



# OVERVIEW OF RESEARCH ON TRADITIONAL MEDICINAL INGREDIENTS AND RAW MATERIALS MENTIONED IN THE SOURCE TEXTS OF AMI BARIGCH-5 POWDER MEDICINE

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## KEYWORDS

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## ABSTRACT

Based on the results of recent scientific research, Mongolian traditional medicine is one of the ancient medical practices with a history spanning 5,000 years. An invaluable contribution to the development of formulations in Mongolian traditional medicine is the work by Chojjamts, titled “The Heart Essence of the Elixir Compiled from Various Essential Texts of Medicine: Ngo mtshar dga ston gter mdzod”. This work became widely renowned for its detailed explanation of the laws governing human health, the causes of illness, and the methods of healing, as well as for its exceptional collection of medicinal recipes. With the increasing need to systematically study traditional and modernized uses of medicines derived from plants,

animals, and minerals, it is essential to elevate research to a new level. By studying traditional technologies and identifying proven medicinal compounds from ancient and rare texts, this research focuses on exploring the formula of Srog dzin-5 found in Chojjamts’s work. This approach was chosen to contribute to the scientific understanding and application of traditional medicine. The Buddhist Lama Chojjamts lived between 1860 and 1928. His work, “The Heart Essence of the Elixir Compiled from Various Essential Texts of Medicine: Ngo mtshar dga ston gter mdzod” commonly referred to as “Ngo mtshar dga ston gter mdzod” was initiated in 1921 and meticulously revised and completed in 1922. This monumental text comprises 129 chapters.

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The 58th chapter specifically addresses remedies for heart diseases, prescribing the “Ami Barigch-5” formula mixed with molasses. It describes the medicine as effective for treating heart conditions, insanity, seizures, emotional distress, heart palpitations, and shortness of breath. The composition and potency of this powdered medicine were examined in comparison to other formulations and raw materials described in historical texts and primary sources. Research further indicates that the Ami Barigch-5 powder medicine, with its carefully curated ingredients and therapeutic properties, has been validated through pharmacological and clinical trials, confirming its efficacy as a traditional medicinal recipe.

## INTRODUCTION

Based on the results of recent scientific research, Mongolian traditional medicine is one of the ancient medical practices with a history spanning 5,000 years<sup>1</sup>. Therefore, today’s traditional medicine represents the distilled essence of the extensive experience accumulated by ancient Mongolians over thousands of years, embodying the advanced intellectual achievements and theoretical foundations they have attained<sup>2</sup>. Since the spread of Buddhism in Mongolia, the literary works produced have left an indelible mark on the historical development of traditional medicine<sup>2</sup>. Among these is Choijamts’s “The Heart Essence of the Elixir Compiled from Various Essential Texts of Medicine: Ngo mtshar dga ston gter mdzod” which has made a significant contribution to the advancement of Mongolian traditional medicinal formulations. This work, composed in Tibetan within a brief period from the spring of 1921 to the autumn of 1922, became widely celebrated for its comprehensive exposition of the laws governing human health, the nature of illness, and exceptional medicinal prescriptions for healing. It stands out as a seminal text that greatly influenced both the theoretical and practical aspects of traditional medicine<sup>3</sup>.

Even before humanity discovered the scientific principles underlying the composition, taste, quality,

potency, and application of medicinal substances and developed advanced pharmaceutical formulas, they had been gradually diversifying their food types and understanding their usage for thousands of years. This progress has contributed to the advancement of their way of life<sup>4</sup>. For this reason, we, the nomadic Mongols, have traditionally relied on consuming the meat of our livestock and drinking their milk, while also using the internal organs and other parts for both food and medicine. Even today, some medicinal formulations still incorporate raw materials of animal origin. Mongolian physicians have always paid special attention to properly identifying medicinal substances and discovering the indicators of high-quality ingredients to enhance the efficacy of their medicines<sup>4</sup>. Additionally, meticulous research on medicinal plants and raw materials derived from animals and minerals has become increasingly intensive.

