ANTI-AGEING PROPERTIES AND ITS APPLICATIONS, INCLUDING THE TREATMENT OF SUPRARENAL FATIGUE, RESPIRATORY AND RENAL DISORDERS, AND IMPROVING RESISTANCE AND LIBIDO .

DUE TO THE HIGH COST OF COLLECTING IT IN THE WILD, THE FOOD INDUSTRY USES THE VARIETY *PAECILOMYCES HEPIALI*, WHICH IS FERMENTED UNDER CONTROLLED CONDITIONS.

Clinical summary

- » **Main therapeutic applications:** fertility and sexual function, energy, diabetes, respiratory function, renal support, hepatic disorders and cancer.
- » **Active principles:** adenosine and cordycepin.
- » **Dose:** 3-6 g of mycelial biomass daily for most conditions. Doses of up to 50 g of mycelial biomass daily have been used with good results in cancer (27).
- » **Precaution:** with hormone-dependent cancers (prostate and breast) due to increased levels of oestrogen and testosterone.

Activity

- » **Anti-ageing:** It improves learning and memory in mice. This effect appears to be related to its antioxidant effects. (1)
- » **Energy/resistance:** In healthy individuals between 50 and 75 it improves exercise capacity and resistance to fatigue (2). In sedentary people, aerobic capacity is increased (3) while in athletes this effect is not noticed since maximum aerobic capacity has already been reached (4).
- » **Sexual function:libido:** Other studies in animals have shown that it increases male hormone levels and improves the quality and quantity of sperm (5).
- » **Fertility:** it has a beneficial effect on female fertility by stimulating the production of 17 β -estradiol (oestrogen) (6). This effect could be beneficial for the treatment of post-menopausal osteoporosis (7).
- » **Diabetes:** it increases insulin release and cellular insulin sensitivity (8,9). Cordycepin and its derivatives have an active role in its anti-diabetic action (10).
- » **Liver protection:** in animals it has been proven capable of inhibiting hepatic fibrosis and of helping re-establish and improve hepatic function (11,12).
- » **Renal protection:** improves renal function in patients with renal failure (13). It protects the kidneys from nephrotoxicity caused by cyclosporine (14) and gentamicin (15).
- » **Respiratory diseases:** it can help with respiratory problems such as bronchitis (16) and asthma (17).
- » **Antiviral:** Its nucleosides inhibit viral replication (18) and its polysaccharides modulate immune response to viral infections (19).
- » **Cancer:** In vitro evidence shows promising activity for cancer treatment (20-23). It aids recovery from Taxol-induced leukopenia in mice (24). It also offers protection against radiotherapy-induced damage to bone marrow and intestinal tissue in mice (25). It improves survival in patients with hepatocellular carcinoma (26).

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MAITAKE (*Grifola frondosa*)

Introduction

MAITAKE IS AN EDIBLE MUSHROOM NATIVE TO JAPAN, AND IT CAN ALSO BE FOUND IN EUROPE AND NORTH AMERICA. IT GROWS IN A FAN-LIKE SHAPE IN SHADES OF GREYISH-BROWN ON TREES AND FALLEN WOOD, AND CAN REACH OVER 45 KG IN WEIGHT.

IT HAS TRADITIONALLY BEEN USED IN EASTERN MEDICINE TO FAVOUR THE IMMUNE SYSTEM. IT HAS BEEN OBSERVED SINCE ANTIQUITY THAT PEOPLE WHO INCLUDE IT IN THEIR DIET HAVE FEWER DISEASES AND LIVE LONGER.

Activity

- » **Cancer:** Several clinical trials have shown its efficacy in diverse types of cancer (breast, lung, liver) (1-2). In mice it increases the efficacy of chemotherapy with cisplatin, and it reduces nephrotoxicity (3). The maitake D-fraction (beta-glucans) has great potential for treating cancer, stimulating the immune system and reducing the adverse effects of chemotherapy (4,6). It has also shown beneficial and preventive effects in bladder cancer (7-8).
- » **Diabetes:** In animal models, it has been shown to have an anti-diabetic effect at high doses (9-10). In a small clinical trial, it showed an improvement in glycaemic control (11).
- » **Cholesterol:** in animals fed a high-fat diet, it helps lipid metabolism by inhibiting hepatic and serum lipids (14).
- » **Hypertension:** It also has the short-term effect of reducing blood pressure in animals (13).
- » **Polycystic ovary syndrome:** It induces ovulation in patients with polycystic ovary syndrome (PCOS) (14).
- » **Cold and Flu:** It increases antibody production in response to flu vaccination, and also reduces cold symptoms (15).



