

A Soothing Elixir: The Health Enhancing Qualities of a Unique Chinese Herbal Tea

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Abstract: This review explores the health benefits of a traditional Chinese herbal tea blend comprising rose, mulberry fruit, Poria cocos (Fu Ling), lily (Bai He) and jujube, integrating both historical uses in traditional Chinese medicine and contemporary scientific research. Each ingredient has been selected for its unique properties and potential health benefits, which are examined through the lens of modern scientific evidence. We combine findings from various scientific studies, including clinical trials and pharmacological research, to substantiate the health claims associated with each herbal ingredient. This review aims to provide a comprehensive overview of the potential health benefits of this herbal tea blend, emphasizing the importance of integrating traditional knowledge with scientific research in the pursuit of natural health solutions. While promising, the review also acknowledges the need for further scientific studies to fully understand the mechanisms and long-term effects of these herbal ingredients on human health.

Keywords: traditional Chinese medicine, herbal tea, rose, mulberry fruit, Poria cocos, lily, jujube

1. Introduction

Traditional Chinese medicine (TCM) occupies a pivotal position in Chinese culture and history. It has a deep foundation and a long history, which has provided the theoretical and practical basis for Chinese medical practice for thousands of years. TCM is not only a means of treating diseases, but also a philosophy of life, emphasizing the unity of nature and body and the balance of Yin and Yang, which are represented in TCM as stabilizing and inhibiting factors and active and promoting factors respectively. In the realm of TCM, Chinese patent medicine is highly regarded for its unique efficacy and wide range of indications, ranging from common cold and cough to more complex chronic diseases such as diabetes and hypertension^[1, 2, 3].

Herbal tea, as a kind of Chinese herbal medicine, has always been considered as a good product for relieving inflammation, inhibiting bacteria, regulating blood circulation, and improving skin quality. It is not only a drink, but also an herbal therapy that helps to regulate the body's internal balance and strengthen its constitution. A fascinating herbal tea that has captured our attention combines the delicate flavors and potent benefits of rose, mulberry fruit, Poria cocos (Fu Ling), lily (Bai He) and jujube. It not only has a unique taste, but also has multiple health benefits. The formula of this herbal tea is carefully selected, and each ingredient has its own specific health effects.

In modern society, there is an increasing focus on health and natural remedies. With its natural ingredients and unique efficacy, this herbal tea has attracted many people who pursue a natural and healthy lifestyle. Especially among women, this tea has gained popularity due to its beauty, anti-aging and menstruation benefits. With the development of modern science and technology, more and more studies have begun to pay attention to the effects of Chinese herbal medicine on health, attempting to analyze the effectiveness of these traditional treatments from a scientific perspective.

This article aims to explore the health effects of this herbal tea from both scientific and traditional perspectives. Firstly, from the perspective of traditional Chinese medicine, the efficacy of each component and how they interact to exert therapeutic effects together are analyzed. Second, it explores how modern scientific research supports these traditional views, including clinical trials and laboratory findings to verify the health benefits of these herbal ingredients.

In addition, this article will discuss the application and challenges of TCM in modern society, and how traditional medicine can be integrated with modern medical technology to promote people's health

and well-being. With the development of globalization, the concepts and treatment methods of traditional Chinese medicine are gradually being accepted and adopted around the world, which is of great significance for promoting healthy lifestyles and improving global health.

Finally, this article will discuss the future development of Chinese herbal medicine in the field of global health and medicine, especially how to further tap the potential of Chinese herbal medicine through scientific research, and how to better use these natural resources to solve the health problems faced by modern people under the precondition of ensuring efficacy and safety. Through a thorough analysis, this article aims to provide readers with a comprehensive perspective on this herbal tea and its application in the health field, and to demonstrate the value and potential of TCM as a traditional and natural healing method in the modern society.

2. Ingredients and their biological activity

2.1 Rose

The cultivation of roses boasts a rich historical background. They are commonly found in gardens and extensively utilized in the manufacturing of food, health products, and beauty products. The Pharmacopoeia of the People's Republic of China mentions that rose flowers can regulate energy, relieve depression, harmonize blood circulation, and relieve pain^[4]. They are used for treating liver and stomach pain, lack of appetite, vomiting, menstrual disorders, and physical injuries in TCM.

Modern pharmacological research shows that rose flowers contain a variety of volatile oils, phenolic acids, flavonoids, anthocyanins, and are rich in vitamins and minerals, which are important for their fragrance and pharmacological activity^[5, 6].