On the other hand, in today’s context, where humanity increasingly seeks to avoid chemically derived substances, there is a growing need to systematically study the use of medicines derived from plants, animals, and minerals through a combination of traditional and innovative approaches. This includes researching and revitalizing traditional national technologies to identify medicines and formulations scientifically proven to benefit the human body. Moreover, rare and valuable remedies documented in ancient scriptures need to be rediscovered and verified through modern research<sup>5</sup>. From this perspective, this study was undertaken to investigate the Srog dzin-5 formula described in Choijamts’ work.

## PURPOSE

The aim was to compile an overview of the Srog dzin-5 (Ami barigch 5) powder formula described in the “Ngo mtshar dga ston gter mdzod” and its representation in traditional medical scriptures.

## RESULTS

**1. The structure and content of the “ngo mtshar dga ston gter mdzod” and the mention of the Ami barigch-5 medicine**

Good Lor of Khalkh Mongol was born in the Khan Province, Khandchin Baga Hoshuu territory, in what is now Burenkhangai soum of Bulgan province, and lived from 1860 to 1928. From a young age, he studied at the local monastery of his khoshuu, learning choir, astrology, and medical sciences. In 1930, he Revised the title of Manramba at the Mamba Monastery of the Eastern Monastic Center. Chojiamts was a renowned maaramba (traditional physician) of Mongolia's Great Monastery during the late 19th and early 20th centuries<sup>6</sup>. He was a spiritual craftsman of the Medical School of Ikh Khüree, revered for his devotion to numerous esteemed teachers and masters, whose footprints he metaphorically worshipped with deep respect. While skilled at creating sacred images, he was also exceptionally proficient in medical texts. He authored the book titled “Ngo mtshar dga ston gter mdzod” fully named” The Heart Essence of the Elixir Compiled from Various Essential Texts of Medicine, Relieving the Pains of Heat and Cold” which measures 11x29 cm and consists of 206 pages. The work was meticulously composed, beginning on the 8th day of the first summer month of the 11th year of the enthronement of the Radiant Sun, the Ten Thousand Years Bogd Jebtsundamba Khutughtu, during the Iron Rooster Year (1921). It was finalized on the 3rd day of the late autumn month in the Water Dog Year (1922)<sup>7</sup>.

He creatively integrated the classical theories of India, Tibetan medical traditions, and Mongolia's indigenous medical methods, adding his own experiences to compile this study<sup>2</sup>. This work consists of 129 chapters<sup>7</sup>. While the writing style and chapter sequence differ from traditional Tibetan medical texts, it is similar to the writings and sequence of Mongolian scholars such as Sumbe Khamba, which suggests that this is not just a commentary but an original work<sup>2</sup>. In chapters 5 to 8 of this work, the medicinal properties, principles, and methods for calming the soul, as well as the approaches for practicing and combining treatments, are described. From chapter 8 to chapter 125, the book covers treatments for commonly occurring diseases. Between chapters 125 and 127, recipes for medicines and therapeutic techniques aimed at alleviating 93 different diseases are included. Chapter 58 of this

book describes the formulation of the Srog dzin-5 medicine as a remedy for heart disease. It is prepared with specific ingredients to treat heart disease, insanity, fainting, depression, heart palpitations, and shortness of breath<sup>3</sup>. However, this formulation does not appear in other medicinal sources.

**Tibetan name: Srog dzin-5** སྟག་འཛིན་ལུ་བ

**Mongolian name: Raw material of Ami barigch-5:**

1. Heart of buffalo *Bos grunniens Linnaeus* འབྲོག་སྟོང
2. Nutmeg *Myristica fragrens* Houtt. ལྷ་ཉི
3. Heart beans *Choerospondia axillaris* Roxb. སྟོང་ཞོ་ག
4. Clove *Eugenia caryophyllata* Thump. ཁ་ཞི
5. Red sandal wood *Pterocarpus santalinus* L. ཙན་དན་  
དམར་པོ་ are mixed equally with molasses<sup>3</sup>.

This medicine is used to relieve heart disease, insanity, fainting, depression, heart palpitations, and shortness of breath<sup>3</sup>.