Clinical summary

- » **Main therapeutic application:** cancer.
- » **Active principles:** polysaccharides (beta-glucans).
- » **Dose:** 35-150 mg of D-fraction/MD-fraction daily combined with 4-6 g of dried fruiting body daily.

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LION'S MANE (*Hericium erinaceus*)

Introduction

LION'S MANE IS A MUSHROOM WITH A UNIQUE ASPECT THAT GROWS IN DEAD TREES. UNLIKE COMMON VARIETIES OF MUSHROOMS, LION'S MANE HAS LONG WHITE THREADS THAT GIVE IT THE LOOK OF A MANE OR BEARD.

LION'S MANE IS WELL KNOWN IN THE ORIENT FOR ITS REGENERATIVE AND RESTORATIVE EFFECTS ON COGNITION AND THE NERVOUS SYSTEM, AS WELL AS ITS IMMUNE-MODULATING FUNCTION.



Clinical summary

- » **Main therapeutic applications:** dementia, Alzheimer's disease, multiple sclerosis and neurological damage.
- » **Active principles:** ciatane derivatives (hericenones and erinacines).
- » **Dose:** 3-5 g of dried fruiting body daily to stimulate NGF. For gastritis and MRSA, a dose of 25-50 g of dried fruiting body daily is used.

Activity

- » **Cognitive function:** it has beneficial effects in patients with mild dementia, improving functional capacity (1). In another clinical trial, it improved cognitive function (2).
- » **Multiple sclerosis:** In in vitro studies, it improves the myelination process in mature myelinated fibres, with possible benefits for patients with multiple sclerosis (3-4).
- » **Neuropathy:** It stimulates nerve growth factor (NGF) which plays an important role in neuropathy (5). In animals, it has a protective effect for diabetic neuropathy (6).
- » **Nerve damage:** It also improves recovery in rodents with damaged peroneal nerve (7).
- » **Methicillin-resistant *Staphylococcus aureus* (MRSA):** It has activity against MRSA, which is responsible for numerous nosocomial infections (contracted at hospital) (8).
- » **Gastritis:** It has antibacterial activity against *Helicobacter pylori* (9-10), the cause of most cases of chronic gastritis (11). It has been shown to have a protective effect on gastric mucosa in animals (12).
- » **Cancer:** It strengthens apoptosis induced by doxorubicin in hepatocarcinoma cells (13). Its extracts have been shown to decrease the growth of several types of tumors both "in vitro" and "in vivo", due to its anti-tumor and immune-stimulating properties (14-16).

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REISHI

(*Ganoderma lucidum*)

Introduction

REISHI HAS BEEN USED AS A CURATIVE RESOURCE FOR OVER 4,000 YEARS, PARTICULARLY IN CHINA AND JAPAN. ITS USE WAS OFTEN RESERVED FOR EMPERORS AND NOBLES DUE TO ITS RARITY AND HIGH COST. ACCLAIMED AS THE "MUSHROOM OF IMMORTALITY", IT EARNED ITS REPUTATION FROM ITS CAPACITY TO INCREASE VIGOUR AND LONGEVITY.

IT HAS TRADITIONALLY BEEN USED FOR LIVER PROBLEMS, HEART PROBLEMS, ARTHRITIS, HYPERTENSION, ASTHMA AND CANCER.

Clinical summary

- » **Main therapeutic applications:** allergies, hepatic support, cancer (breast and prostate), hypertension and anxiety/insomnia.
- » **Active principles:** triterpenes and polysaccharides.
- » **Dose:** 3-6 g of aqueous extract daily for cancer and 1-3 g of aqueous extract daily for other pathologies.
- » **Precaution:** with patients on anti-hypertensive, sedative or anti-coagulant medication.



