SPIRITUAL SIGNIFICANCE
Myrrh and frankincense have had spiritual significance since ancient times and they also were adopted as medicines for physical ailments. When referring to this pair of herbs, Westerners might immediately think of their historic importance in religion. The herbs are best known through the story of the Three Wise Men (Magi) delivering gold, frankincense, and myrrh for the baby Jesus; myrrh was also used to anoint Jesus’ body after the crucifixion. These herbs, valued like gold, were mentioned repeatedly in the Old Testament, in instructions to Moses about making incense and anointing oil, and in the Song of Solomon, where, among other references, are these:

Who is this coming up from the wilderness
Like palm-trees of smoke,
Perfumed with myrrh and frankincense,
From every powder of the merchant?

“Till the day doth break forth,
And the shadows have fled away,
I will get me unto the mountain of myrrh,
And unto the hill of frankincense.

St. Nicholas, Archbishop of Myra in Lycia (now in Turkey) was a 4th century miracle-worker, known also for the healing myrrh that flowed from his sacred relics. A prayer to St. Nicholas is:

With divine myrrh the divine grace of the Spirit anointed thee, who didst preside as the leader of Myra, and having made the ends of the world fragrant with the myrrh of virtues thou holiest of men, through the pleasant breathings of thine intercessions always driving away the evil stench of the passions. Therefore, in faith we render thee great praise, and celebrate thine all-holy memory, O Nicholas....

In like manner, icons associated with him have been reported to be myrrh-streaming: leaving off a gentle flow of myrrh each day. In 1998, such a phenomenon was reported in Russia for an icon of Czar Nicholas II and from another icon of his family, both originally retained at a church dedicated to Nicholas the miracle-worker.

ORIGINS
The origins of myrrh and frankincense are traced to the Arabian Peninsula. According to Herodotus (5th century BC): “Arabia is the only country which produces frankincense, myrrh, cassia and cinnamon... the trees bearing the frankincense are guarded by winged serpents of small size and various colors.” Diodorus Siculus writes, in the second half of the first century BC, that “all of Arabia exudes a most delicate fragrance; even the seamen passing by Arabia can smell the strong fragrance that gives health and vigor.” He also mentioned gold mines so pure that no smelting was necessary. The Magi, carrying myrrh, frankincense, and gold, came from the East: Arabia. The frankincense trade route, with transport by donkeys and later by camel caravans, reached Jerusalem and Egypt from the Dhofar region of what is today Oman, through Yemen, turning north to follow the Red Sea coast. It is likely that the same or similar species of the resin-bearing plants grew across the Red Sea in the area that is now Somalia and Ethiopia, while the collection of the gum resins was initiated in Arabia.

In these ancient times, myrrh had been used in Egypt for embalming the bodies of Pharaohs, and frankincense had been used in India to make incense for worship (in India, a related species of plant is indigenous, though it produces an inferior product). Myrrh and frankincense, traded throughout the Middle East at least since 1500 B.C., eventually came to China. There is mention of myrrh in a 4th century (A.D.) Chinese book that is no longer extant but is quoted directly in a later text. As in the Middle East, myrrh and frankincense were used in China for making incense, and are so used even today. But, in character-
istic Chinese fashion of finding a medicinal use for virtually everything, these herbs were soon employed as medicines. In the Chinese medicine books, frankincense was first mentioned in the Mingyi Bielu (Miscellaneous Records of Famous Physicians; ca. 500 A.D.). It was called fahuangxiang (calling back the soul fragrance) and ruxiang (nipple-shaped fragrance); the latter name has been retained, but the former is true to the original use of frankincense as incense for mourning the dead. Myrrh, already known in China, entered the formal herb books somewhat later, in the Kaibao Bencao (Materia Medica of the Kaibao Era, 973 A.D.). Its name, moyao, indicates the medicine (yao) of mo, the Chinese pronunciation of the Arabic name murr, meaning bitter.

In modern Chinese Materia Medica, these two resins are classified as herbs for vitalizing circulation of blood and are utilized for treating traumatic injury, painful swellings, masses, and other disorders related to stasis syndromes. Their source remains the Middle East, though frankincense trees have been cultivated in southern China.

**BOTANICAL ORIGIN AND COLLECTION**

Both myrrh and frankincense grow as small trees or shrubs; they are of the botanical family Burseraceae. Their natural growing range is limited, but this has been extended by cultivation, and the current supplies are adequate to meet worldwide demand. Today, most of the internationally-traded myrrh and frankincense are produced in the southern Arabian peninsula (Oman, Yemen) and in northeast Africa (Somalia). The primary species relied upon today are Commiphora myrrha for myrrh and Boswellia carterii for frankincense. Other significant commercial sources are shown in the table.

