Reishi - Ancient Herb For Modern Times

Introducing the Reishi Mushroom

Emerging from the very roots of Oriental Medicine, the Reishi mushroom is an herb of historic significance found endlessly depicted in Chinese art. In the Orient, few plants are so highly regarded and to this day Reishi is taken as a longevity herb to preserve youth and maintain health. The late Prof. Hiroshi Hikino, one of the world’s foremost authorities on the chemistry of Oriental plants, designated Reishi and Ginseng as the two most “important elixirs” of traditional Oriental medicine. Yet the scientific study of this mushroom in medicine has only occurred during the last 20 years. As Hikino explained, until recent cultivation methods were developed it was fairly scarce. Scientists have found that various uses of the mushroom in folk-medicine have some basis in fact, sometimes remarkably so. But before we look into their findings, just what is the Reishi mushroom?

A Mushroom of Many Names:

- Ten-thousand Year Mushroom
- Herb of Spiritual Potency
- Ambrosia Polyphoto
- Good Omen Plant
- Miraculous Chi
- Auspicious Herbs
- Holy Mushroom
- Chih Ling chi
- Ling chih
- Ling zhi
- Chi chi
- Reishi

The Japanese name “Reishi” (Ray-she’ or ‘Ree-she’) is ascribed by Japanese herbalists to the same mushroom (Ganoderma lucidum) that Chinese herbalists call “Ling zhi” (Ling-zee’), a name with profound meaning. Loosely translated, Ling zhi means spirit, spiritual or shaman’s tree fungus. Reishi is the Japanese name of “Ling zhi.” The character Ling (see back cover) is a composite of rain, shaman, and praying/or, but taken together has the meaning of “spiritual potency.”

Even by itself, chi came to be defined as “divine herbi” in the late 1800s, the character for this term often adorned the apothecary stores in Beijing. Here the mushroom was available as “ling chi,” described by European explorers as an orange-colored branched object of a wood- or coral-like structure.

Reishi are called shelf or bracket mushrooms because they often grow horizontally from the sides of trees, especially fallen deadwood. Otherwise, they can grow vertically from the middle of a stump or buried deadwood, in which case they develop a stem and cap in the more familiar ‘mushroom’ shape. The full-grown or mature Reishi is often seen in photos as a shiny, as if lacquered object, usually burnt orange to dark red with a long or short stem and a furrowed, lotus pad-shaped cap.

Chih, an Elixir of Long-life

In tracing the origins of Reishi as a medicinal plant, particularly a divine one, we eventually arrive at the foot-worn doorstep of the alchemists, whose relentless pursuit of an elixir to prolong life, cure the ills of the body and confer immortality, spanned centuries of experiment. By the 3rd century or even earlier, the concept of an immortality elixir and the taking of medicines to extend life was an accepted idea that had grown to cult proportions.

A fungus named “chi” appears in the earliest records of alchemy in China. According to the alchemist Ko Hung, the Book of Immortals (Hsien Ching) clearly states that the chih fungus, although a ‘natural growth... may be cultivated by means of the five stones and five plants. The resulting plant will be exactly like that found in nature in the power of giving long life when eaten.8 How the alchemists accomplished this cultivation either remains a secret or the technology was lost long ago. The Emperor Shin Huang Ti (259-210 B.C.) made every effort to obtain such an elixir. Perhaps best known for his Great Wall, his exploits to capture an “herb of deathlessness” are no less renowned.

Once he dispatched an entire fleet of ships manned by 3,000 young people, scores of laborers, and a Taoist priest named Hsu Fu as admiral, to search for the plant on islands in the Eastern Sea. Whether they ever found the herb is doubtful. One account has it that they never returned. In another, Hsu Fu does return, although empty-handed and with a fabulous story of having reached one of the fairy isles where palaces built of “chih” brightly lit the sky and where copper-colored servants with the appearance of dragons reside.