## 2. The study of source texts and references regarding the raw materials included in the composition of Ami barigch-5 powder medicine.

### 2.1. Heart of buffalo *Bos grunniens Linnaeus* འབྲོག་སྟོང

**Taste and Quality:** It is described as having a savory, pungent taste, warm, and oily characteristics<sup>8</sup>.

**Potency: “Mongolian pharmacology”:** The Heart of buffalo is said to have the effect of subduing heart wind and calming, making it useful for treating heart wind disorders, such as agitation, chest fullness, insomnia, irregular heartbeats, and heart-related pains<sup>8</sup>.

**“Crystal Ball”:** The Heart of buffalo is said to subdue neurological disorders, delirium, fainting, and heart palpitations.

**“Khrungs dpe dri med sel gyi me long”:** Heart of buffalo is effective in subduing heart wind and calming, making it helpful for treating symptoms such as agitation, chest fullness, insomnia, irregular heart rhythms, and heart pain<sup>9</sup>.

**“The Collected Works of Teacher Ts. Khaidav”:** It is stated that the hearts of parrots, heart of buffalo, and rabbits are effective in subduing unusual diseases, such as delirium and intoxication<sup>10</sup>.

From the above texts, it is clear that the heart of the bison is considered a supreme medicine for subduing the symptoms of heart-related diseases. Additionally,

in traditional medicine, the 20th chapter of the Theoretical Foundation in the Four Foundation of Medicine mentions that the lungs, heart, liver, spleen, and kidneys each treat their respective diseases, which indicates that the heart of the heart of buffalo is used for healing heart diseases.

## 2.2. *Nutmeg Myristica fragrens* Houtt. མྲོ་ཁྲི

**Taste and Quality:** It is described as having a hot taste, heavy, oily, soft, and warm characteristics in one source<sup>4</sup>. In another source, it is noted as having a bitter taste, warm, oily, and heavy characteristics<sup>8</sup>. Additionally, it is stated that Nutmeg has a hot taste, warm, oily, heavy, and soft characteristics in other references<sup>10,24</sup>.

**Potency: “Four Medical Tantras”:** It is said to subdue wind and alleviate heart diseases<sup>11</sup>.

**“Smang ming rgya mtsho”:** Nutmeg is said to alleviate heart wind heat<sup>12</sup>.

“达日茂玛仁巴·罗布桑朝日嘎著，金光注释集”：It is said to subdue wind and alleviate heart diseases<sup>13</sup>.

**“Dri med shel phreng nas bshad pa’I sman gyi ‘khrungs dpe mdzes mtshar mig rgyan”:** The seed of Nutmeg is oily and heavy, and is used to treat heart deficiency diseases<sup>14</sup>.

“蒙药学家罗布桑学术著作大成.”：It is said to subdue wind, reinforce energy, absorb excess fluids, and open the channels<sup>17</sup>.

**“The collected Works of teacher Ts. Khaidav”:** The nutmeg contains approximately 5% essential oil. The composition of this oil includes monoterpenes such as pinene, camphene, dipentene, linalool, borneol, geraniol, and citral. Additionally, the myristica contains around 40% of an oil rich in saturated fatty acids. The main components of this viscous oil are triglycerides, myristic acid, along with starch (20%), saponins, pectin, and aleurone (pigment-containing compounds). It is noted that the term “heart wind” is associated with the following symptoms: insomnia, emotional instability, occasional unusual behavior, potentially leading to delirium or madness, pain in the left chest and shoulder, sensation of heart twisting or pain as if the heart is being squeezed<sup>15</sup>.

## 2.3. Heart beans *Choerospondia axillaris* Roxb. རྩེ་ཁྲི་ཤི

**Taste and Quality:** According to<sup>4</sup>: Sweet and sour taste; is balanced, oily, heavy, and gentle in quality. According to<sup>16</sup>: Sweet and sour taste. According to<sup>15</sup>: Sweet and sour taste; balanced, oily, heavy, and gentle in quality. According to<sup>17</sup>: Sweet and sour taste is balanced, oily, heavy, and gentle in quality.