<table>
<thead>
<tr>
<th>Frankincense Sources</th>
<th>Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boswellia carterii (=Boswellia sacra)</td>
<td>Arabic: mogar (tree); sheehaz (resin)</td>
</tr>
<tr>
<td>Boswellia frereana</td>
<td>Somali: yagar (tree), maldi (resin)</td>
</tr>
<tr>
<td>Boswellia serrata</td>
<td>Indian: olibanum; salai guggul</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Myrrh Sources</th>
<th>Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commiphora myrrha (=Commiphora molmol)</td>
<td>Somali: didin (tree); molmol (resin)</td>
</tr>
<tr>
<td>Commiphora mukul</td>
<td>Indian bdellium, false myrrh, guggu</td>
</tr>
<tr>
<td>Commiphora erythraea</td>
<td>sweet myrrh</td>
</tr>
</tbody>
</table>

“Who is this coming up from the wilderness
Like palm-trees of smoke,
Perfumed with myrrh and frankincense,
From every powder of the merchant?”

“Till the day doth break forth,
And the shadows have fled away,
I will get me unto the mountain of myrrh,
And unto the hill of frankincense.”

Frankincense in the Dhofar region of Oman
Most resin (whether myrrh or frankincense) is obtained by tapping: making deliberate incisions with a specially designed tool or ordinary axe, about 2 inches long, into the bark of the tree. The milky liquid that exudes hardens on exposure to air into droplets or “tears,” which are then easily detached by the collector about two weeks later. New tappings are made at the same place as old ones after removing hardened resin from the previous cut. If the tapping interval is short, then a light scratching of the wood is usually sufficient to cause the resin to flow again. The particular details of the tapping—the time of year it is undertaken, its duration, and the interval between individual tappings—vary according to the species and the customs in the area of production. For example, in Somalia there are usually two periods when Boswellia is tapped, each lasting 3–4 months, involving successive tappings at approximately 15-day intervals, with the timing of the tapping periods dependent on the onset and extent of the rains. The resin is stored for about 12 weeks to harden. The only processing undertaken after collection is sorting and grading of the resin globules, usually done by the local merchant to whom it is sold rather than the collector.

**MYRRH AND FRANKINCENSE IN CHINESE HERB FORMULAS**

Small amounts of raw myrrh and frankincense taken internally stimulate the stomach and promote digestion, but in larger amounts they can be irritating to the stomach, so the raw material is used mainly for external applications and for low dosage forms, such as pills and capsules. To use the herbs internally at larger doses in decoctions, both myrrh and frankincense are often stir-fried (or baked), either in their original form or after being soaked in rice vinegar.

In the book Dui Yao: The Art of Combining Chinese Medicinals, the properties and uses of myrrh and frankincense, individually or in combination, are elaborated:

When combined, they provide these properties:

“One tends to rectify the blood; the other to rectify the qi; When these two medicinals are combined together, they complement each other. Together, they effectively move the qi and quicken the blood, dispel stasis, free the flow of the viscera, bowels, and channels, quicken the network vessels, disperse swelling, stop pain, constrain weeping sores and engender flesh.”

The major indications for the combination of myrrh and frankincense are:

1. Pain in the epigastrum, abdomen, hypochondria, and/or heart due to qi and blood stasis, and stagnation in the viscera and bowels or the channels (jing) and network vessels (luo).

2. Amenorrhea, dysmenorrhea, or postpartum abdominal pain due to blood stasis.

3. Rheumatic complaints due to wind damp causing qi and blood stagnation and stasis in the network vessels.

4. Wounds, scars, and skin inflammation with blood stasis and necrotic tissue.

5. Traumatic injuries with pain, swelling, and redness due to qi stagnation and blood stasis.

Yang Yifan, in her book Chinese Herbal Medicines Comparisons and Characteristics, says:

Frankincense and myrrh are aromatic herbs. They are very bitter and pungent, and move quickly. They can strongly disperse congealed blood, and direct it to descend, open up the meridians and collaterals, and are very effective for relieving pain. The two herbs are often used together to enhance the therapeutic effect. In clinical practice, they are often applied to reduce pain and swelling in trauma, arthritis, and fractures.
Frankincense is warm and pungent, and enters the heart and lung meridians. Compared with myrrh, it promotes not only the blood circulation, but also the qi movement. It can also relax tendons. Frankincense is especially suitable for conditions where the joints and muscles are very stiff, swollen, and painful. It is also often used topically more than myrrh.

Myrrh is neutral and it enters the liver meridians. Compared with frankincense, it is more bitter and its dispersing action is also stronger. This herb is stronger than frankincense for breaking up congealed blood and is used not only in trauma and fracture, but also for hard masses, such as tumors.

