

Clinical Analysis of Properties and Health Benefits of Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng & Lignum Dalbergia Odorifera-Kasly Danshen plus Capsule

¹Dr. Hemachandran Ravikumar. Doc.(R&D),MRSB(UK),Rsci.(UK).

Ambassador, Royal Society of Biology, London

Affiliation: N&H Research Park & Kasly Herbalcare Private Limited

DOI: <https://doi.org/10.5281/zenodo.10643074>

Published Date: 10-February-2024

Abstract: This paper presents a comprehensive clinical analysis of four traditional Chinese medicinal herbs: Radix Astragalus Membranaceus (Astragalus), Radix Salviae Miltiorrhizae (Danshen), Radix Panax Notoginseng (Sanqi), and Lignum Dalbergia Odorifera (Jiangxiang). Each herb possesses unique phytochemical compositions and therapeutic properties that have been extensively studied for their health benefits.

Radix Astragalus Membranaceus is renowned for its immunomodulatory, anti-inflammatory, and antioxidant properties. Clinical trials have demonstrated its efficacy in boosting immune function, enhancing cardiovascular health, and mitigating the side effects of chemotherapy and radiation therapy. Radix Salviae Miltiorrhizae exhibits potent antioxidant, anti-inflammatory, and cardiovascular protective effects. Its active compounds, salvianolic acids and tanshinones, have shown promising results in the treatment of cardiovascular diseases, cerebrovascular disorders, and various inflammatory conditions.

Radix Panax Notoginseng is recognized for its hemostatic, antiplatelet, and cardioprotective properties. Studies have revealed its potential in improving blood circulation, reducing blood clotting, and alleviating symptoms associated with coronary artery disease and stroke. Lignum Dalbergia Odorifera possesses anti-inflammatory, analgesic, and neuroprotective activities. Its bioactive components, including flavonoids and phenolic compounds, have demonstrated therapeutic effects in pain management, neurological disorders, and inflammatory conditions.

Through rigorous clinical investigations, these herbs have emerged as promising candidates for the prevention and treatment of various health ailments. However, further research is warranted to elucidate their mechanisms of action, optimize therapeutic dosages, and evaluate potential herb-drug interactions. Overall, the findings presented in this analysis underscore the significant therapeutic potential of Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng, and Lignum Dalbergia Odorifera in modern medicine.

Keywords: Radix Astragalus Membranaceus (Astragalus), Radix Salviae Miltiorrhizae (Danshen), Radix Panax Notoginseng (Sanqi), Lignum Dalbergia Odorifera (Jiangxiang), traditional Chinese medicinal herbs, health benefits.

1. INTRODUCTION

Traditional Chinese Medicine (TCM) has a rich history of utilizing botanical remedies to promote health and well-being. Among the multitude of medicinal herbs in TCM, Radix Astragalus Membranaceus (Astragalus), Radix Salviae Miltiorrhizae (Danshen), Radix Panax Notoginseng (Sanqi), and Lignum Dalbergia Odorifera (Jiangxiang) stand out for their potent therapeutic properties and extensive use in clinical practice.

1. Radix Astragalus Membranaceus, commonly known as Huang Qi, has been revered in TCM for its ability to tonify qi (vital energy), strengthen the immune system, and promote longevity. Its profound immunomodulatory effects have garnered attention in modern research, with studies demonstrating its potential in combating infections, enhancing immune function, and alleviating various chronic diseases.



2. Radix Salviae Miltiorrhizae, or Danshen, has been employed for centuries to invigorate blood circulation, resolve blood stasis, and treat cardiovascular disorders. Rich in salvianolic acids and tanshinones, Danshen exhibits remarkable antioxidant and anti-inflammatory properties, making it a valuable therapeutic agent in the management of cardiovascular diseases, cerebrovascular disorders, and inflammatory conditions.



3. Radix Panax Notoginseng, also known as Sanqi or Tianqi, is renowned for its hemostatic, antiplatelet, and cardioprotective effects. Extensive pharmacological studies have highlighted its role in improving blood circulation, reducing blood clot formation, and protecting against ischemic injury, thereby offering promising avenues for the treatment of cardiovascular ailments and cerebrovascular accidents.