Yet this would not be the Emperor’s first attempt to secure the plant. He had sent more than one servant off into the mountains, the other location of the plant called “chih,” but obviously any description they had of it was hopelessly incomplete or cleverly disguised. Eventually, his servants insisted the very gods couldn’t easily locate it and suggested that he go to the mountains and see for himself.

Over 100 years later, the Emperor Wu sent ships east to search for the islands of the immortals and their chih plant. He too apparently failed. Wu finally succeeded when in 109 B.C. the fungus appeared in his palace, of all places. The Imperial records state that “a fungus of immortality sprang up! having nine stalks and leaves interconnected.

The Emperor was so pleased at the event that he commemorated the growth for all time with a poem.

Chih, which unfolds its beauties most marvellously. ’2
Half a century after the first chih sprang up at the palace, at a nearby hall “a golden fungus of immortality with nine stalks grew in a copper basin.”10 The golden color is typical of the earlier growth stages of the Reishi mushroom: only in maturity do they turn a full orange or blood red. Just as the first immortality fungus at the palace, this was an auspicious occasion marked with a commemorative verse ending, “Lonely life, thousands
The Great Pharmacopeia

The Reishi mushroom appears in the Pen Tsao Kang Mu or Great Pharmacopeia, compiled by Li Shih-chen in 1578. Li wrote that the various chih or medicinal tree fungi were “difficult to obtain.” From the instructions of the ancients, any successful “quest” for these mushrooms depended upon a considerable amount of ritual. The mushrooms had to be collected in the forest on foot, never on horseback; a knife made of bone, not metal, was required to cut and then quarter the mushroom; and sex had to be abstained from. Finally, in order to ensure success, the whole affair had to be kept secret.18

Reishi has been employed as a major tonic. In the Pharmacopoeia of the Year 1263, it is noted that the mushroom is a “health tonic and protects against disorders.” It is used for various conditions, including “improving blood circulation, treating heart disease, and improving the health of the liver and kidneys.” In later periods, Reishi was used for treating “heart disease,” “nervousness,” and “impaired vision.” In the 18th century, it was recommended for treating “nervous disorders,” “heart disease,” and “nervous tension.”

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Reishi is known for its ability to enhance the immune system, and it is often recommended for treating various conditions, including “heart disease,” “nervous disorders,” “impaired vision,” and “nervous tension.” In the 18th century, it was recommended for treating “nervous disorders,” “heart disease,” and “nervous tension.”

The effects of Reishi on the immune system are mediated through the activation of macrophages and natural killer cells. Macrophages are immune cells that phagocytose and destroy foreign substances, and natural killer cells are lymphocytes that can kill infected or transformed cells. Reishi contains polysaccharides and triterpenoids that stimulate the production of these immune cells. The mushroom also contains a variety of antioxidants, such as ergothioneine, which can help to protect the immune system from oxidative stress.

Reishi has been shown to enhance the immune system and to improve various aspects of health, including heart function, liver function, and cognitive performance. It is often recommended for use in combination with other herbs, such as ginseng, for optimal health benefits.

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Reishi in Cancer Research

Many are the accounts of cancer patients who tried Reishi and found their cancers gone. Studies of Reishi in cancer research have been largely conducted in Japan, where Reishi was scientifically proven to hold against cancer treatments. This research has continued in Japan, Korea, and China.

Reishi and related mushrooms, called "polypores," have been traditionally regarded as helpful against cancer in Japan for hundreds of years. A recent account of this ancient use was reported by Dr. Fumio Mori, a renowned Japanese surgeon and a member of the Linus Pauling Institute of Science and Medicine, famous for its research on vitamin C.

In the Summer of 1986, a woman approached him for help in treating her lung cancer. It was a complicated case and she had been refused an operation by several hospitals. Hopelessly, she returned home where she found her husband had collected Reishi in the forests. He boiled the mushroom and gave it to her to drink as a tea.