Rich in phytochemicals, especially carotenoids, flavonoids and anthocyanins, roses have good antioxidant properties, which can help remove free radicals in the body, delay cell aging, and prevent a variety of chronic diseases related to oxidative stress, such as cardiovascular disease and diabetes. The antioxidants in the rose can also help to improve skin health, promote the metabolism of skin cells, with whitening, anti-wrinkle and other cosmetic effects^[7, 8, 9].

In addition to antioxidant effects, rose also has good anti-inflammatory and antibacterial properties. Studies have shown that rose extract can effectively inhibit the growth of some bacteria and fungi that cause inflammation and infection, help to reduce the inflammatory response, and have certain help for the treatment of sore throat and oral ulcers. In addition, these properties of rose also make it one of the natural choices for the treatment of skin diseases such as eczema and dermatitis^[5, 6].

Roses are also used to regulate mood and relieve psychological stress. The scent of roses affects emotional centers in the brain, helping to relax nerves and reduce anxiety and depression. This effect of affecting mood through smell has made roses one of the commonly used elements in aromatherapy^[10].

In the field of women's health, roses also show their unique value. It can regulate the female endocrine system, relieve menstrual discomfort, and has certain help for the treatment of menstrual disorders, dysmenorrhea and other gynecological diseases^[5, 6].

2.2 Mulberry fruit

Mulberry, as a nutritious fruit with a long history, is not only loved for its unique taste and various ways of eating, but also valued in traditional medicine and modern health science because of its rich nutrients and extensive pharmacological effects. It has the effects of nourishing blood, generating fluids and moistening dryness, and is commonly employed to treat liver and kidney diseases in TCM^[4, 11, 12].

The nutritional value of mulberries is exceptionally high, as they are abundant in essential minerals and vitamins such as vitamin C, vitamin K, iron, calcium, and potassium. These nutrients play a crucial role in maintaining human health and preventing various diseases. Vitamin C acts as a potent antioxidant that enhances immune function, facilitates wound healing, and exerts positive effects on cardiovascular health and skin integrity. With its rich iron content, mulberries contribute to the prevention of anemia. Additionally, the presence of calcium and potassium is vital for promoting bone health and ensuring proper heart function.

The bioactive compounds of mulberry include flavonoids, anthocyanins, polysaccharides and phenolic acids, which were considered to have hepatoprotective, antioxidant, anti-inflammatory,

anticancer, and antihypertensive effects [13, 14]. These antioxidants possess the capability to scavenge free radicals within the body and mitigate oxidative stress, thereby aiding in the prevention of various chronic ailments such as cardiovascular disease, diabetes, and specific types of cancer. Furthermore, these compounds exhibit inhibitory effects on inflammation and alleviate symptoms associated with inflammatory diseases.

Mulberry fruit also showed a significant effect on the regulation of blood sugar levels due to their antioxidant ability. Research indicates that mulberry extract can significantly improve blood glucose levels, blood lipid indicators (triglycerides, total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol), lipid peroxidation levels (malondialdehyde), and serum antioxidant status (glutathione peroxidase, superoxide dismutase, and total antioxidant capacity) in type 2 diabetic mice, and ameliorate insulin resistance in HepG2 cells induced by palmitic acid through modulation of the PI3K/AKT pathway [15, 16]. These studies suggest that mulberry could be a supportive natural therapy for managing diabetes.

Additionally, mulberry fruits contain compounds that may support cardiovascular health by reducing blood pressure and cholesterol levels. A quantitative meta-analysis of 12 eligible RCTs showed that consuming mulberry has an improving effect on various cardiovascular risk factors [17]. Due to its outstanding antioxidant capacity, mulberry can also improve non-alcoholic fatty liver disease in rats by inhibiting mitochondrial oxidative stress [18].

2.3 *Poria cocos (Fu Ling)*

Poria cocos, a fungus that thrives on the roots of pine trees, is highly regarded in Traditional Chinese Medicine (TCM) for its therapeutic benefits, particularly its diuretic and tonic properties. Its ability to enhance sleep quality is attributed to its sedative effects, making it a valuable herb in TCM [19]. The sclerotium of *Poria cocos* is rich in bioactive compounds, predominantly polysaccharides and triterpenoids. Remarkably, polysaccharides constitute 70%-90% of the sclerotium's mass, underscoring their significance in the herb's medicinal profile [20, 21].