**Potency: “Four Medical Tantras”:** Heart beans, kidney bean, and spleen bean are effective in relieving heart heat, kidney heat, and spleen heat<sup>11</sup>.

**“Smang ming rgya mtsho”:** Heart bean is effective in treating heart-related diseases<sup>12</sup>.

**“Dri med shel phreng nas bshad pa’I sman gyi ‘khrungs dpe mdzes mtshar mig rgyan”:** Heart beans alleviates heart heat<sup>14</sup>.

**“Ngo mtshar dga ston gter mdzod”:** Beans of various types are effective in treating their respective heat-related disorders<sup>3</sup>.

“蒙药学家罗布桑学术著作大成-6”：Heart beans as a powerful herb, capable of soothing and balancing the body’s heat. Its large stem and beautiful white flower, which eventually bears heart-shaped fruit, is how it is named heart beans. Its potency lies in relieving heart-related diseases<sup>16</sup>.

“The Collected Works of Teacher Ts. Khaidav”：that Heart beans improves heart vitality and has an action of reducing organ-related heat disorders<sup>15</sup>.

“蒙药学家罗布桑学术著作大成-2”：that Heart beans has the ability to alleviate heart heat and improve heart vitality. It is used to treat symptoms of heart heat such as confusion, dizziness, chest tightness, heart palpitations, and sensations of burning in the back and sides. It is also effective for treating heart tremors, sharp chest pains, fever, and overall restlessness caused by heart heat<sup>17</sup>.

## 2.4. Clove *Eugenia caryophyllata* Thump. ལྷ་ཁྲི

**Taste and Quality:** According to<sup>8</sup>: Pungent with a slightly bitter taste; warm, heavy, oily, soft, stable, and dry in quality. According to<sup>4</sup>: Slightly bitter taste; warm, heavy, and oily in quality.

According to<sup>17</sup>: Clove has a hot and bitter taste; warm, oily, stable, soft, and dry in quality.



**Potency:** “Four Medical Tantras”: Clove alleviates vital channel disorders and cold-induced wind disorders<sup>11</sup>.

**“Smang ming rgya mtsho”:** Treats cold wind disorders, vital channel disorders, and liver and gallbladder diseases<sup>12</sup>.

**“Mongolian pharmacology”:** “Eliminates cold-induced wind disorders, restores warmth, enhances digestion, stimulates appetite, detoxifies the body, treats skin eruptions, and aids in throat ailments”<sup>8</sup>.

**“The Collected Works of Teacher Ts. Khaidav”:** Clove is abundant in Southeast Asia and is also cultivated in regions like Africa, Zimbabwe, Brazil, and Jamaica. Lish contains 17-20% essential oil, which is extracted via steam distillation. The purified oil consists of: eugenol: 70-85%, acetyleugenol: Minor component, caryophyllene and sesquiterpene compounds. Additionally, it contains up to 20% tannins. Clove is considered a primary remedy for balancing the major wind channels and alleviating cold-induced wind disorders.

**“Dri med shel phreng nas bshad pa’I sman gyi ‘khrungs dpe mdzes mtshar mig rgyan”:** Clove effectively alleviates disorders related to major wind channels and cold-induced wind ailments.”Rinbun” describes the having hot and intense qualities, effective in treating cold related illnesses and skin eruptions. It generates warmth in the stomach and intestines and aids in digesting oral toxins<sup>17</sup>.

**2.5 Red sandal wood *Pterocarpus santalinus* L.**  
ཅན་དན་དམར་པོ་

**Taste and Quality:** According to4: Bitter, astringent taste; warm, oily, and dry quality. According to8: Bitter, salty taste; dull and cool quality. According to<sup>17</sup>: Bitter, salty taste; cool and dull quality.

**Therapeutic Power: “Four Medical Tantras”:** Effective for alleviating blood heat<sup>11</sup>.

**“Smang ming rgya mtsho”:** Red sandalwood relieves disorders caused by the imbalance of wind and blood<sup>12</sup>.

“蒙药学家罗布桑学术著作大成-2”：Alleviates blood heat, pacifies wind and blood imbalances, and reduces swelling<sup>19</sup>.