Both of the herbs have a strong smell and may easily cause nausea and vomiting, and overdose may injure the stomach, so they are better used in pills and capsules. She has emphasized the strength of these herbs, and their ability to treat serious conditions, such as when joint and muscle pain is severe. Despite her comment that frankincense is used more often topically, myrrh is commonly used for local therapies such as in plasters, liniments, and herbal washes.

Dr. Jiao Shude, one of the most famous Chinese herb doctors of the 20th century, described the similarities and differences between the herbs and the value of combining the two:

Frankincense and myrrh both quicken the blood and relieve pain. However, frankincense moves qi to quicken the blood and also stretches the sinews, frees the channels, soothes the network vessels, and relieves pain. Myrrh, by contrast, dissipates stasis to quicken the blood and also disperses swelling and settles pain. The former tends to act on qi, while the latter acts on blood. When the two medicinals are used together, the benefits of each are mutually enhanced. Therefore, these two medicinals are almost always used together in clinical practice.

According to the Advanced Textbook of Traditional Chinese Medicine and Pharmacology (4), myrrh and frankincense are quite similar in their use internally. The authors say that both herbs regulate qi and blood, and that they are often used together, but “their difference lies in that frankincense can also ease the tendons and muscles, while myrrh is better at activating blood circulation and removing stasis.” The emphasis on the role of frankincense in regulating qi, mentioned by the other authors, is related to its more penetrating fragrance, a characteristic of many qi regulating herbs, such as saussurea, magnolia bark, and sandalwood. By contrast, myrrh has a restrained fragrance, but it has a more potent bitter taste that helps overcome blood stasis.

One of the best-known formulations with myrrh and frankincense is Qi Li San, the name referring to the small dose of the powder to be taken internally each time (7/1000 of a tael, about 0.4 grams). The traditional formulation is:

**Qi Li San**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity (grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dragon’s blood (xuejie)</td>
<td>15.0</td>
</tr>
<tr>
<td>Catechu (ercha)</td>
<td>7.5</td>
</tr>
<tr>
<td>Myrrh (moyao)</td>
<td>5.0</td>
</tr>
<tr>
<td>Frankincense (ruxiang)</td>
<td>5.0</td>
</tr>
<tr>
<td>Carthamus (honghua)</td>
<td>5.0</td>
</tr>
<tr>
<td>Cinnabar (zhusha)</td>
<td>4.0</td>
</tr>
<tr>
<td>Musk (shexiang)</td>
<td>0.4</td>
</tr>
<tr>
<td>Borneol (bingpian)</td>
<td>0.4</td>
</tr>
</tbody>
</table>

This is a highly resinous mixture, as dragon’s blood and catechu are also resins, and it is strongly aromatic, with penetrating fragrances of musk and borneol complimenting the myrrh and frankincense. Qi Li San is given for all kinds of injuries. No doubt, this ancient prescription provided the inspiration for the 20th century formula Yunnan Bai Yao, an aromatic blend that is currently the most famous injury remedy in Asia.
Nutriceuticals are natural products, or synthesized compounds that match natural products, prepared by enzymatic transformation that retains a natural quality, rather than simple chemical transformation. They are used as dietary or herbal supplements that have implied or explicitly proclaimed health benefits. The concept of a nutriceutical came from the idea that nutritional supplements, such as vitamins and minerals, could be used in place of pharmaceuticals in alleviating some ailments or, at the least, promoting the healthy function of the body. The substances in the nutriceutical category include beneficial compounds in foods that are not counted among the nutrients, as well as various herbs and herbal active components.

Both myrrh and frankincense have given rise to popular nutriceuticals: myrrh yields guggulsterones (named after the Indian myrrh: guggul) and frankincense yields boswellic acids (named after the botanical source Boswellia). In both cases, the original research and product development originated in India, as part of an ongoing effort to investigate the tradition of Ayurvedic medicine. Much of the guggulsterone and boswellic acid currently used in manufacturing products comes from an American company Sabinsa Corporation.

Guggulsterones are reputed to lower blood lipids, including cholesterol. The proposed mechanism, based on animal research, is that guggulsterone inhibits a gene in the nucleus of liver cells called the farnesoid X receptor (FXR). This receptor responds to bile acids and affects cholesterol absorption. It is possible that by inhibiting this receptor, intestinal cholesterol is less well absorbed and cholesterol in the liver is better excreted, lowering the serum cholesterol levels. In general, steroidal compounds in herbs, including common triterpene glycosides (saponins) and sterols, have been shown to have a beneficial effect on blood lipids. It remains to be determined whether guggulsterone is superior to other compounds found in plants. The standardized nutriceutical available for most manufacturing of products is 2.5% guggulsterones; preparations of 7.5% and of 10% guggulsterones are produced, but the high sterone products are soft and more difficult to use in manufacturing. The Sabinsa product is trademarked Gugulipid, and some authors confuse this name with the more general term guggulsterone.