Recent scientific endeavors have shed light on the extensive biological activities of *Poria cocos* polysaccharides, showcasing their potential in various health applications. These polysaccharides have been identified to possess antioxidant properties, contributing to the body's defense against oxidative stress and cellular damage [22]. Furthermore, *Poria cocos* polysaccharides exhibit anticancer properties, offering a promising avenue for cancer prevention and therapy [23]. They also protect the liver, safeguarding it against various toxins and diseases, and regulate the intestinal flora, thereby supporting digestive health and the maintenance of a balanced gut microbiome [24, 25].

Polysaccharides isolated from *Poria cocos* using water extraction and alcohol precipitation methods can promote the development of thymus and spleen immune organs, increase the blood levels of IgG, IgA, IgM, and CD3+ CD4+ T cells, increase the villus height/crypt depth ratio, and improve intestinal barrier function disorder [26]. These findings indicate that *Poria cocos* has a broad-spectrum immune-enhancing effect and can significantly improve the state of immune function deficiency.

2.4 *Lily (Bai He)*

In TCM, the lily, or Bai He, which refers to the dried fleshy scales of plants from the Liliaceae family, is celebrated for its delicate beauty, and its capacity to offer protection and healing to the lungs. It's acclaimed for its ability to calm the mind, cease coughs, and clear phlegm, embodying a holistic approach to healing that addresses both physical and mental health concerns [4].

Lily's efficacy in moistening the lungs and alleviating coughs is attributed to its ability to increase the secretion of respiratory mucus. This mechanism is vital for its roles in stopping coughs, removing phlegm, and easing asthma symptoms, thereby promoting respiratory health [27, 28]. Beyond its respiratory benefits, lily is also sought after for its calming effects, offering relief from anxiety and restlessness. This tranquilizing effect makes it a valuable resource for those seeking mental and emotional equilibrium [29].

The antidepressant properties of lily saponins mark another frontier of its medicinal value. Studies have shown that these saponins can ameliorate the imbalance of monoamine neurotransmitters in the brains of rat models with depression, notably by increasing the levels of serotonin and dopamine [29]. This suggests that lily could play a crucial role in managing depression by modulating key neurotransmitters associated with mood regulation.

In addition to its mood-regulating and respiratory benefits, recent research has unveiled lily's potential antioxidant properties. These properties suggest that it can play a protective role against cellular damage, thereby supporting overall respiratory health and contributing to the body's defense against various diseases [27, 28].

2.5 Jujube

The jujube, also known as the red date, is the mature fruit of plants belonging to the Rhamnaceae family. It not only contains an abundance of essential nutrients but also harbors a diverse array of bioactive compounds such as jujube polysaccharides, phenols, saponins, cyclic nucleotides, alkaloids, and essential oils. These components exhibit immunomodulatory properties while exerting antioxidant, anxiolytic, anti-inflammatory effects. Furthermore, jujube contributes to improving gastrointestinal health and safeguarding liver function. The bioactive substances of jujube can also slow down the occurrence and development of some cancers by inducing cell apoptosis, inhibiting related signaling pathways, and regulating intestinal microorganisms [30].

3. Health benefits

3.1 Beauty care

With advancing age, the integrity of our skin is compromised not only by endogenous aging processes but also by exogenous environmental factors, leading to wrinkles, loss of elasticity, and abnormal pigmentation. The complex process of skin aging involves oxidative stress induced by reactive oxygen species (ROS), which can damage lipids, proteins, nucleic acids and organelles causing cell senescence - a core mechanism mediating skin aging [31].

Flavonoids, carotenoids, anthocyanins, phenolic acids and other phytochemicals contained in rose, mulberry and other components can resist oxidative stress, reduce cell damage, protect the skin from aging and environmental damage [5, 6, 13]. A clinical trial has also proved that rose extract has effective ingredients for skin whitening and anti-wrinkle [32]. In addition, a large number of vitamin C can also promote the production of collagen, enhance skin elasticity, and reduce the appearance of wrinkles [5, 6]. Moreover, its anti-inflammatory properties contribute to the mitigation of skin irritation and pigmentation, as well as the harmonization of skin tone. Consequently, it serves as a natural remedy for achieving radiant complexion.