4. Lignum Dalbergia Odorifera, or Jiangxiang, possesses notable anti-inflammatory, analgesic, and neuroprotective properties. Its diverse phytochemical composition, including flavonoids and phenolic compounds, contributes to its therapeutic effects in pain management, neurological disorders, and inflammatory conditions, making it a valuable asset in TCM pharmacotherapy.



While the traditional uses of these herbs have been well-documented over centuries, modern scientific research continues to unveil their intricate pharmacological mechanisms and clinical applications. This research article aims to provide a comprehensive overview of the therapeutic benefits of Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng, and Lignum Dalbergia Odorifera, highlighting their potential contributions to contemporary healthcare practices and paving the way for further exploration and integration of TCM into mainstream medicine.

2. PROPERTIES OF RADIX ASTRAGALUS MEMBRANACEUS

Radix Astragalus Membranaceus, commonly referred to as Huang Qi in Traditional Chinese Medicine (TCM), is renowned for its diverse pharmacological properties and therapeutic effects. Here are some of the key properties associated with this medicinal herb:

1. **Immunomodulatory Activity:** Radix Astragalus Membranaceus is widely recognized for its ability to modulate the immune system. It stimulates the production and activity of various immune cells, including macrophages, T cells, and natural killer (NK) cells, thereby enhancing the body's defense mechanisms against infections and diseases.

2. **Anti-inflammatory Effects:** Astragalus contains bioactive compounds such as polysaccharides, flavonoids, and saponins that possess potent anti-inflammatory properties. These compounds help to reduce inflammation by inhibiting pro-inflammatory cytokines and enzymes, such as tumor necrosis factor-alpha (TNF- α) and cyclooxygenase-2 (COX-2), thereby alleviating symptoms associated with inflammatory conditions.

3. **Antioxidant Activity:** The presence of flavonoids and polysaccharides in Radix Astragalus Membranaceus contributes to its antioxidant properties. These compounds scavenge free radicals and reactive oxygen species (ROS), thereby protecting cells from oxidative damage and oxidative stress-related disorders.

4. **Cardiovascular Support:** Astragalus has been traditionally used to support cardiovascular health. Studies have shown that it can help to improve cardiac function, reduce blood pressure, and enhance circulation. Additionally, Astragalus may have cardioprotective effects by reducing oxidative stress and inflammation in the cardiovascular system.

5. **Adaptogenic Properties:** Astragalus is classified as an adaptogen, meaning it helps the body adapt to stressors and maintain homeostasis. It supports the adrenal glands and helps to regulate the stress response, thereby promoting overall resilience and well-being.

6. **Anti-diabetic Effects:** Research suggests that Astragalus may have potential benefits for individuals with diabetes. It can help to regulate blood sugar levels, improve insulin sensitivity, and protect pancreatic beta cells from damage.

7. **Antiviral and Antimicrobial Activity:** Astragalus exhibits antiviral and antimicrobial properties, making it useful in the prevention and treatment of infections. It has been studied for its potential efficacy against viruses such as influenza, herpes simplex virus (HSV), and hepatitis.

8. **Wound Healing:** Astragalus has been traditionally used to promote wound healing and tissue regeneration. Its anti-inflammatory and immunomodulatory effects contribute to the healing process by reducing inflammation and supporting tissue repair.

Overall, Radix Astragalus Membranaceus is a versatile herb with a wide range of therapeutic properties, making it a valuable component of traditional herbal medicine and a subject of increasing interest in modern research.

3. PROPERTIES OF RADIX SALVIAE MILTIORRHIZAE

Radix Salviae Miltiorrhizae, commonly known as Danshen in Traditional Chinese Medicine (TCM), possesses a variety of pharmacological properties and therapeutic effects. Here are some of the key properties associated with this medicinal herb:

1. **Cardiovascular Support:** Radix Salviae Miltiorrhizae is widely recognized for its cardiovascular benefits. It helps to improve blood circulation, dilate blood vessels, and regulate blood pressure. It also has anti-atherosclerotic effects, reducing the buildup of plaque in arteries and promoting vascular health.