Activity

- » **Cancer:** The polysaccharide extracts of reishi significantly increase immune response in patients with advanced stages of cancer (1-3). It has beneficial effects on breast cancer-related fatigue (4).
- » **Allergies:** Thanks to its immunomodulating and anti-inflammatory properties, it contributes to the treatment of allergies (5-7)
- » **Hepatic diseases:** Diverse studies have shown it has hepatoprotective properties (8-10). Clinical studies show that its extracts are effective in patients with chronic hepatitis B (11-12).
- » **Cardiovascular health:** It has beneficial effects on blood pressure and blood lipids in patients with coronary disease (13-14).
- » **Insomnia/anxiety:** It has sedative effects, significantly decreasing sleep onset latency and increasing total sleep time (15-16).
- » **Rheumatoid arthritis:** "In vitro", it inhibits the production of synovial fibroblasts of rheumatoid arthritis, suggesting its possible application in treating autoimmune conditions such as rheumatoid arthritis (17).
- » **Anti-ageing:** It inhibits the toxicity of synaptic beta-amyloid, making it a potential treatment for Alzheimer's disease (18). It also affects cardiovascular health (13-14), the immune system (1) and the control of glucose (19) and cholesterol levels (20).
- » **Energy and stress resistance (neurasthenia):** It improves the symptoms of neurasthenia, a disorder characterized by inexplicable fatigue after mental or physical effort (21).
- » **Type II diabetes mellitus:** It is effective at reducing blood glucose levels (22).
- » **Benign prostatic hyperplasia:** It inhibits the activity of 5-alpha-reductase (23) and improves symptoms (24).
- » **Antiviral and antibacterial:** It inhibits the replication of certain viruses such as herpes simplex and is effective against certain bacteria (25-27).

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SHIITAKE *(Lentinula edodes)*

Introduction

SHIITAKE IS AN EDIBLE MUSHROOM NATIVE TO JAPAN, CHINA AND KOREA. IT HAS BEEN USED IN ASIAN COOKING FOR OVER 2,000 YEARS. DURING THE MING DYNASTY, IT WAS RESERVED FOR THE EMPEROR AND HIS FAMILY, AND BECAME KNOWN AS THE EMPEROR'S FOOD.

IT HAS TRADITIONALLY BEEN USED TO STRENGTHEN THE IMMUNE SYSTEM, EXTEND LIFE AND TREAT DISEASES OF THE LIVER, RESPIRATORY TRACT AND CIRCULATION.



Clinical summary

- » **Main therapeutic applications:** cancer and cholesterol control (coadjutant to statins).
- » **Active principles:** polysaccharides (lentinan) and eritadenine.
- » **Dose:** 2-6 g of aqueous extract daily for immune support, and 9 g of dried fruiting body daily for other pathologies.

Activity

» **Cancer:** Its combination with monoclonal antibodies improves the outcome of gastric cancer treatment (1). A meta-analysis of 5 clinical trials showed a significant increase in survival in advanced gastric cancer patients treated with chemotherapy and lentinan, the beta-glucan found in shiitake (2). One study showed that the administration of tegafur with lentinan increased survival in metastatic prostate cancer (3).

Other studies confirm an increase in survival, a decrease in side effects from chemotherapy and improvement in quality of life for colorectal, hepatic, prostate, breast and oesophageal cancer patients (4-7).

- » **Cholesterol:** One clinical study showed a reduction in serum cholesterol in patients with hypercholesterolemia (8).
- » **Hepatitis B:** It has a hepatoprotective

effect, improving liver function (9-10).

- » **HIV:** It increases immunity and has antiviral activity in vivo and in vitro (11-12). Clinical studies have shown its immunomodulating effect in patients with HIV (13-14).
- » **Candida:** It has been proven to exert powerful anti-candida activity in-vitro (15-18).