3.2 Improving cardiovascular health

Flavonoids and other phytochemicals contained in mulberry and mulberry polysaccharide can effectively regulate blood lipids and have a certain protective effect on the cardiovascular and cerebrovascular system [33]. They can improve the antioxidant status of the blood and liver and reduce lipid peroxidation. Mulberry polysaccharide significantly inhibited the content of low-density lipoprotein-C (LDL-C), reduced triglyceride and total cholesterol in serum and liver of high-fat diet rats, reduced atherosclerosis index, and increased serum high-density lipoprotein-C (HDL-C) levels [13]. Therefore, this herbal tea can help lower blood pressure, lower cholesterol levels and improve arterial health, thereby reducing the risk of cardiovascular disease.

Antioxidants in other components can also help protect the heart by preventing oxidative stress and improving blood circulation [5, 6, 21, 23]. This helps maintain healthy blood pressure levels and prevents the formation of blood clots.

3.3 Anti-tumor

The rose and mulberry contain various flavonoids, including quercetin and anthocyanins, which are believed to possess anti-cancer activity by inducing apoptosis in cancer cells and inhibiting the growth of different tumor types. In vivo and in vitro experiments have demonstrated their significant tumor inhibition effect [34, 35].

The *Poria cocos* polysaccharides have demonstrated the ability to activate effector immune cells, including macrophages, lymphocytes, and natural killer (NK) cells [20]. Moreover, they stimulate the innate immune system by accelerating host defense mechanisms, enhance tumor immunity, elevate cytokine levels, and induce the expression of apoptosis-related genes Bcl-2 and Bax [24]. Consequently,

these polysaccharides directly facilitate tumor cell apoptosis to exert their anti-tumor activity.

3.4 Digestive Health Enhancement

Traditional Chinese medicine has long recognized the importance of digestive health in overall well-being. The ingredients in this herbal tea, particularly jujube and Poria cocos, are known for their beneficial effects on the gastrointestinal system. Jujube is revered for its ability to soothe the stomach, enhance appetite, and promote healthy bowel movements, thereby preventing constipation. Scientific studies have also highlighted the role of jujube in protecting the intestinal barrier, regulating gut microbiota, and reducing inflammation in the digestive tract, making it a valuable ally in maintaining digestive health^[30]. Poria cocos, with its rich polysaccharide content, not only strengthens the spleen but also aids in the elimination of dampness within the digestive system, thereby enhancing nutrient absorption and preventing digestive disorders^[25, 26].

3.5 Mental and Emotional Well-being

In addition to its physical health benefits, this herbal tea blend exhibits significant potential in supporting mental and emotional well-being. The calming effects of lily and the mood-regulating properties of rose contribute to a reduction in stress, anxiety, and depressive symptoms. Clinical trials have shown that the aroma of rose essential oil can significantly reduce anxiety levels in humans, illustrating the impact of olfactory stimuli on emotional health^[10, 29].

Moreover, the adaptogenic qualities of some ingredients, such as jujube, help in modulating the body's response to stress, thereby improving resilience to psychological stressors^[30]. This holistic approach to addressing both mental and emotional health aligns with the TCM principle of harmonizing the mind and body, highlighting the tea's role in promoting a sense of calm and emotional balance.

4. Discussion

This review has illuminated the extensive health benefits of a unique Chinese herbal tea blend through the lens of both traditional Chinese medicine and modern scientific research. By analyzing the individual and synergistic effects of each component, we have uncovered a multifaceted health elixir that addresses a wide spectrum of health concerns—from skin health and cardiovascular protection to digestive wellness and mental well-being.

The integration of traditional knowledge with scientific evidence underscores the tea's potential as a natural, holistic remedy, reinforcing the relevance of TCM principles in contemporary health and wellness contexts. However, it's imperative to acknowledge the limitations of existing studies and the need for further rigorous research to elucidate the mechanisms underlying these benefits and to validate the clinical efficacy of the tea blend in diverse populations.

5. Conclusion

In conclusion, the exploration of the health-enhancing qualities of this Chinese herbal tea blend reveals a compelling narrative of traditional wisdom enriched by scientific validation. Offering more than just sensory pleasure, this tea encapsulates a holistic approach to health and wellness, promising benefits that span physical, digestive, mental, and emotional domains. As we continue to seek natural, integrative solutions for health and well-being, this tea presents itself as a testament to the enduring value of traditional Chinese medicine, inviting further investigation and appreciation in the global health landscape. Ensuring the quality and purity of the ingredients remains paramount, as does a cautious approach to integrating this tea into one's health regimen, particularly for individuals with specific health conditions or those on medication. Ultimately, this review invites a broader acceptance and exploration of traditional herbal remedies, emphasizing the importance of bridging traditional practices with modern health initiatives for a holistic approach to well-being.

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