Boswellic acids are reputed to have potent anti-inflammatory activity. Research has demonstrated an inhibition of the 5-LOX (lipoxygenase) system, involved in the enzymatic pathways that produce inflammatory molecules (leukotrienes and thromboxanes) from common fatty acids. Drug products that inhibit these enzymes are mainly used in the treatment of arthritis, though there are applications for other inflammatory diseases, such as asthma and ulcerative colitis. Further, 5-LOX inhibitors, including boswellic acid, are now being investigated for potential anticancer activity (7). The standardized boswellic acid preparations list their content as 50–70% boswellic acids, though it has been suggested that these are actually total organic acids from frankincense, with boswellic acids as the major component. The Sabinsa product is trademarked Boswellin, which should not be confused with the more general term boswellic acid.

Both the guggulsterones and boswellic acids are used to manufacture numerous formulations, primarily for use in treating elevated blood lipids and arthralgia, respectively.

Boswellic acid structure

Guggulsterones, a group of compounds that have not yet been characterized specifically, have a four-ring structure, with only a partial ring at the top position (corresponding to the diagram here). The “COOH” component at the bottom of this diagram is what makes this compound an acid; in the sterone, the CO is absent, and a double-bonded oxygen appears nearby.
Modern herbal formulas that rely strongly on the ingredients Myrrh and Frankincense are Myrrh Tablets and San Qi 17 (both available as Seven Forests products). Both formulas focus on the treatment of static blood. Myrrh Tablets is more suited to treatment of blood stasis caused by non-injury factors, such as infections and inflammation, while San Qi 17 is best used for injuries (including surgical injury).

For infections that are resistant to antibiotic therapy, consider using Myrrh Tablets to help the antibiotics or anti-infection herb formulas and immune cells gain access to the site of infection.

Myrrh and Frankincense are said to ‘crack static blood’, which means they can hasten the resolution of clotted blood, as is found in bruises, broken bones, and knife wounds. In San Qi 17 this action is supported by similar acting herbs such as San-chi, Calamus gum and Polygala. For this reason San Qi 17 can be compared with the patent remedies that are sometimes called ‘hit pills’, because they were designed to treat a person who has been struck by a hard blow. This frequently mentioned herb for hyperlipidemia. This fruit, and Rose fruit, are administered in doses of several grams each time (equal to the extracts in this formulation), to reduce lipid absorption and stimulate lipid excretion. Turmeric is also reported to lower lipids; the main active component appears to be curcumin, which gives the herb its yellow color.

Boswellamine is a formula that focuses on the treatment of osteoarthritis and cartilage deterioration. It delivers a full dose of glucosamine sulfate, an anti-inflammatory agent that is especially valued for treating degeneration of the joints. Unlike several commercial products, this formula does not combine glucosamine with chondroitin, a complex form of glucosamine, since recent studies suggest that this condition is unnecessary, as the chondroitin must be broken down to glucosamine for absorption and utilization. Glucosamine is provided here along with the traditional combination of Dipsacus, Myrrh and Frankincense, which are used to help regenerate tissues and alleviate pain. Boswellic acid, a component of Frankincense, helps alleviate joint inflammation, especially osteoarthritis, as confirmed by several clinical trials.

**Myrrh Tablets**

**INGREDIENTS**

- moyao: Myrrh
- ruxiang: Frankincense
- zelan: Lycopus
- taoren: Persica
- honghua: Carthamus
- Shaoyao: Peony
- dillong: Lumbricus
- yujin: Curcuma
- danggui: Tang-kuei
- chuanxiong: Cnidium
- shengdi: Rehmannia
- guizhi: Cinnamon twig

**San Qi 17**

**INGREDIENTS**

- sanqi: San-chi
- moyao: Myrrh
- ruxiang: Frankincense
- xuejie: Calamus gum
- Yujin: Curcuma
- taoren: Persica
- danggui: Tang-kuei
- chishao: Red peony
- sumu: Sappan wood
- guizhi: Cinnamon twig
- heilouku: Kadsura
- jiangxiang: Dalbergia
- zhechomg: Eupolyphaga
- honghua: Carthamus
- dahuang: Rhubarb
- zoumatai: Tsou-ma-tai
- gancao: Licorice

**Guggul-Rose**

**INGREDIENTS**

- Guggul: Myrrh
- shanzha: Crataegus
- jinyingzi: Rose fruit
- jianghuang: Turmeric

**Guggul**

- xuduan: Dipsacus
- moyao: Myrrh
- ruxiang: Frankincense

**Glucosamine sulfate**

**Boswellamine**

- Glucosamine sulfate
- Guggul
- Crataegus
- Rose fruit
- Turmeric