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CHAGA

(*Inonotus obliquus*) (found in our formula RESILIENCE MUSHROOM BLEND)

Introduction

CHAGA IS A MUSHROOM THAT GROWS ON BIRCH TREES IN COLD ZONES IN RUSSIA, CANADA, JAPAN AND NORTHERN SCANDINAVIA. ITS OUTER SURFACE IS BLACK AND LOOKS LIKE BURNT CHARCOAL.

IT HAS BEEN USED TRADITIONALLY IN EASTERN EUROPE TO TREAT DIGESTIVE PROBLEMS, LUNG CANCER, DIABETES, CARDIOVASCULAR DISEASE, TUBERCULOSIS, INTESTINAL PARASITES AND LIVER DISEASE.

Clinical summary

- » **Main therapeutic applications:** cancer, antiviral and antioxidant.
- » **Active principles:** betulinic acid derivatives (triterpenes), sterols and polysaccharides.
- » **Dose:** 2-5 g of aqueous extract daily.



Activity

- » **Cancer:** In vitro studies show that betulinic acid, which is present in chaga, possesses activity against different types of cancer cells (human melanoma, neuroblastoma, brain tumour, ovarian cancer, leukaemia, etc.) (1-2). It shows a promising effect when combined with radiotherapy on human melanoma cells (3). In rodents it exerts cancer-fighting activity with no systemic toxicity (1). Its polysaccharides have an immune-stimulating effect (4).
- » **Antiviral:** Betulinic acid has been proven effective against the HIV-1 virus by inhibiting replication (5-7). In a preliminary study, activity was detected against flu virus A and B (8), as well as herpes simplex (9) and human papilloma virus (10).
- » **Anti-inflammatory:** It shows an anti-inflammatory effect in vitro (11) and in vivo (12).
- » **Anti-diabetic:** In animal models, a blood sugar-lowering effect has been seen (13).

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Standardized extracts

The mushroom extracts used by New Roots Herbal are standardized to contain a minimum concentration of **40% polysaccharides**, making them some of the **strongest and purest** extracts available on the market.

Standardization ensures that the end product contains the necessary polysaccharide content to provide a **therapeutic dose**.

Polysaccharides are large, complex molecules which are structurally diverse, with ample physicochemical properties. Polysaccharides help the body to adapt to stressors, **stimulate immune function** and maintain optimal health.

Beta-glucans are polysaccharides that stimulate and regulate the **immune system**. They help promote the immune system naturally, optimizing its response to disease and infection. They stimulate macrophage activity, the immune cells that ingest and destroy invasive pathogens (phagocytes), and stimulate the action of other immune cells. They also stimulate white blood cells to bind to tumours or viruses and release chemical substances to destroy them.



Hot water extraction

Our mushrooms are extracted in hot water, **without milling**, and standardized to obtain 40% polysaccharides.

Hot water extraction is fundamental for obtaining a high quality and effective mushroom extract. This is the extraction method traditionally used in Asia. It's also the most common extraction method used in clinical trials and research.

The polysaccharides of mushrooms are bound to the cell walls which are composed of **chitin**. This rigid form of cellulose is not digestible, so it must be

dissolved in order to **release its polysaccharides**, the main active principle in mushrooms.

On the other hand, milling mushrooms can damage the long-chain polysaccharides and it doesn't eliminate chitin, therefore limiting the amount of available therapeutic components per capsule.

The hot water extraction process is fundamental for ensuring that all the mushroom's therapeutic components are released **intact, active and bioavailable**.



Maitake

- Immune stimulant
- Chemotherapy coadjuvant
- Anti-diabetic



Resilience Mushroom Blend

- Energy and stress resistance
- Enhancement of immune response
- Anti-ageing (antioxidant, cardiovascular health, neuroprotection)



Reishi

- Immune-modulating and anti-inflammatory (allergies)
- Anti-tumour
- Energy and stress resistance (neurasthenia)

Shiitake

- Cardiovascular system (cholesterol)
- Chemotherapy coadjuvant
- Immune system (viral infections, candida)



Cordyceps

- Energy and resistance
- Sexual function and libido
- Respiratory health

Lion's Mane

- Neuroprotection (cognitive support)
- Gastritis (*H. pylori*) and gastric mucosa protector