While this was going on, she begged Dr. Morishige to do something for her cancer, regardless of its very advanced stage. From what was evident six months earlier, Morishige was surprised when he found no increase in the swelling. Then he looked at X-rays. Something wasn't right: her tumor showed but a trace on the photo. When she told him she had been drinking Reishi tea, Morishige operated with even greater curiosity. He was "astonished" to find only scar tissue, and although cancerous cells remained, they were now benign.

With that he began to study Reishi as a treatment for cases given up hopeless. 250 patients later, he had some very intriguing findings. Even more promising, he believes Reishi is an effective cancer preventative. Here are a few of his findings:

- Patients on large doses of Reishi extract (2-10 grams daily) developed diarrhea, but not when they took vitamin C in combination.
- Patients on Reishi showed fewer complications with therapy.
- Those with low levels of antibodies had their levels restored and those with high levels had them lowered. This was found with "immunoglobulin A," IgG, IgM, and IgG (immunoglobulins are specific types of antibodies.).
- Vitamin C (10 grams a day) seems to greatly increase the activity of Reishi within the system.
- Cancers of the lung, brain, breast, rectum, liver, pancreas and kidney are amenable with Reishi when surgery precedes and vitamin C (6-12 grams daily) is taken in combination with the extract.

While Dr. Morishige and colleagues in Japan continue to research the effects of Reishi combined with vitamin C, during a lecture he told the world basically how this combination works. The active constituents against cancer in Reishi are called "polysaccharides," which are basically huge sugars made up of many little sugar molecules chained together. The antitumor sugars in Reishi usually occur in the form known as "Beta-D-glucans," bound to aminos acids. These intricate sugars stimulate or modulate the immune system to produce a heightened response to foreign cells, whether bacteria, viruses, or tumor cells.

Polysaccharides from the Reishi mushroom and other types of folk-medicinal fungi are patented in Japan for use as immunopotentiators in the treatment of cancer. 56-59 They are usually combined with other types of therapies, such as radiation, surgery and chemotherapies, to increase the effectiveness, reduce the side-effects and accelerate recovery from disease. What Dr. Morishige found is that the various polysaccharides derived from medicinal mushrooms don't have the same degree of action against cancers in humans that they do in animals. But when vitamin C is taken in combination, the results are much better. The reason, he tells us, is that animals produce the same vitamin that we do and that seems to be making all the difference.

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Anti-Inflammatory Activity of Reishi

A Reishi mushroom syrup was made up and tested for its activity in controlling heart disease in 1973-1974. In over 2,000 chronic bronchitis patients, it was found effective, overall, in 60 to 91.6% of the cases. Following several months' treatment there was a general increase in the amount of immunoglobulin A (IgA) detected in their sput.20 GA is the main immunoglobulin found in the respiratory tract. A deficiency is linked to severe allergic reactions.

During the 1980s, Reishi's anti-inflammatory action became the subject of ongoing research in Japan. 64-66 Studies at the Dept. of Pharmaceutical Sciences at Kinki University found Reishi so active that in animals a water extract inhibited all four types of allergic reactions. This included positive effects against the more familiar subjects of asthma and contact dermatitis.

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In Japan, efforts to determine the active anti-allergic compounds in Reishi have been fairly fruitful. "Ganoderic acids" in Reishi named ganoderic acid A, ganoderic acid B, ganoderic acid D68 and ganoderic acid C1 are the most active of the bunch, having been shown at least partly if not largely responsible for the activity. Ganoderic acids B and D also lower high blood pressure.39 Most ganoderic acid C is found in the mushroom cap (3.4 mg per gram).68

Part of the anti-inflammatory action of Reishi may be attributable to a free radical scavenging effect. Both the polysaccharides70 from Reishi mushrooms and the mushroom extract itself have shown protection against toxic and lethal doses of radiation in animals, a sure demonstration of this action.