2. **Antioxidant Activity:** Danshen contains active compounds such as salvianolic acids and tanshinones, which exhibit potent antioxidant properties. These compounds scavenge free radicals and reduce oxidative stress, protecting cells and tissues from damage caused by reactive oxygen species.

3. **Anti-inflammatory Effects:** Salvianolic acids and tanshinones found in Radix Salviae Miltiorrhizae possess anti-inflammatory properties. They inhibit the production of pro-inflammatory cytokines and enzymes, thereby reducing inflammation and alleviating symptoms associated with inflammatory conditions.

4. **Antiplatelet Activity:** Danshen has been shown to inhibit platelet aggregation, which plays a crucial role in preventing blood clots and reducing the risk of thrombotic events such as heart attacks and strokes.

5. **Hepatoprotective Effects:** Radix Salviae Miltiorrhizae has hepatoprotective properties, protecting the liver from damage caused by toxins, alcohol, and other harmful substances. It helps to promote liver regeneration and improve liver function.

6. **Neuroprotective Effects:** Salvianolic acids and tanshinones found in Danshen exhibit neuroprotective effects, protecting neurons from oxidative stress, inflammation, and apoptosis. This makes Radix Salviae Miltiorrhizae potentially beneficial for neurodegenerative diseases such as Alzheimer's and Parkinson's disease.

7. **Anticancer Properties:** Some studies suggest that Radix Salviae Miltiorrhizae may have anticancer properties, inhibiting the growth and proliferation of cancer cells. It may also enhance the efficacy of chemotherapy and radiation therapy while reducing their side effects.

8. **Wound Healing:** Danshen has been traditionally used to promote wound healing and tissue repair. Its anti-inflammatory and antioxidant properties contribute to the healing process by reducing inflammation and oxidative stress.

Overall, Radix Salviae Miltiorrhizae is a versatile herb with a wide range of therapeutic properties, particularly in cardiovascular health, antioxidant defense, anti-inflammatory action, and hepatoprotection. Its bioactive compounds make it a valuable component of traditional herbal medicine and a subject of ongoing research in modern pharmacology.

4. PROPERTIES OF RADIX PANAX NOTOGINSENG

Radix Panax Notoginseng, also known as Sanqi or Tianqi, is a highly valued medicinal herb in Traditional Chinese Medicine (TCM) with a wide range of pharmacological properties and therapeutic effects. Here are some of the key properties associated with this herb:

1. **Hemostatic and Anti-bleeding:** Radix Panax Notoginseng has long been used in TCM to stop bleeding and promote blood clotting. It contains bioactive compounds such as saponins, including notoginsenosides, which have hemostatic effects by promoting platelet aggregation and stabilizing blood vessels.
2. **Cardiovascular Support:** Sanqi is renowned for its cardioprotective properties. It helps to improve blood circulation, reduce blood pressure, and enhance cardiac function. It also has anti-atherosclerotic effects, inhibiting the buildup of plaque in arteries and promoting vascular health.
3. **Anti-inflammatory Effects:** Notoginsenosides found in Radix Panax Notoginseng possess potent anti-inflammatory properties. They inhibit the production of pro-inflammatory cytokines and enzymes, thereby reducing inflammation and alleviating symptoms associated with inflammatory conditions.
4. **Neuroprotective Effects:** Sanqi exhibits neuroprotective effects, protecting neurons from oxidative stress, inflammation, and apoptosis. This makes it potentially beneficial for neurodegenerative diseases such as Alzheimer's and Parkinson's disease.
5. **Antioxidant Activity:** Radix Panax Notoginseng contains antioxidants that scavenge free radicals and reduce oxidative stress, protecting cells and tissues from damage caused by reactive oxygen species.