**“Traditional Mongolian Medicine Formulas”:**

Possesses the ability to alleviate blood heat, pacify wind and blood imbalances, and reduce swelling<sup>8</sup>.

**“The Collected Works of Teacher Ts. Khaidav”:** Effective for conditions where wind and blood are imbalanced, leading to blood heart diseases<sup>17</sup>.

### 3. The researched aspects of the “ami barigch 5” powder medicine:

The “Ami barigch 5” formula is praised for its efficacy in alleviating heart disease, and the fact that this particular formula is not commonly found in other medicinal sources further supports the claim that “Ngo mtshar dga ston gter mdzod” is a unique work where Dr. Choijamts has documented his personal therapeutic experiences. Researchers, including Ts. Altantuya and colleagues, have identified some biologically active compounds in the “Ami barigch 5” formula using high-performance liquid chromatography (HPLC). They found the following active components: eugenol at 14.2±2.7% (14.2%), carvacrol at 1.7±0.4% (1.7%), and myristicin at 1.4±0.45% (1.4%)<sup>20</sup>. Based on studies of the actions of these chemical compounds, it has been observed that:

**Myristicin:** Initially discovered in the seeds of nutmeg, myristicin has properties that help alleviate anxiety, relieve abdominal pain, reduce nausea, stop diarrhea, and exhibit antibacterial effects<sup>21</sup>.

**Eugenol:** Known for its antibacterial, antiviral, antifungal, anticancer, anti-inflammatory, and antioxidant properties, eugenol has been widely used in various fields, including cosmetics, medicine, and pharmacology, for centuries<sup>22</sup>.

**Carvacol:** It’s a phenol monoterpenoid, which is found in plant essential oils. Carvacrol, is known for its broad range of bioactivity, such as antibacterial, antioxidant, and anti-cancer properties, make it clinically useful<sup>23</sup>.

These properties align with the effects observed in the “Ami barigch 5” medicine.

Furthermore, the above researchers have studied the effects of the “Ami barigch 5” formula in various experimental models, including ethanol-induced anxiety and depression models, as well as chronic stress-induced depression in rats. The results showed that the

medicine increased activity levels, reduced despair, and prevented the loss of body weight and anxiety. In models of acute stress induced by movement restriction, it was found that the “Ami barigch 5” medicine prevented the shrinkage of adrenal glands during stressful periods and the enlargement of the adrenal cortex, demonstrating its potential therapeutic effects in stress-related disorders<sup>20</sup>.

Additionally, the “Ami barigch 5” formula has an LD<sub>50</sub> of 25.8 (24-29) g/kg, which, according to the classifications by K.K. Sidorov (1973) and I.B. Berezovskaya (2003), is considered “non-toxic” based on two separate studies<sup>5,20</sup>.

According to the research findings of B. Odonchimeg and colleagues, the “Ami barigch 5” medicine has been clinically proven to reduce cortisol levels in human blood serum by an average of 27.3%. The study also demonstrated that the effect increases depending on the duration of administration, with statistically significant

results ( $p < 0.01$ ). Clinical observational studies have confirmed that the “Ami barigch 5” medicine exhibits anti-stress, anti-depressive, and anti-pathological effects<sup>5</sup>.

### CONCLUSION

The “Ami barigch 5” powder medicine is mentioned only in Choijamts’ work “Ngo mtshar dga ston gter mdzod” and is not referenced in any other historical texts, indicating that it is an extremely rare formula. In Chapter 58 of the book, it is stated that the “Ami barigch -5” medicine, mixed with molasses, is used to treat heart diseases. It is noted for its effects in alleviating heart disease, madness, seizures, mental distress, heart palpitations, and shortness of breath. Recent studies have shown that the ingredients and efficacy of the “Ami barigch -5” bread medicine have been verified through pharmacological and clinical trials, confirming its effectiveness.

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