As many are now aware, free radical scavengers or "antioxidants" include vitamins C and E and certain amino acids, such as L-Cysteine. A great amount of literature is available explaining their benefits in retarding damage to the skin and other cells of the body, as well as their possible role as cancer inhibitors in our diet. After they discovered that Reishi improved the function of human red blood cells in transferring oxygen, scientists at the Beijing College of Traditional Chinese Medicine undertook a study of Reishi’s effect on scavenging free radicals in blood. What they found is that large doses significantly enhanced (by 50%) the free radical scavenging action of the blood against a particularly harmful type of free radical called the "hydroxyl." And the hydroxyl radical scavenging effect continued, even after the Reishi extract was absorbed and metabolized.71

**Healing the Liver**

Reishi is commonly prescribed in China for the treatment of chronic hepatitis.72 Reports tell of better results being achieved in acute hepatitis where liver function is less severely impaired. In treatments lasting 2 to 15 weeks, the overall rate of efficiency is 70.0 to 98.0%. In treating hepatitis, a syrup of Reishi is taken two times daily (20 ml), usually for 4 to 12 weeks.

In Japan, the underground part or mycelium of Reishi is reported effective in treating patients with liver failure. Taken during six months as a food supplement (50 grams in water three times a day), the effects were therapeutically significant.73 Using the mycelium, scientists in Tokyo and Osaka isolated two "strongly" anti-toxic substances for the liver. Once again, these were ganoderic acids; this time "R" and "K," as well as the less active ganoderic acid T.74

Other researchers in China and Japan have pursued this work.75-76 A Japanese team found a liver function stimulant with the name "ganodosterone" and determined that ganoderic acids R, S and T from the mycelium are liver function stimulants too.77

**Recent Applications of Ganoderma**

One Japanese patent specifies a freeze-dried Reishi product for external use in surgical incision. It includes at least four other medicinal mushrooms.78 We are reminded here of Li Shih-chen's recordings in which the mushroom was used to produce "a fine complexion."18 This may be due to polysaccharides79 of the "beta-glucan" type. Some are already in use in skin creams said to enhance the immunological function of the skin.79

Reishi is believed to be good for the hair80-83 and also figures in a number of beverages.84-86 There are several "tonics" from China in which the bottles contain a whole mushroom and a whole Ginseng root. In Japan, Reishi and culinary herbs are steeped in a mixture of fermented vinegar to prepare a "health drink."84 And in New York candies made from Reishi "essence" may still be found. Research in China continues with some new discoveries and better understandings of previous ones. No doubt we'll be hearing more about them soon. In the meantime, a sneak preview of the work with Reishi may be helpful.

Several researchers are currently using injections of Reishi extracts, sometimes in combination with Western drugs. Some connective tissue diseases, such as one (dermatomysitis) that causes muscle fibers to decay with inflammation of muscles, subcutaneous tissue and skin, are now treated in China using the mushroom extract. After 3 to 6 months’ treatment, a mushroom extract was effective in 96.4 of 55 patients, 34 of whom were treated with a combination of the extract injections and steroids from Western medicine. Another connective tissue disease is lupus erythematosus. Of 84 patients, the mushroom injections were effective in 82.1 after 12 weeks of treatment.87

At a national scientific conference on Reishi in Beijing in the fall of 1991, researchers presented some of their latest findings. Beijing Medical University scientists are studying polysaccharides in Reishi related to an "anti-aging" mechanism. Others have found an increased production of interferon to Reishi. A handful of the highlights from the conference follow:

- A water extract of Reishi clears free radicals.
- Reishi polysaccharides markedly inhibit the powerful "super oxide" free radical in red blood cells.
- Another clinical trial finds a significant lowering of high fat levels in the blood and a lowering of high blood pressure from Reishi extract.
- 196 medical athletes in China using a Reishi (88) and Ginseng (20) extract preparation had less fatigue and improved sleep during games at high altitude under cold conditions.
- A water extract of Reishi mixed with other medicinal mushroom extracts (Shiitake fruit body and Cordyceps mycelium) produces significant antitumor effects in animals and enhances macrophage activity.
- Reishi polysaccharides increase T-cells and the immunological function of body fluids.
- Clinical research proves that Reishi markedly increases the function of macrophages in the abdomen of people.
- Reishi polysaccharides promote protein synthesis in the liver and bone marrow.
- A traditional Chinese medical doctor explains that he uses the mushroom for uterine diseases and bronchitis. Against liver diseases such as cirrhosis, he believes the mushroom is the best medicinal plant available in Chinese medicine.88

Recent North American uses include some traditional ones and some innovative applications within the context of traditional Chinese medical diagnoses. Naturopaths are prescribing Reishi for symptomatic relief of arthritic and of menopausal anxiety. Reishi is also used in treating allergic asthma, hypertension, hypothyroidism, bronchitis, insomnia, general anxiety and stress, and cardiovascular problems. Finally, Reishi figures as the main ingredient in herbal formulas for immune dysfunction syndromes, such as Chronic Fatigue Syndrome, and some AIDS patients are using it too.90

For a more detailed view of the Reishi mushroom, see Reishi Mushroom: Herb of Spiritual Potency and Medical Wonder, by Terry Willard, Ph.D with research by Kenneth Jones (Sylvan Press, 1990).

**The Safety of Reishi**

A number of tests to find toxicity from the mushroom found none.20-91-92 Although few, there are some cases where minor reactions, such as a loose stool, dry mouth, slightly upset digestion and skin rash have occurred. Digestive upsets are easily eliminated by taking Reishi with meals instead of between them. The other reactions are eliminated by simply ceasing use of the mushroom for a week or less. A loose stool is commonly reported from taking over two grams of the extract a day. But when large doses of vitamin C (6-12 grams a day) were combined, a loose stool was avoided.54

**How Much Reishi?**

Traditionally, Chinese medical texts call for using 1.5 to 9 grams of dry mushroom per day. The mushrooms are simmered in water for 4 to 6 hours to make a decoction or tea. For a more powerful extract, the mushrooms can be simmered in an equal volume of water and alcohol, such as rice wine. The mushrooms should be discarded after they fail to impart any more color to the liquid.

Nearly all research on Reishi has been conducted with water or mushroom extracts. For serious problems, Dr. Morishige adjusted the extract dosage to anywhere from 2 to 10 grams per day. The amount of dry mushroom that goes into an extract can be as much as 15 times the amount of the final extract. Therefore, the 1.5 to 9 grams of dry mushroom prescribed in traditional texts 93-94 would approximate 150 to 900 mg of extract. For dosages required in specific illnesses one should consult an herbalist or a naturopathic physician.

**Active Constituents of Reishi**

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<th>ACTIVE COMPOUND</th>
<th>TYPE ACTION</th>
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<tr>
<td>Polysaccharides</td>
<td>Antitumor/Immunostimulatory</td>
<td>Fruit-Body 1-3 (Beta-D-glucan)</td>
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<tr>
<td>Polysaccharides</td>
<td>Antitumor/Immunostimulatory</td>
<td>Mycelium 1-4</td>
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<td>Triterpene</td>
<td>Cholesterol</td>
<td>Fruit-body 9. (synthesis inhibitor)</td>
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**References**

80. T. Miyamoto et al., in Chem. Abstr. 104: 74805d.
93. B. Liu and Y.-S. Bau, Fungi Pharmacopoeia (Sinica).) Kinoko, Oakland, California, 1980: 1
By this time (1934), Japanese herbalists were enlisting Reishi for an amazing array of problems; among them bronchitis, gastric ulcers, liver diseases, kidney inflammation, high blood pressure, insomnia and even poisoning. In China “Ling zhi” held a similar reputation among herbalists and to this day includes a variety of applications. Many centuries later, the potential of this ancient herb as a cardiotonic became apparent. Researchers in China watched in