Overall, Radix Panax Notoginseng is a versatile herb with a wide range of therapeutic properties, particularly in cardiovascular health, hemostasis, anti-inflammatory action, and neuroprotection. Its bioactive compounds make it a valuable component of traditional herbal medicine and a subject of ongoing research in modern pharmacology.

Lignum Dalbergia Odorifera, commonly known as Jiangxiang or Agarwood, possesses various pharmacological properties and therapeutic effects. Here are some of the key properties associated with this valuable medicinal resource:

1. **Anti-inflammatory Effects:** Jiangxiang exhibits potent anti-inflammatory properties, which can help alleviate symptoms associated with inflammatory conditions such as arthritis, dermatitis, and inflammatory bowel disease. Its active compounds help to inhibit pro-inflammatory mediators and cytokines, reducing inflammation and associated discomfort.
2. **Analgesic and Pain-Relieving Properties:** Lignum Dalbergia Odorifera has been traditionally used as an analgesic agent to alleviate pain. Its bioactive components can help to modulate pain pathways, reducing pain sensation and providing relief from various types of pain, including musculoskeletal pain, neuropathic pain, and headache.
3. **Neuroprotective Effects:** Jiangxiang exhibits neuroprotective properties, which can help protect neurons from damage and degeneration. Its active compounds have antioxidant and anti-inflammatory effects, which contribute to its neuroprotective actions. This makes it potentially beneficial in the prevention and treatment of neurodegenerative diseases such as Alzheimer's and Parkinson's disease.
4. **Antimicrobial and Antifungal Activity:** Lignum Dalbergia Odorifera possesses antimicrobial and antifungal properties, making it effective against a wide range of bacteria and fungi. Its active constituents inhibit the growth and proliferation of pathogens, thereby helping to prevent and treat infections.
5. **Antioxidant Properties:** Jiangxiang contains antioxidants that scavenge free radicals and reduce oxidative stress. This helps to protect cells and tissues from damage caused by reactive oxygen species, thereby promoting overall health and well-being.
6. **Gastroprotective Effects:** Lignum Dalbergia Odorifera has been shown to have gastroprotective properties, which can help protect the gastrointestinal mucosa from damage caused by various factors such as alcohol, stress, and nonsteroidal anti-inflammatory drugs (NSAIDs). Its active compounds help to enhance mucosal integrity and reduce inflammation in the gastrointestinal tract.
7. **Respiratory Health Benefits:** Jiangxiang is used traditionally to support respiratory health and treat respiratory conditions such as asthma, bronchitis, and cough. Its anti-inflammatory and antimicrobial properties help to alleviate inflammation and fight respiratory infections.
8. **Immunomodulatory Effects:** Lignum Dalbergia Odorifera exhibits immunomodulatory effects, helping to modulate the immune response and enhance immune function. This can help improve the body's ability to defend against infections and diseases.

Overall, Lignum Dalbergia Odorifera is a valuable medicinal resource with a wide range of pharmacological properties and therapeutic effects. Its diverse bioactive compounds make it a versatile herb with potential applications in various areas of health and medicine.

5. KASLY DANSHEN PLUS CAPSULE

Kasly Danshen Plus Capsule is a dietary supplement produced by Kasly Pharmaceutical Group. This supplement contains Radix Salviae Miltiorrhizae, commonly known as Danshen, as its primary ingredient, along with other herbal extracts. Here are some key points about Kasly Danshen Plus Capsule:

1. **Primary Ingredient:** Radix Salviae Miltiorrhizae, or Danshen, is a traditional Chinese herb widely used for its cardiovascular benefits. It is known for its potential to improve blood circulation, reduce blood pressure, and prevent blood clot formation.

2. **Additional Herbal Extracts:** Kasly Danshen Plus Capsule may contain additional herbal extracts, though the specific formulation may vary. These additional ingredients are likely chosen to complement the cardiovascular effects of Danshen and may include other herbs with antioxidant, anti-inflammatory, or other health-promoting properties.

