

Reishi SAP

Science-based immune and stress support

Reishi SAP is a hot water-extract from the medicinal reishi mushroom, also known by its scientific name *Ganoderma Lucidum*, which has been used in Japan for over 2000 years. This mushroom has been used as an herbal medicine to help increase energy and resistance to stress. The reishi mushroom has also been used as a liver tonic, as well as to support immune function. Reishi has properties that help support a healthy inflammatory response, and possesses antioxidant properties.

ACTIVE INGREDIENTS

Each vegetable capsule contains:

Reishi (*Ganoderma lucidum*) 8:1 extract,
40% polysaccharides providing 30% β -glucans. 500 mg

Note: Polysaccharide and β -glucan content may vary from lot to lot.

This product is non-GMO.

Contains no: Gluten, soy, wheat, corn, eggs, dairy, yeast, citrus, preservatives, artificial flavour or colour, starch, or sugar.

Reishi SAP contains 60 capsules or 120 capsules per bottle.

DIRECTIONS FOR USE

Adults: Take 1 capsule daily or as directed by your healthcare practitioner. To avoid digestive upset, take with food/meal. Immune support: Use for a minimum of 4 weeks to see beneficial effects.

INDICATIONS

Reishi SAP:

- Can be used to help support healthy immunomodulation.
- Can be used to reduce free radicals via its antioxidant potential.
- May help modulate a healthy inflammatory response.

SAFETY

Consult a healthcare practitioner prior to use if you suffer from an immune system disorder or if you are taking immunosuppressants. **For use beyond 3 months:** Dizziness, irritated skin, nausea and diarrhea have been known to occur; in which case, discontinue use. Hypersensitivity/allergy can occur; in which case, discontinue use.

PURITY, CLEANLINESS, AND STABILITY

All ingredients listed for all **Reishi SAP** lot numbers have been tested by a third-party laboratory for identity, potency, and purity.



Scientific Advisory Panel (SAP):
adding nutraceutical research
to achieve optimum health



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Reishi (*Ganoderma lucidum*) is a mushroom that has a long history of use in Eastern herbal medicine and is thought to increase vitality, immune function, and life expectancy.^[1] Reishi is known as “lingzhi” in China, and has been named “the King of Herbs” there. Reishi contains several active constituents including polysaccharides, dietary fibres, oligosaccharides, peptides, phenols, minerals (zinc, copper, iodine, and iron), as well as some amino acids.^[2] This mushroom is particularly known for its immune-modulating effects, which have been demonstrated by an increase in T-lymphocytes.^[2]

IMMUNOMODULATION

In an animal study, researchers investigated the effect of supplementing *Ganoderma lucidum* polysaccharides (GLP) for four weeks on immune response in mice undergoing long-term high-intensity exercise.^[3] In mice receiving medium or high doses of GLP, significant increases were observed in peripheral white blood cells, absolute neutrophil count, macrophage phagocytic index, serum agglutination valence, and the number of plaque-forming cells. In the mice not receiving GLP, significant reductions were seen in the above-mentioned markers. Researchers concluded that supplementing mice with GLP leads to an improvement in both specific and nonspecific immune responses, with the high-dose having the greatest improvement.^[3]

In another study exploring the effects of GLP on immune function, researchers took two different water-soluble fractions; peptidoglycans and oligosaccharides.^[4] Both fractions were able to stimulate CD69 in human peripheral-blood mononuclear cells and displayed distinct immune-modulating properties. The peptidoglycans activated T_H1 cytokines, IL-2, IL-12, TNF- α , and IFN- γ in the mononuclear cells. The oligosaccharides activated and led to proliferation of NK and T cells, as well as having the ability to induce monocytes.^[4]

DIABETES

The mechanism associated with *Ganoderma lucidum*'s hypoglycemic effect in type-2 diabetes has been investigated. Researchers isolated a specific proteoglycan (FYGL) from *Ganoderma lucidum* to determine its antihyperglycemic effect when fed to db/db mice over an eight-week period.^[5] FYGL ingestion led to reduced glycated hemoglobin levels as well as an increase in insulin and C-peptide levels. There was also a decrease in glucagon, demonstrating a potential for improved function of pancreatic islet cells. FYGL feeding also appears to have antioxidant potential as measured by a decrease in the hydrogen peroxide concentration in the high-dose FYGL group. Researchers concluded that FYGL is an effective antidiabetic agent due to its ability to decrease hepatic glucose output, enhance insulin sensitivity, as well as increase the level of adipocyte and skeletal muscle glucose disposal in diabetic animals. In addition, due to its beneficial effects on oxidative stress, FYGL may be helpful for preventing or delaying complications associated with diabetes.

In a human clinical trial, researchers assessed the effect of *Ganoderma lucidum* feeding in patients with borderline elevations of blood pressure and/or cholesterol using a 12-week, controlled, cross-over design.^[6] Researchers tested body weight, blood pressure, metabolic parameters, urine catecholamines, and cortisol, as well as antioxidant status after periods of consumption of reishi or placebo. Reishi was found to be well-tolerated by study participants. No notable changes in blood pressure or BMI were observed with consumption of reishi compared to placebo; however, plasma insulin was lower and HDL-cholesterol

levels were higher in the reishi group. Researchers concluded that reishi might have a mild antidiabetic effect and potentially improve dyslipidemia; however, further studies in patients with hyperglycemia are needed.

NEUROINFLAMMATION IN PARKINSON'S DISEASE

One of the mechanisms suggested in the pathogenesis of Parkinson's disease (PD) is neuroinflammation.^[7] Current evidence supports that microglia may have a role in the progression of neurodegeneration in PD. Researchers have explored if *Ganoderma lucidum* use could modulate the inflammatory process and have a neuroprotective effect.^[7] In studying this system, researchers used cultured microglia or MES23.5 cells alone and together, dosing them with either lipopolysaccharide as a control, *Ganoderma lucidum* extracts, or MES23.5 cell-membrane fragments. Analysis included was microglia activation, microglia-derived harmful factors, and dopamine uptake of MES23.5 cells. *Ganoderma lucidum* extracts were found to prevent the production of microglia-derived cytotoxic factors and proinflammatory markers including nitric oxide, tumour necrosis factor, and interleukin-1 β . These researchers concluded that *Ganoderma lucidum* may have a beneficial effect on PD via its ability to regulate the inflammatory process.

STRESS AND ANXIETY

Researchers have evaluated anxiolytic and antidepressant properties of *Ganoderma lucidum* in rats.^[8] In this study, rats were given either 0.3 or 1 g/kg of *Ganoderma lucidum* 1 hour before performing stressful activities including swimming; open-field, elevated plus-maze; contextual fear-conditioning; and head-twitch tests. The study found that the treatment group given the 1 g/kg dose had antidepressant-like effects in the forced swimming test, attenuated freezing behavior in the contextual fear-conditioning test, as well as a decrease in the number of head twitches induced by (\pm)-1-(2,5-dimethoxy-4-iodophenyl)-2-aminopropane hydrochloride (DOI).^[8] No significant changes were observed in locomotion or anxiety-like behavior in the open-field or elevated plus-maze tests. These researchers concluded that *Ganoderma lucidum* possesses anxiolytic-like effects in memory-dependent and/or stress-induced anxiety in rats, as well as having antidepressant-like potential likely due to its antagonism of 5-HT_{2A} receptors.

REFERENCES

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