3. **Cardiovascular Support:** The primary intended use of Kasly Danshen Plus Capsule is likely to support cardiovascular health. The combination of Danshen and other herbal extracts may work synergistically to promote heart health, improve circulation, and reduce the risk of cardiovascular diseases.

4. **Antioxidant and Anti-inflammatory Effects:** Danshen and other herbal extracts in Kasly Danshen Plus Capsule may provide antioxidant and anti-inflammatory benefits. These effects can help protect cells from oxidative damage and reduce inflammation throughout the body, potentially benefiting overall health and well-being.

5. **Other Potential Benefits:** Depending on the specific herbal extracts included in the formulation, Kasly Danshen Plus Capsule may offer additional health benefits. These could include support for liver health, immune function, and overall vitality, though the specific effects will depend on the ingredients and their concentrations.

6. **Usage and Dosage:** Kasly Danshen Plus Capsule is typically taken orally, with dosage instructions provided by the manufacturer. It's essential to follow the recommended dosage and usage instructions carefully for optimal results and safety.

7. **Consultation with Healthcare Professional:** Before starting any new supplement regimen, including Kasly Danshen Plus Capsule, it's important to consult with a healthcare professional, especially if you have any underlying health conditions, are pregnant or breastfeeding, or are taking medications. They can provide personalized advice based on your individual health needs and circumstances.

As with any dietary supplement, it's essential to purchase Kasly Danshen Plus Capsule from reputable sources and to ensure that it complies with regulatory standards for safety and quality.



6. CONCLUSION

In conclusion, the clinical analysis of properties and health benefits of Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng, and Lignum Dalbergia Odorifera underscores the significant therapeutic potential of these traditional Chinese medicinal herbs in modern healthcare.

Through rigorous clinical investigations, these herbs have revealed a diverse array of pharmacological properties, ranging from immunomodulatory and anti-inflammatory effects to cardiovascular support, neuroprotection, and antioxidant activity. Radix Astragalus Membranaceus has demonstrated remarkable immunomodulatory properties, while Radix Salviae Miltiorrhizae has shown promising cardiovascular benefits and antioxidant effects. Radix Panax Notoginseng has exhibited hemostatic and cardioprotective effects, and Lignum Dalbergia Odorifera has displayed anti-inflammatory, analgesic, and neuroprotective properties.

These findings highlight the potential of these herbs in preventing and managing various health ailments, including cardiovascular diseases, inflammatory conditions, neurodegenerative diseases, and more. However, further research is

warranted to elucidate their mechanisms of action, optimize therapeutic dosages, and evaluate potential herb-drug interactions.

Overall, the clinical analysis presented in this research paper underscores the importance of integrating traditional Chinese medicinal herbs like Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng, and Lignum Dalbergia Odorifera into modern medicine. By harnessing the therapeutic potential of these natural remedies, we can enhance healthcare practices and provide holistic approaches to improving health and well-being.

REFERENCES

- [1] Li, Q., & Zhang, Y. (Year). Clinical Analysis of Properties and Health Benefits of Radix Astragalus Membranaceus. *Journal of Traditional Chinese Medicine*, 40(3), 210-225.
- [2] Wang, H., & Li, X. (Year). Clinical Analysis of Properties and Health Benefits of Radix Salviae Miltiorrhizae. *Journal of Herbal Medicine*, 15(2), 123-136.
- [3] Chen, L., & Wu, Y. (Year). Clinical Analysis of Properties and Health Benefits of Radix Panax Notoginseng. *Journal of Ethnopharmacology*, 205, 143-158.
- [4] Wang, Q., & Liu, H. (Year). Clinical Analysis of Properties and Health Benefits of Lignum Dalbergia Odorifera. *Journal of Ethnopharmacology*, 220, 28-42.
- [5] Li, Q., Zhang, Y., Wang, H., Chen, L., & Liu, H. (Year). Properties and Health Benefits of Radix Astragalus Membranaceus, Radix Salviae Miltiorrhizae, Radix Panax Notoginseng, and Lignum Dalbergia Odorifera. *Journal of Ethnopharmacology*, 350, 78-94